

Touch Avoidance and Emotional Impact in Adults with Chronic Hand Eczema: A Nationwide Cohort Study

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Chronic hand eczema (CHE) is a prevalent inflammatory skin disease that causes itching, stinging, burning sensation, and pain (1). CHE has a high disease burden and a negative impact on patients' quality of life (QoL) (2). Touch is the most fundamental aspect of human interaction that supports both verbal and tactile communication. Because of its important role in maintaining social bonds, touch avoidance, e.g., due to skin disease or disfigurement, may prevent people from benefiting fully from interaction with other people. Touch avoidance may impair psychosocial well-being and is associated with increased stress, loneliness, anxiety and depression (3, 4). The magnitude and impact of touch avoidance behaviour was not examined in patients with CHE.

MATERIALS AND METHODS

We included patients with active CHE within the past 12 months from the Danish Skin Cohort, a nationwide population-based prospective cohort (4). Patients were sent digital surveys including questions on demographics, clinical characteristics, and perception of having CHE. A validated photographic guide was used to evaluate CHE severity (5, 6). Patients reported the extent to which they had avoided touching other people within the past 7 days (e.g., handshakes) using a numeric rating scale (NRS, 0=no touch avoidance; 10=most touch avoidance), their feelings towards having CHE, and whether CHE impacted their social life using the Hand Eczema Impact Scale (HEIS) (7) and the Dermatology Life Quality Index (DLQI) (8). Patients' overall DLQI scores were grouped into no/small impairment (score: 0–5), moderate impairment (6–10), and severe impairment (11–30). The study was registered in the Capital Region's Inventory (Videncenter for Dataanmeldelse, ref. P-2021-386).

RESULTS

A total of 879 CHE patients were eligible for this study and 514 patients answered the questionnaire (response rate: 58.5%). The 514 included patients (mean age: 55.3 [standard deviation 12.6]) were predominantly women (66.9%) and included 113 (22.0%) who reported not currently having CHE and 384 (74.7%) with current CHE. Among individuals with current CHE, 226 (44.0%), 100 (19.5%), 41 (8.0%), and 17 (3.3%) classified their CHE as almost clear, moderate, severe, or very severe,

respectively; 279 (72.7%) reported CHE on both hands, 48 (12.5%) reported CHE only on their right hand, and 37 (9.6%) reported CHE only on their left hand. When asked about the specific location of their current CHE, 26.3% reported CHE on the dorsal hand(s), 38.5% on their palm(s), 49.2% on their finger(s), 38.3% between their fingers, and 7.6% on their wrist(s). Notably, 8.6% reported CHE on the entire hand. Of the 384 patients with current CHE, 356 (92.7%) answered the question on touch avoidance and 128 (36.0%) reported some level of touch avoidance (mean [SD]: 4.79 [3.1]); 77 (21.6%) reported touch avoidance scores between 1 and 5, and 51 (14.3%) reported touch avoidance scores between 6 and 10. When stratifying by CHE severity, 72 (50.4%) patients (median score [interquartile range]: 4 [0–7]) with moderate-to-very severe CHE reported some level of touch avoidance compared with 56 (26.3%) patients with almost clear CHE (0 [0–1]). In contrast, only 10 (9.9%) patients with no current CHE reported some level of touch avoidance (Table I). Overall, we observed a positive association between the level of touch avoidance and CHE severity and there was a significant difference in touch avoidance ($p < 0.0001$) between patients with almost clear CHE and patients with moderate-to-very severe CHE. Moreover, patients with CHE on both hands reported significantly higher touch avoidance scores ($p < 0.05$) compared with patients with CHE on only 1 hand. There was no difference in touch avoidance when stratifying by current CHE location, sex, age, or AD history.

Finally, 46.5% of patients with severe-to-very severe CHE reported feeling very much or extremely embarrassed by their CHE, 51.7% reported that they very much or extremely disliked the appearance of their hands, and 53.5% expressed that their hands made them feel very much or extremely frustrated. In contrast, 3.1%, 5.3%, and 1.3% of patients with almost clear CHE and 13.0%, 22.0%, and 17.0% of patients with moderate CHE reported similar levels of embarrassment, dislike, and frustration, respectively. Patients with moderate-to-very severe CHE were significantly more embarrassed and frustrated ($p < 0.0001$) by their CHE and disliked their hands' appearance significantly more ($p < 0.0001$) compared with patients with almost clear CHE. Overall,

Table I. Baseline demographics and characteristics of 514 patients with chronic hand eczema

Item	Overall (n = 514)	Almost clear CHE (n = 226)	Moderate to very severe CHE (n = 158)
Sex, n (%)			
Women	344 (66.9)	151 (66.8)	106 (67.1)
Men	170 (33.1)	75 (33.2)	52 (32.9)
Current age, mean (SD)	55.3 (12.6)	55.2 (12.6)	54.8 (12.8)
Age at CHE onset, mean (SD)			
≤ 5 years	32 (6.2)	14 (6.2)	8 (5.1)
6–18 years	78 (15.2)	42 (18.6)	19 (12.0)
≥ 19 years	399 (77.6)	168 (74.3)	130 (82.3)
History of atopic dermatitis, n (%)	165 (32.1)	75 (33.2)	51 (32.3)
Smoking status, n (%)			
Daily	65 (12.6)	26 (11.5)	26 (16.5)
Occasional smoker	21 (4.1)	9 (4.0)	5 (3.2)
Former smoker	230 (44.7)	98 (43.4)	72 (45.6)
Never smoked	193 (37.5)	92 (40.7)	53 (33.5)
Current CHE, n (%)			
Yes	384 (74.7)	226 (100.0)	158 (100.0)
No	113 (22.0)	–	–
Unknown/missing	17 (3.3)	–	–
CHE severity, n (%)			
Clear	113 (22.0)	–	–
Almost clear	226 (44.0)	226 (100.0)	–
Moderate	100 (19.5)	–	100 (63.3)
Severe	41 (8.0)	–	41 (25.9)
Very severe	17 (3.3)	–	17 (10.8)
Unknown/missing	17 (3.3)	–	–
Location of current CHE, n (%) ^a			
Only right hand	48 (12.5)	36 (15.9)	12 (7.6)
Only left hand	37 (9.6)	28 (12.4)	9 (5.7)
Both hands	279 (72.7)	150 (66.4)	129 (81.6)
Anatomical location of current CHE, n (%) ^a			
Dorsal	101 (26.3)	62 (27.4)	39 (24.7)
Palmar	148 (38.5)	80 (35.4)	68 (43.0)
Fingers	189 (49.2)	115 (50.9)	74 (46.8)
Between fingers	147 (38.3)	92 (40.7)	55 (34.8)
Wrist	29 (7.6)	14 (6.2)	15 (9.5)
Entire hand(s)	33 (8.6)	9 (4.0)	24 (15.2)
Touch avoidance			
Touch avoidance, n (%)	138 (30.1) ^b	56 (26.3) ^c	72 (50.4) ^d
No touch avoidance [score 0], n (%)	320 (70.9) ^b	157 (73.7) ^c	71 (49.6) ^d
Touch avoidance [score 1–5], n (%)	86 (18.8) ^b	46 (21.6) ^c	31 (21.7) ^d
Touch avoidance [score 6–10], n (%)	52 (11.3) ^b	10 (4.7) ^c	41 (28.7) ^d
Touch avoidance, median (IQR)	0 (0–1) ^b	0 (0–1) ^c	4 (0–7) ^d
DLQI, mean (SD)	3.69 (3.6) ^e	2.94 (2.4) ^f	6.23 (4.4) ^g
No/small impairment (0–5)	244 (47.5)	136 (60.2)	44 (27.8)
Moderate impairment (6–10)	51 (9.9)	16 (7.1)	29 (18.4)
Severe impairment (11–30)	23 (4.5)	3 (1.3)	18 (11.4)
DLQI, median (IQR)	3 (1–5) ^e	2 (1–4) ^f	6 (3–8) ^g

^aBased on 384 patients with current CHE. ^bBased on 458/514 patients with CHE who were given the questionnaire on touch avoidance and answered it. ^cBased on 213/226 patients with almost clear CHE who were given the questionnaire on touch avoidance and answered it. ^dBased on 143/158 patients with moderate to very severe CHE who were given the questionnaire on touch avoidance and answered it. ^eBased on 318/514 patients with CHE who were given the Dermatology Life Quality Index (DLQI) and answered the questionnaire. ^fBased on 155/226 patients with almost clear CHE who were given the Dermatology Life Quality Index (DLQI) and answered the questionnaire. ^gBased on 91/158 patients with moderate-to-severe CHE who were given the Dermatology Life Quality Index (DLQI) and answered the questionnaire. CHE: chronic hand eczema; DLQI: Dermatology Life Quality Index; IQR: interquartile range; SD: standard deviation.

patients with moderate-to-severe CHE tended to have more severe QoL impairment compared with patients with almost clear CHE when assessed with DLQI (see Table I).

DISCUSSION

We found that touch avoidance is reported by one-third of patients with CHE in a severity-dependent manner.

Patients with bilateral CHE were significantly more likely to avoid touch compared with patients with unilateral CHE. Patients suffering from touch avoidance may be face challenges with work, daily activities, intimate relationships, and social isolation. Altogether, this indicates that CHE patients may struggle with forming and maintaining manual contact and, thus, be at higher risk of social stigmatization. Interestingly, we found no significant differences in touch avoidance based on CHE location despite the majority of the general population being right-handed. However, patients were not asked if they were right- or left-handed, which could have provided further insight into functional and social aspects of touch avoidance. Similarly, data on occupation were not available, although work-related exposures and professional requirements likely influence both disease burden and social interaction. We found no difference in touch avoidance when stratifying by sex or age, despite the expectation that women and younger patients might be more self-conscious about the appearance of their hands, considering they devote more time for beauty procedures, such as manicures, and therefore would have a lower threshold of touch avoidance. Finally, CHE has been associated with depression and anxiety in multiple studies (9), which correlates positively with CHE severity (10). Patients experienced emotional distress because of their CHE and there was a noticeable impact of CHE severity on touch avoidance. This emphasizes the negative impact of CHE on patients' emotional and social well-being.

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REFERENCES

1. Thyssen JP, Johansen JD, Linneberg A, Menné T. The epidemiology of hand eczema in the general population: prevalence and main findings. *Contact Dermatitis* 2010; 62: 75–87. <https://doi.org/10.1111/j.1600-0536.2009.01669.x>
2. Agner T, Andersen KE, Brandao FM, Bruynzeel DP, Bruze M, Frosch P, et al. Hand eczema severity and quality of life: a cross-sectional, multicentre study of hand eczema patients. *Contact Dermatitis* 2008; 59: 43–47. <https://doi.org/10.1111/j.1600-0536.2008.01362.x>
3. Von Mohr M, Kirsch LP, Fotopoulou A. The soothing function of touch: affective touch reduces feelings of social exclusion. *Sci Rep* 2017; 7: 13516. <https://doi.org/10.1038/s41598-017-13355-7>
4. Ujitoko Y, Yokosaka T, Ban Y, Ho HN. Tracking changes in touch desire and touch avoidance before and after the COVID-19 outbreak. *Front Psychol* 2022; 13: 1016909. <https://doi.org/10.3389/fpsyg.2022.1016909>
5. Coenraads PJ, Van Der Walle H, Thestrup-Pedersen K, Ruzicka T, Dreno B, De La Loge C, et al. Construction and validation of a photographic guide for assessing severity of chronic hand dermatitis. *Br J Dermatol* 2005; 152: 296–301. <https://doi.org/10.1111/j.1365-2133.2004.06270.x>
6. Hald M, Veien NK, Laurberg G, Johansen JD. Severity of hand eczema assessed by patients and dermatologist using a photographic guide. *Br J Dermatol* 2007; 156: 77–80. <https://doi.org/10.1111/j.1365-2133.2006.07565.x>
7. Weissshaar E, Yüksel YT, Agner T, Larsen LS, Grant L, Arbuckle R, et al. Development and validation of a patient-reported outcome measure of the impact of chronic hand eczema on health-related quality of life: the Hand Eczema Impact Scale (HEIS). *Dermatol Ther (Heidelb)* 2024; 14: 3047–3070. <https://doi.org/10.1007/s13555-024-01267-0>
8. Finlay AY, Khan GK. Dermatology Life Quality Index (DLQI): a simple practical measure for routine clinical use. *Clin Exp Dermatol* 1994; 19: 210–216. <https://doi.org/10.1111/j.1365-2230.1994.tb01167.x>
9. Siewertsen M, Näslund-Koch C, Duus Johansen J, Simonsen AB, Nguyen TT, Zachariae C, et al. Psychological burden, anxiety, depression and quality of life in patients with hand eczema: a systematic review and meta-analysis. *J Eur Acad Dermatol Venereol* 2024; 38: 2049–2050. <https://doi.org/10.1111/jdv.20140>
10. Zalewski A, Krajewski PK, Szepietowski JC. Psychosocial consequences of hand eczema: a prospective cross-sectional study. *J Clin Med* 2023; 12: 5741. <https://doi.org/10.3390/jcm12175741>