The impact of Chronic Hand Eczema on occupation, work productivity, and activity impairment – Results from the CHECK study in the United States

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Conclusions

- A significant proportion of individuals with Chronic hand eczema (CHE) relate their skin disease to their occupation and/or household/leisure activities. Many reported changing their occupation and/or daily activities to reduce exposures that may trigger CHE.
- Participants with moderate to severe CHE reported a substantial negative impact on activity and productivity, as indicated by Work Productivity and Activity Impairment (WPAI) scores, with the overall work impairment score combining work time missed and CHE impact while working. Participants with mild CHE had significantly lower overall work and activity impairment scores.
- This research highlights the significant burden of the disease on both work productivity and daily activities, underlining the importance of effective management strategies to help reduce the broader impact of the disease.

Objectives

- To investigate the impact of CHE on occupation and household/leisure activities, work productivity, and activity impairment in the United States (US).

Synopsis (Background)

- Hand eczema (HE) is the most frequent occupational skin disease[1]. It is associated with a high socioeconomic burden, due to the high costs related to sick leave, loss in productivity, and loss of employment.[2]
- CHE is HE that lasts ≥ 3 months and/or returns at least 2 times a year.[3,4] It is a burdensome dermatological disease with significant impact on quality of life and is composed of several subtypes.
- CHE may be caused or exacerbated by exposure to irritants and contact allergens encountered in daily activities, such as occupations involving wet work, chemicals, domestic work, or looking after children.
- A better understanding of the impact of CHE on occupation and household/leisure activities in the US is essential to identify at-risk populations, characterize relevant exposures, and inform strategies for prevention and management.
- A similar study was conducted in Canada, France, Germany, Italy, Spain and the United Kingdom (UK).[5]

Methods

- CHECK-US (Chronic Hand Eczema epidemiology, Care, and Knowledge of real-life burden in the US) was an online cross-sectional survey conducted among 10,636 adult participants of the general population in the US.
- Adults aged 18 to 69 years old were recruited from online panels. Quotas and weighting were applied to sex, age, state of residence, employment status, urban/rural setting, and race to ensure participants' representativeness.[6]
- Participants with self-reported CHE were asked to complete a questionnaire about key disease aspects. Those who reported a physician diagnosis were identified as participants with a physician-diagnosed CHE
- The questionnaire also surveyed the impact of CHE on daily living which included the validated WPAI instrument.[7]
- A previously published and validated photographic guide was used by participants to self-assess their CHE severity in the past week. The categories "Clear" and "Almost clear" were classified as "Mild". The categories "Moderate", "Severe" and "Very Severe" were classified as "Moderate to severe".[8]
- Data were analyzed descriptively, means with standard deviation (SD) are reported for continuous variables, and frequencies (n) and percentages for categorical variables.

Abbreviations CHE=Chronic hand eczema; SD=standard deviation; WPAI=work productivity and activity impairment.

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Results

Sociodemographic and clinical characteristics of participants with self-reported physician-diagnosed CHE

- The study population consisted of **982 individuals who self-reported a physician-diagnosis of CHE** and completed the full questionnaire. Among them, 54.4% (n=534) were males with a mean (SD) age of 37.1 (12.4) years and mean (SD) age at first diagnosis of 24.7 (13.8) years (**Table 1**).
- The majority of participants who self-reported a physician-diagnosis of CHE were employed at the time of the survey (76.4%, n=750) and 79.3%, (n=779) were employed in the year before the survey.

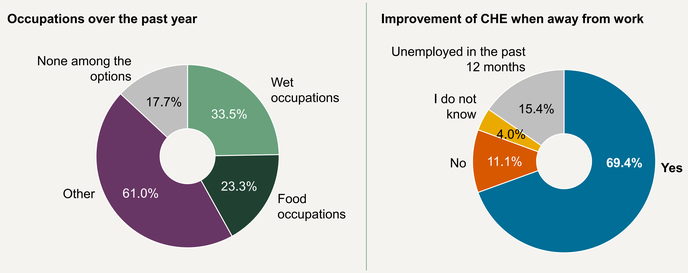
Table 1 Participants who self-reported a physician-diagnosis of CHE (N=982)

Sex, n (%)		Age **at the time of the survey**		Employment status **at the time of the survey, n (%)**	
Male	**534 (54.4%)**	Mean (SD)	**37.1 (12.4)**	Employed	**750 (76.4%)**
Female	**448 (45.6%)**			Unemployed	**232 (23.6%)**
Time between first signs/symptoms and diagnosis		**Age at first diagnosis**		**Employment status in the year before the survey, n (%)**	
N	**941**	N	**941**	Employed	**779 (79.3%)**
Mean (SD), years	**2.3 (6.0)**	Mean (SD)	**24.7 (13.8)**	Unemployed	**203 (20.7%)**
I do not know	**41 (4.1)**	I do not know	**41 (4.1%)**		

Impact of CHE on work productivity and activity impairment

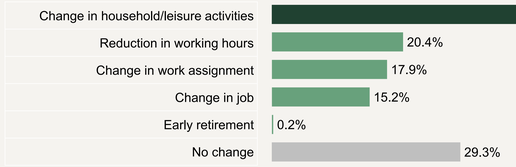
- Among the 982 participants with physician-diagnosed CHE, 27.9% (n=274) attributed their disease to their occupation, and more than a third (34.9%) to their household/leisure activities.
- Among those who attributed their disease to their occupation (n=274), 33.5% (n=92) reported an occupation classified as a "wet occupation" (i.e., that involves frequent or prolonged exposure of hands/wrists to water) and 23.3% (n=64) an occupation classified as a "food occupation" (e.g. bakers, butchers, kitchen workers, etc.) (**Figure 1**).
- 69.4% (n=190) reported improvement in their CHE when away from work.

Figure 1 Occupations among individuals who attributed CHE to their occupation and improvement of CHE when away from work (n=274)



Physician-diagnosed CHE participants for whom CHE is related to occupation or household/leisure activities

- Among participants who reported that their CHE was related to either their occupation or daily activities (n=425), 43.6% (n=185) had to change their household or leisure activities, 20.4% (n=86) had to reduce their working hours, 17.9% (n=76) changed their work assignment, 15.2% (n=64) changed their job, and one participant took early retirement (**Figure 2**).



Work and activity impairment scores depending on severity

- Among the currently working participants who completed the WPAI questionnaire (n=611), the absenteeism score, reflecting the proportion of work hours missed due to CHE, was 13.2% (22.8%) and the presenteeism score, reflecting the degree of impairment while working, was 37.4% (34.3%). The mean (SD) overall work impairment was 41.0% (36.5%) (**Figure 3A**).
- Among all 982 participants, the mean (SD) activity impairment was 42.7% (33.7%) indicating that CHE has a substantial impact on their activity (**Figure 3B**).
- Among participants currently working, those with moderate to severe CHE reported greater overall work impairment compared to those with mild CHE (45.8% (35.1%) vs. 32.0% (37.4%); p<0.001).
- A similar trend was observed for activity impairment among all participants with physician-diagnosed CHE (n=982), with the moderate to severe group reporting a higher mean score than the mild group (48.6% (32.1%) vs. 31.8% (33.9%); p<0.001).

Figure 3A Among working physician-diagnosed CHE participants

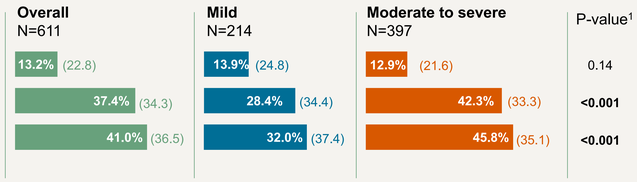


Figure 3B Among all physician-diagnosed CHE participants

The severity was assessed using a photographic guide.
[1]Wilcoxon rank-sum test for complex survey samples.

One limitation of this study is that CHE prevalence estimates are based on patient-reported data.

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