The colourful dimensions of ethnic dermatology

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Introduction

The skin is the organ most linked with our sense of appearance and identity. It therefore impacts tremendously upon our quality of life. Skin pathology exists across different ethnicities, however, the manifestations of these can vary between groups. During my selective placement in dermatology, I saw how different skin presentations could vary in their appearance, prognosis, and treatment according to ethnicity. Researching this, I came across the work of Dr Ophelia Dadzie and her special interest in ethnic dermatology. A year after corresponding with Dr Dadzie, I was fortunate to meet with her in the United Kingdom (UK) following my elective placement this year. Our discussion cultivated my interest in this emerging field and led me to realise how ethnic dermatology is highly relevant to New Zealand's (NZ) population.

Dr Ophelia Dadzie is a consultant dermatologist and dermatopathologist at North West London Pathology, Imperial College Healthcare NHS Trust (Hillingdon Hospital Site) in London, who has a special interest in ethnic dermatology. She has been the editor of several textbooks and has spoken internationally on this subject. She is also the founder and director of London Ethnic Skin Limited. For part of her training, Dr Dadzie travelled to the United States of America (USA) where for the first time she was met with the consideration of skin of colour in dermatology. 'I'd never previously thought about cutaneous diversity and how skin conditions could have different presentations. Being of African descent, I also had a personal interest.' Dr Dadzie realised how several of the needs of people with darker-coloured skin were not being met. She had begun to recognise that problems existed with understanding how pathologies in darker skin could present differently and how complex issues can arise with darker skin. Thus, Dr Dadzie's passion for alleviating skin inequities in dermatology was born. Inspired by this exposure and new way of thinking about dermatological presentations, Dr Dadzie returned to the UK and began research to identify and substantiate the issues concerning ethnic dermatology.

The need for thinking about ethnic dermatology stems from the historical background of dermatology itself. Clinical dermatology emerged as an independent discipline in Europe during the 19th and 20th centuries.[1] These were periods in which anthropologists and philosophers categorised groups within humans, being significantly influenced by social ideas at the time. They strongly argued for the hierarchal ranking of these racial groups.[2] The classical descriptions and morphology of skin conditions were therefore developed within this context and are consequently based on patients with lighter skin.[3] Since then, awareness of the diversity of skin colour across the world has increased. Interest in the differences in presentations of the skin between different groups has also increased. But many of the terminologies and classifications within dermatology have not evolved, and do not pertain to variation in darker skin presentations.[2] Furthermore, traditional dermatology does not encompass several of the social and cultural issues for people with darker skin. Culture has an immense influence on a patient's perspective towards disease, doctors, and treatment.[4] There are several health practices and social views within each ethnic group that can ultimately influence a patient's skin. It was to encompass and address these issues, that the idea of ethnic dermatology was born.

Defining ethnic dermatology

Ethnic dermatology was a term coined by Dr Dadzie because she felt strongly that 'if you don't name an issue, it becomes very hard to find ways to change things'. It is an area of interest within dermatology that 'is dedicated to the presentation, diagnosis and management of skin disorders in patients who have richly pigmented skin with similar cutaneous characteristics'.[3] Literature from the USA uses the analogous term of 'skin of colour dermatology'.[3] In comparison to the term 'skin of colour', ethnicity is defined as 'the ethnic group or groups a person identifies with or has a sense of belonging to. It is a measure of cultural affiliation, in contrast to race, ancestry, nationality, or citizenship.'[5] Ethnicity is self-identified, and an individual may belong to more than one ethnic group.[5] Dr Dadzie uses the term 'ethnicity' because she recognised that 'ethnicity does not pertain to race and genetics, but it also encompasses culture. And there are some cultural aspects that we need to consider in dermatology.' To demonstrate this, Dr Dadzie highlights the example of Central Centrifugal Cicatricial Alopecia (CCCA), which causes alopecia, scarring on the scalp, and often permanent hair loss. Importantly, CCCA is more prevalent in people with afro-textured hair but is also partially related to hair-grooming practices such as braids and cornrows.[3] In this way, ethnic dermatology highlights the importance of genetics, biology,

and cultural practices on the skin conditions that we see.

However, the term of 'ethnic dermatology' does not come without its limitations. The term 'ethnic' can be controversial in terms of its meaning.[6] Should patients be considered in the ethnic groups that they self-identify with? For research purposes, how can we make statements of measure when people are able to identify with more than one group?[6] Ethnic dermatology is a non-specific term that is meant to represent an incredibly heterogenous group who share the sole commonality of having darker or non-Caucasian skin.[7] Furthermore, skin colour is really a continuous, rather than categorical variable.[2] At what point can someone be considered to have 'ethnic' or 'richly pigmented' skin? It is indeed difficult to find a term that addresses these issues and still encompasses the cultural considerations of ethnicity.

There is comparably very little research and emphasis on ethnic dermatology outside of the UK and USA. However, it is a greatly applicable topic in NZ. We are a country with incredible diversity in skin colour. Our Māori population is a unique part of this. At the time of the 2013 Census, Māori made up 14.9% of the population.[5] Aside from Māori, the number of people in NZ from other ethnic backgrounds is also notable. The Asian ethnic group made up 11.8% of the population in 2013, increasing from 9.2% in 2006.[5] The Pacific ethnic group was the fourth largest in 2013 after the European, Māori, and Asian ethnic groups.[5] The ethnic mix of our population is increasing as well. In 2013, 25.2% of people in NZ were born overseas, which was an increase of 303,159 people since 2001.[5] The ethnic diversity in NZ is therefore considerable and is continuing to grow. This has immense implications for the skin presentations that we see in medical care.

Skin presentations

It is now worth considering some of the differences in skin presentations across ethnicities. Melanin encompasses several biological pigments and is the key determinant of skin colour. It is synthesised in the basal layer of the epidermis by melanocytes. All skin has melanin, but the darkness of the skin is dependent upon variation in the amount and composition of that melanin.[1] In darker skin, the size, shape, and production rate of melanocytes is greater than in lighter skin.[1] The enzyme tyrosinase catalyses the production of melanin and has higher levels of activity in darker skin.[3]

When recognising the dermatological differences between ethnic groups, skin colour has several implications. Skin colour influences the diversity in the structure of the skin. For example, darker skin tends to have a thicker dermis layer and smaller collagen fibres.[8] Darker skin provides greater protection from ultraviolet (UV) exposure than fairer skin, because there is a larger amount of melanin in keratinocytes.[2] Skin colour also correlates with aging patterns for ethnic groups. Darker skin has more melanin contained in larger melanosomes. These tend to be degraded slower and with enzymes acting differently upon melanosomes of darker skin.[2]

There are other notable features of interest in skin between ethnicities. The effects of socioeconomic status (SES) on ethnic dermatology must be considered. The literature is consistent in the phenomenon that members of an ethnic majority in a country will tend to experience better health, including a lower prevalence and severity of skin conditions, than ethnic minorities.[8] Differential access to adequate nutrition, early dermatology care for skin presentations, and the ability to afford treatment as necessary are all factors that contribute to this inequity.[9]

The differences in skin presentations between ethnicities can be illustrated with the example of atopic dermatitis or eczema. Eczema is a common skin condition in NZ and manifests as itchy, dry skin, with erythema visible in fair skin. Erythema occurs due to dilated capillaries that cause subsequent reddening of the skin. This is a classical description of eczema. However, in more pigmented skin, eczema more commonly presents as patches of darkened skin colour. This is because inflammation in darker skin results in the release of inflammatory mediators that can increase the melanogenic function of the melanocyte.[7] This subsequently causes an overproduction of melanin, resulting in post-inflammatory hyperpigmentation.[1] Hyperpigmentation that is instigated by inflammation tends to be more distinct and persistent in ethnic skin.[4]

Research indicates that darker-skinned and Asian children are more likely to develop eczema during the first six months of life than European children.[3] Eczema appears to be more prevalent in darker skin.[1] Dr Dadzie describes how the severity of eczema can be underestimated in richly pigmented skin. This is owing to the difficulty of perceiving erythema, as well as post-inflammatory hyperpigmentation being more common than the classically described erythema. This has tremendous implications for the impacts upon the sufferer's quality of life.[3] Thus the aim of managing eczema in ethnic skin relies on knowledge of how presentation may differ in ethnic skin, as well as early initiation of treatment to prevent post-inflammatory hyperpigmentation.[7]

Skin cancer

Skin cancer is a topic where ethnic dermatology is highly relevant. NZ has high rates of skin cancers, including the greatest incidence of melanoma in the world.[10] Due to the greater protection from UV exposure that darker skin is afforded, a misconception is often made that darker skin is not at risk of skin cancer.[2] In reality, ethnic skin faces a significantly higher risk of mortality from certain skin malignancies than Caucasian populations.[9] Skin cancers in ethnic populations often present at an advanced stage with subsequent poorer prognosis than skin cancers in lighter-skin populations.[2] It has also been found that skin cancers will often present atypically in ethnic populations.[2] Here in NZ, the Māori and Pacific populations have a lower incidence of melanoma than NZ Europeans, but their melanomas are often thicker and more extensive at the time of diagnosis.[10] The thickness of the tumour is the major prognostic indicator of melanoma.[9] A study by Sneyd and Cox analysed all melanoma registrations in NZ between 1996–2006. It was found that the geometric mean tumour thickness of melanoma was 1.28 mm and 2.06 mm in Māori and Pacific groups respectively, compared to 0.91 mm in the European group.[10] Māori in this study were also more likely to present with thicker melanomas with a nodular pattern, and to have regional or lymph spread.[10] Despite the misconception that skin cancers do not affect populations with darker skin, ethnicity remains an important consideration in skin cancer in NZ due to the higher rates of delayed diagnosis and mortality.

Skin colour and skin lightening products

An important aspect of ethnic dermatology is the perception of skin colour. Cultural definitions of beauty vary from culture to culture. The perception that lighter skin is more socially desirable is notable, particularly amongst Asian and African cultures. Fair skin is often viewed as a sign of greater SES in several cultures.[2] Dr Dadzie explained that these are often deeply entrenched beliefs within an ethnic population, with historical events preceding them. 'I think the stem behind these beliefs is the remnants of colonialism. A lot of these countries where these ethnicities originated from had a history of colonialism – where the European population were in a better place, in positions of greater status. So, the longstanding view is that lighter skin is associated with doing better in life. There is that legacy there.' Despite changing times, that legacy sadly continues with advertising amongst several of these ethnic groups, promoting lighter skin as a standard of wealth, power, modernity, and well-being.[2] For instance, actors within Indian film industries tend to have fairer skin than the average population. They are commonly sought after for their endorsement of products ranging from cookware to beauty products, thereby cultivating the association between skin colour and SES.

Arising from these perceptions of skin colour is the existence of skin

lightening or bleaching products. Skin lightening involves cosmetic use of a range of agents to lighten normal pigmented skin.[2] Dr Dadzie considers the use of these to be a worldwide public-health issue. In Bamako, Mali, a prevalence study estimated that 25% of the female population currently used skin-lightening agents.[11] Products especially marketed for skin lightening are widely available in the Middle East, Asia, and South America.[11] Several of these products are easily obtainable here in NZ, sold in several ethnic stores and supermarkets with no legal restrictions.

The two agents used in these skin-lightening products are hydroquinone-based compounds and steroids, most commonly 0.05% clobetasol propionate. Mercury and caustic agents were formerly key components, but are becoming less common.[2] These components of skin-lightening products come with their own profile of adverse effects. Paradoxically, periorbital hyperpigmentation is the most common side effect of applying hydroquinone on the skin.[11] Application of high-dose steroids on the skin can also result in immunosuppression of the skin, with subsequent skin infections including cellulitis, scabies, and superficial bacterial pyoderma.[2] Steroid-induced acne and skin atrophy are also complications linked with the long-term use of steroids.[11] Systemically, high dosages of topical steroids have been linked with reports of a negative feedback on endogenous cortisol secretion, as well as induced hypercortisolism and adrenal insufficiency.[11]

Some literature reports concern about skin-lightening creams being used in pregnancy and on children.[4] Alarmingly, Dr Dadzie has heard of cases where these products have been used on infants.[11] Dr Dadzie feels that awareness exists about some of the adverse effects of these products, but that people are willing to face these risks due to the perceptions of skin colour as described previously. 'When you have these deeply entrenched messages in a society, everyone wants a better life. So, if they think they will have a better life by using these skin-lightening agents, they partake in it even though they may scar or have side effects. It is so much about social advantage.' Awareness of these products and their side effects is an important consideration when assessing a skin presentation, such as persistent acne. Dr Dadzie recommends going back to the basics of good history-taking technique. This includes asking open-ended questions and using a flexible non-judgmental approach to enquire about the use of alternative medications and treatments. 'Be aware that for some people, there is shame associated with usage and even shame with confessing to using these products to a doctor.' Dr Dadzie also stresses the importance of having the willingness to ask and learn about unfamiliar treatments that your patient may mention. Being able to elicit these details greatly improves management plans and eventual outcomes for these patients.

The future

Dr Dadzie's focus for the future of ethnic dermatology lies with ongoing research and specific training in ethnic dermatology for doctors. In a survey conducted amongst UK trainees in dermatology in 2013, 95% acknowledged that unique, specific dermatological conditions existed in ethnic skin.[12] However, only 49% of the respondents believed that they would be competent in treating the ethnic population of the UK at the end of their vocational training.[12] Dr Dadzie's views on the impact of the UK's evolving population on dermatology are easily applicable to that of NZ. 'We need to appreciate the fact that our population is changing and that there is a lot of genetic diversity. It is not just about migrants from different countries coming here, it is also admixture – so about generating new genotypes and phenotypes on a daily basis.' Ethnic dermatology encompasses the unique presentations, biological features, and cultural issues pertaining to skin in ethnic groups. But what underlies ethnic dermatology, in the words of Dr Dadzie, is 'a willingness to get to know and understand different cultures'.

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Conflicts of Interest

Dushiyanthi Rasanathan is a student reviewer for the NZMSJ. This article has gone through a double-blinded peer review process applied to all articles submitted to the NZMSJ, and has achieved the standard required for publishing. The author has no other conflict of interest.

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