

Prevalence and risk factors for work-related skin symptoms among seaweed workers in Tanzania

P1-H1

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Seaweed workers are exposed to various irritants and allergens, significantly increasing their risk of work-related skin symptoms, contact dermatitis and skin irritation

BACKGROUND

- Aquaculture workers are susceptible to various skin conditions due to occupational exposure to irritants, sensitizers and infective agents.
- However, research on work-related skin symptoms (WRSS) and dermatoses among seaweed workers is lacking.

METHODS

- A cross-sectional study of 602 Zanzibari seaweed workers was conducted using an interviewer-administered Nordic Occupational Skin Questionnaire (NOSQ).
- Digital photographs of the face, hands and feet were taken of participants that provided consent (n=501).
- Two occupational medicine specialists independently assessed the photographs to identify the presence of clinical skin disease.
- Risk factors were identified using multivariate statistical models adjusted for age and gender.



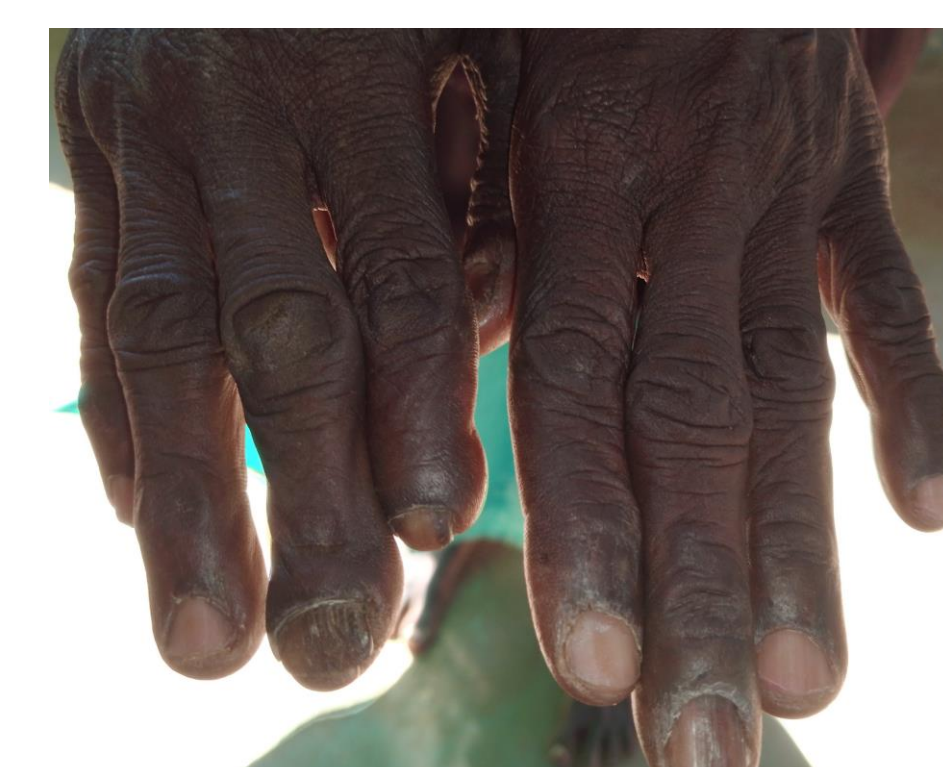
Seaweed farming



Seaweed processing with seaweed powder, oils, sodium hydroxide and fragrances



Well-demarcated erythematous patch with overlying scaling



Dysmorphic nails, loss of cuticle, nailfold swelling, dry skin, increased skin markings



Dry scaly skin

Table 1. Significant occupational risk factors of work-related skin symptoms and clinical skin disease among Tanzanian seaweed workers using multivariate logistic regression models

Outcome	Predictor	Prevalence Odds Ratio (95% CI)
Probable contact dermatitis	Sodium hydroxide exposure	2.19 (1.04-4.59)
	OHS training	0.33 (0.15-0.76)
Work-related skin symptoms	Employment duration	1.03 (1.01-1.05)
	Seaweed farming*	2.62 (1.21-5.64)
	Processing duration (hrs)	0.81 (0.66-0.99)
	Performing wet work	7.38 (1.94-57.79)
	Sodium hydroxide exposure	3.97 (1.55-10.19)
	Skin disinfectant use	3.30 (1.28-8.56)
Wet work-related skin sequelae	OHS training	0.26 (0.10-0.67)
	Seaweed farming*	1.98 (1.14-3.44)
	Farming duration (hrs)	1.14 (1.01-1.28)
	Processing duration (hrs)	0.86 (0.74-0.99)
Clinical evidence of skin irritation	Engaging in wet work	3.60 (1.01-13.01)
	Seaweed farming*	2.45 (1.03-5.84)
	Processing duration (hrs)	0.76 (0.63-0.92)
	Sodium hydroxide exposure	2.64 (1.10-6.32)
	Skin disinfectant use	2.65 (1.05-6.64)

*Seaweed farming vs processing
OHS – Occupational Health and Safety

RESULTS

- The study population was 91% female, with a mean age of 50 years and an average employment duration of 20 years.
- Probable contact dermatitis was reported by 27% of workers in the past year and 25% reported work-related skin symptoms (WRSS).
- Key WRSS risk factors included longer employment duration ($OR_{adj}=1.03$), seaweed farming vs processing ($OR_{adj}=2.62$), performing wet work ($OR_{adj}=7.38$), sodium hydroxide exposure ($OR_{adj}=3.97$), and use of skin disinfectants ($OR_{adj}=3.30$) (**Table 1**).
- Common clinical findings were skin dryness (88%), increased skin markings (70%) and paronychia (43%).
- Wet work-related skin sequelae was associated with seaweed farming ($OR_{adj}=1.98$), and engaging in wet work activities ($OR_{adj}=3.60$).
- Skin irritation was associated with seaweed farming ($OR_{adj}=2.45$), exposure to sodium hydroxide ($OR_{adj}=2.64$), and disinfectant use ($OR_{adj}=2.65$).
- Seaweed processing and health and safety training were protective against the presence of WRSS and wet work-related skin sequelae.

CONCLUSIONS

- Seaweed farming as opposed to processing is associated with a high prevalence of skin symptoms and evidence of clinical skin disease among seaweed workers - due to long hours of wet work.
- This highlights the importance of promoting and implementing skin protective measures, including comprehensive health and safety training, to mitigate occupational health risks in this sector.