Differences and similarities in teledermatological primary care case histories between people with different skin tones

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Published in:
The British journal of dermatology

DOI:
10.1093/bjd/ljad164

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https://doi.org/10.1093/bjd/ljad164

Dear Editor, Skin of colour (SOC) dermatology is under-represented both in the training of general practitioners (GPs) in Western/European countries and in guidelines and textbooks,[1,2] which may result in people with SOC encountering disadvantages in their care (e.g. poor understanding and treatment of pigment or hair and scalp disorders).

In general, teleconsultation can support GP care provision and continuous training.[3] Dutch GPs have access to different platforms for teleconsultations with dermatologists. We studied the nationwide Prisma platform, available within the secure Siilo application (www.siilo.com). Cases posted between May 2019 and May 2020 were evaluated to identify differences, according to skin colour, in the questions asked by GPs and answers received from dermatologists. Details of this evaluation are published elsewhere.[4] In short, data were extracted from the platform and independently coded by four data processors in ATLAS.ti 8.4, before being merged for data analysis. Inter-rater reliability among coders was shaped by a preapproved coding table developed and refined by the data processors, during a test phase. Using case descriptions (i.e. explicit statement of origin different from Dutch/European) and supplied images, cases were categorized as patients with white skin (Fitzpatrick skin phototype classification types I, II or III) or with SOC (types IV–VI).[5]

We included 588 cases (49 patients with SOC). In patients with SOC, changes in skin colour were queried significantly more often [95% confidence interval (CI) 0.4–11.3], whereas local erythema was queried significantly less often (95% CI –10.1 to –0.4) and there were no questions related to naevi/birthmarks (95% CI –1.9 to –0.8; Table 1). All questions about naevi in patients with white skin concerned possible malignant degeneration.

For patients with SOC, 82 questions (mean 1.7 questions per case history) were asked vs. 1028 (mean 1.9) for those with white skin, with a higher percentage of questions focused on diagnosis and a lower percentage on medication and other topics in the SOC group. Response time was not statistically significantly lower for those with SOC (8 h 5 min) compared with those with white skin (11 h 56 min). GPs were advised to refer both skin types to secondary care a comparable number of times, but diagnostic tests were recommended significantly more often for those with white skin than for those with SOC. Advice given to patients with SOC was deemed unusable more often than for those with white skin (4.1% vs. 1.7%; not statistically

Table 1 Patient symptoms, types of question asked by general practitioners and responses received from dermatologists recorded on the Prisma platform, grouped by skin colour

ICPC code and description	Fitzpatrick skin type		Difference, % (95% CI)
	IV–VI (SOC)	I–III (white)	
S08 Other change(s) in skin colour	18 (12.3)	117 (6.5)	5.8 (0.4–11.3)
S02 Pruritis/itching	16 (11.0)	199 (11.0)	–0.1 (–5.4, 5.2)
S05 Multiple swellings/papules/nodules of skin/subcutis	15 (10.3)	107 (5.9)	4.3 (–0.7, 9.4)
S06 Local redness/erythema of skin	13 (8.9)	255 (14.2)	–5.2 (–10.1, –0.4)
S01 Pain/sensitivity of skin	10 (6.8)	124 (6.9)	0.0 (–4.3, 4.2)
S21 Dry skin/flaking or lichenification/induration	10 (6.8)	181 (10.0)	–3.2 (–7.5, 1.1)
S22 Symptoms/complaints nails	8 (5.5)	69 (3.8)	1.7 (–2.2, 5.5)
S04 Local swelling/papule/lump of skin/subcutis	6 (4.1)	85 (4.7)	–0.6 (–4.0, 2.8)
S07 Generalized skin redness/erythema	4 (2.7)	50 (2.8)	0.0 (–2.8, 2.7)
S11 Other local infection(s) skin/subcutis	3 (2.1)	12 (0.7)	1.4 (–0.9, 3.7)
S99 Other symptoms/complaints skin/subcutis	1 (0.7)	10 (0.6)	0.1 (–1.3, 1.5)
S17 Abrasion/scratch/blister	2 (1.4)	25 (1.4)	0.0 (–2.0, 1.9)
S23 Hair loss/alopecia	2 (1.4)	25 (1.4)	0.0 (–2.0, 1.9)
S82 Naevus/birthmark	0	24 (1.3)	–1.3 (–1.9, –0.8)
Type of question			
Diagnosis	38 (46.3)	394 (38.3)	8.0 (–3.2, 19.2)
Therapeutic	26 (31.7)	300 (29.2)	2.5 (–7.9, 13.0)
Medication	5 (6.1)	108 (10.5)	–4.4 (–9.9, 1.1)
Diagnostics	5 (6.1)	45 (4.4)	1.7 (–3.6, 7.1)
Referral	2 (2.4)	30 (2.9)	–0.5 (–4.0, 3.0)
Course	1 (1.2)	25 (2.4)	–1.2 (–3.8, 1.3)
Other[a]	5 (6.1)	126 (12.3)	–6.2 (–11.7, –0.6)
Response information			***P*-value**
Hours until first answer received, mean (SD)	8.1 (15.0)	12.0 (21.0)	0.206 [b]
Advice referral	9 (18.4)	119 (22.1)	0.547[c]
Advice diagnostics	9 (18.4)	175 (32.5)	0.042[c]
Advice unusable	2 (4.1)	9 (1.7)	0.231[d]
Additional/background information cited by dermatologist	9 (18.4)	79 (14.7)	0.486[c]

Results are provided as *n* (%) (in some cases, different questions of the same type were asked within one case history), unless otherwise stated. GPs asked questions related to 117 different ICPC codes 146 times for people with SOC and 1802 times for those with white skin. CI, confidence interval; ICPC, International Classification of Primary Care; SOC, skin of colour. [a]Other includes cases that could not be categorized by the other predefined questions. [b]Independent sample *t*-test; [c]χ^2 test; [d]Fisher's exact test.

significantly different). No significant differences were found in the additional information provided (9 times for those with SOC vs. 79 times for those with white skin).

Thirty users of the Prisma platform completed a survey sent on 30 July 2020. Their mean clinical experience was 12.5 years (range 1–30), and all reported having managed patients with SOC; however, only two reported having received training or education in a dermatological or GP postgraduate course where dermatology in SOC was discussed. Overall, 14 respondents (47%) reported low competence in recognizing and treating problems in patients with SOC (Likert score 1–2/5), and 27 (90%) expressed a need for more information on SOC in dermatology guidelines, specifically about differences in presentation and treatment of diseases in patients with SOC.

Our outcomes must be interpreted with caution as we included a limited number of patients with SOC and physicians in our survey. Applying the Fitzpatrick classification could also have led to imprecise categorization of skin colour because skin is on a continuum that cannot easily be dichotomized. However, using more subgroups – based on other classification methods – would also have limitations in this small sample. The use of International Classification of Primary Care coding also resulted in the application of noninclusive language.

GPs infrequently sought help for diseases in people with SOC with erythema. As erythema may be subtle in SOC, common skin disorders that largely rely on erythema for diagnosis can be missed or initially mistaken.[6] Explicitly reporting warmth as a marker of active inflammation is needed when using teledermatology.

Dermatology of SOC appears to be under-represented, but little is known about how this relates to Dutch general practice. Most existing research into healthcare inequalities concerning ethnicity has taken place in the USA,[7] a country with a different healthcare system, wealth–health gradient and demography.[8] In the Netherlands, studying the impact of ethnicity on care is limited by strict regulations that prohibit the registration of ethnic background or skin colour in routine care data and other (national) registries. As such, our small survey provides important information to guide Dutch practice, with 90% of participants recognizing the need for more information in dermatology guidelines.

Although we did not intend to study health inequalities or strategies to address them, we feel that our data provide relevant information that can be used for further research into understanding of the quality of care experienced by people with SOC.

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Funding sources: This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Conflicts of interest: The authors declare no conflicts of interest.

Data availability: The data underlying this article will be shared upon reasonable request to the corresponding author.

Ethics statement: Not applicable.

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