Importance of skin of colour dermatology in the primary care setting in Australia

CPD

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Background
Australia is one of the most multicultural countries in the world. Basic knowledge in skin of colour dermatology is essential if we wish to strive for clinical excellence and improved patient outcomes for all Australians. A need for further training and education in this field has been highlighted by medical practitioners around the globe.

Objective
The aim of this paper is to demonstrate how skin in patients with skin of colour is biologically, functionally and structurally different to that of patients with lightly pigmented skin. This is captured through examples from common dermatological conditions and substantiated through relevant literature and expert opinion.

Discussion
Bias is inherent in classifications commonly used in dermatology. Morphological differences are important to recognise in those with skin of colour, and treatment needs to be carefully and individually crafted. Unique cultural consequences of a given diagnosis must also be considered when approaching the management of diverse populations.

AUSTRALIA is one of the most multicultural countries in the world.[1] In 2021, just over 7 million people in Australia were born overseas, representing 27.6% of the population.[2] India, China and the Philippines all ranked in the top five countries of birth in Australia. These groups, in addition to our First Nations people, have skin of colour (SOC).

SOC is a term that was coined in North America to describe a heterogeneous group of people that have pigmented skin types. It thus includes vastly diverse people from every continent around the globe, as well as those of mixed ethnicity.

This section of the population has challenged dermatologists because the first phase of modern dermatology was developed in continental Europe, Great Britain and the USA.[3] Clinical terminology, morphology and assessment tools, response to therapy and social needs in patients with dermatological issues were thus developed in reference to those with lightly pigmented skin. However, the foundational aspects of dermatology have been challenged by the healthcare needs of our richly diverse population.

Recent research demonstrates training and education in dermatology has followed this light skin-based model, with over 80% of Australian dermatologists revealing they would have liked more education and training in SOC during their postgraduate studies and the majority stating they are not entirely comfortable diagnosing and managing all skin conditions and cosmetic issues in those with pigmented skin types.[4]

SOC (pigmented skin) is biologically, functionally and structurally different to lightly pigmented skin. Thus, basic knowledge in SOC dermatology is essential if we wish to strive for clinical excellence and improved patient outcomes for all patients who seek care in Australia.

The aim of this paper is to present an overview of the salient issues in SOC dermatology by using single examples of how:

- bias is inherent in classifications commonly used in dermatology
- morphological differences are important to recognise in those with SOC
- treatment needs to be carefully and individually crafted
- unique cultural consequences of a given diagnosis need to be considered when approaching the management of diverse populations.

Bias in classifications: Fitzpatrick skin types

The current Fitzpatrick skin types (FST) classification divides sun reactivity in skin into six categories based on a person's self-reported ability to burn

and tan. The scale was initially created to classify skin photosensitivity for photochemotherapy for psoriasis and estimate skin cancer risk,[5] but is now incorrectly used to describe a person's skin colour.

Although this system is well known and easy to use, it was created for use in light-skinned populations. It does not account for those with pigmented skin who experience skin burning and peeling with ultraviolet light exposure. This might lead to an underestimation of the risk of burning and skin cancer development in this group.

Recently Dadzie et al[6] developed a five-point Eumelanin Human Skin Colour Scale as an alternative to the FST. This inclusive descriptive scale is objective and derived from technology-based melanin index values and uses language that is free of racial connotations. However, this scale provides no indication of function.

Skin pigmentation and photosensitivity need to be evaluated separately in order for any scale to be universally applicable. Thus, further research is needed to create culturally inclusive, objective skin phototype measurements and scales. The FST classification serves as an elegant example of how, due to the origins of dermatology, terminology and classifications have been developed in reference to White skin. It also illustrates how change is necessary if we are to better serve the global community.

Differences in pathophysiology and morphology: Atopic dermatitis

Many conditions affecting the skin, hair and nails present differently in White skin and SOC. To illustrate this point, we will explore atopic dermatitis (AD).

AD is a common chronic inflammatory skin condition that is commonly seen in general practice in Australia. It affects patients of all skin colours, but its morphology is often very different in those with SOC.

Although AD presents with erythematous, scaly plaques predominantly in flexural sites in those with light skin types, AD in SOC might appear papular or psoriasiform and is more likely to develop prurigo nodules along with postinflammatory hyperpigmentation.[7]

Recent research confirms the heterogeneity in phenotypic expression and underlying pathophysiology between different ethnicities.[8] It has even been suggested that AD might consist of a group of distinct diseases, with race as a differentiating factor.[9] Lesions that resemble psoriasis might also be seen and this is explained by variations in endotype that have recently been described in the literature in those with Asian (Chinese, Korean and Japanese) skin.[10] Secondary changes like mucosal lentigines, periorbital hyperpigmentation and dyspigmentation are also seen in those with pigmented skin types.

Patients with very dark skin display a more persistent disease course and an increased tendency to dry skin due to increased transepidermal water loss. This means those with SOC often have more severe xerosis associated with their AD.

It is also important to recognise that clinicians often underestimate the degree of inflammation in those with SOC because erythema is replaced by a grey-coloured appearance to the skin.[11] This grey colour is often mistaken for postinflammatory pigmentation or not recognised at all. This might result in misdiagnosis or an underestimation of the severity of AD in this cohort, resulting in poorer clinical outcomes for this group overall.

AD is one of many examples of dermatoses that have unique morphological features in SOC that might go unrecognised and untreated, which often results in poorer clinical outcomes and more numerous and severe secondary complications. Understanding the differences in morphology and presentation of such a common dermatosis in darker skin types is critical in providing an accurate diagnosis and appropriate treatment plan.

A unique treatment approach: Melasma

One size does not fit all when it comes to treating dermatological conditions. Those with pigmented skin often present unique therapeutic challenges, with increase skin sensitivity and reactivity to various topical therapies, chemical peels and laser and energy-based devices. Here, melasma is used to illustrate a simple but important unique treatment consideration in those with melasma who have darker skin types.

Facial hyperpigmentation is one of the most common skin issues seen in the SOC population.[12] Facial hyperpigmentation can be caused by over 45 conditions, but melasma (formerly also known as chloasma and mask of pregnancy) is one of the most common causes.

This acquired, chronic and relapsing cutaneous dyspigmentation presents with light to dark brown macules in the centrofacial region and is exacerbated by ultraviolet light exposure.[13] However, simply encouraging photoprotection is not enough to try halt the progression of the hyperpigmentation in those with SOC.

Research demonstrates sustained skin darkening occurs in those with darker skin types after exposure to visible light.[14] Protection against visible light with iron oxide-containing sunscreens is therefore one of the key components of melasma management in this group of patients. Without this critical aspect of care, many patients will note progression of their melasma over time.

Furthermore, although cosmetic camouflage of dark patches of skin with cover-up make-up might be acceptable for many with lighter skin types, those with darker skin will often find this solution impractical or culturally unacceptable.

Finally, skin-directed therapies such as chemical peels and lasers should be used with caution. In general, darker skin types possess increased epidermal melanin, larger and more widely distributed melanosomes and reactive fibroblasts,[15] significantly increasing the potential for adverse events including, but not limited to, scarring, hyper- and hypopigmentation and even depigmentation. Intimate knowledge of tissue interactions and nuances in SOC with such therapies is required to optimise efficacy while minimising the risk of side effects.

Unique treatment considerations in different skin types are critical for most skin conditions in those with SOC. Yet, published therapeutic ladders and treatment pathways rarely outline differences in treatment approaches in different ethnicities. Failing to tailor treatment to the individual's skin phototype and ethnicity therefore reduces treatment efficacy and risks unnecessary complications.

Importance of cultural context: Vitiligo

Vitiligo is a chronic, acquired, autoimmune condition that causes the destruction of melanocytes in the skin, causing depigmentation to develop on the skin.[16] Certain cultures have strongly held beliefs about the pathogenesis and transmissibility of the condition, and some mistake it for conditions like leprosy.[17] These beliefs have an impact on the patient's desire to seek care, treatment compliance and the overall flow and style of doctor–patient consultations.

In some cultural groups in India, for example, a diagnosis of vitiligo in one child might render all children in the family unworthy of marriage. This might lead to a lifetime of seclusion and a sense of family 'shame'.[18] Thus, it is not uncommon for an entire family to present to the clinician with the desire to learn about the condition and embark on treatment, irrespective of the logistic or financial challenges this might bring.

Practicing clinicians need to be aware of cultural implications of certain diagnoses and what these might mean for a patient, their entire family and communities, and try to broach these and support the patient's treatment journey. Involving allied health teams to assist with the psychosocial impact the diagnosis might have can be helpful for many patients. Some simple resources to assist patients living with vitiligo include directing them to authoritative websites and support networks, including the Global Vitiligo Foundation and the Vitiligo Association of Australia.

Our future

As clinicians in a richly multicultural society, we need to help develop terminology, classifications and objective outcome measures that are applicable to our diverse population. We need to learn about the personal and social implications of the diagnosis we make and explore these delicately and empathically during the consultation. We need to devise individualised treatment plans by taking time to understand biological differences in skin types and discuss our patient's beliefs, psychological wellbeing and expectations.

Some of these issues might be addressed by public health campaigns for those with SOC, improving diversity in medical research, encouraging medical training organisations and educational bodies to include cultural humility in formal curricula and in examinations and by engaging directly with communities to learn more about unique cultural considerations in the healthcare setting.

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