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Original Research Article

A study of clinical patterns of cutaneous manifestations among hotel workers in costal Karnataka

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ABSTRACT

Background: Catering personnel and other workers exposed to foods may develop both type I and type IV allergic contact dermatitis to foods including spices. Cutaneous manifestations vary according to the place that a worker is employed. Studies on the cutaneous manifestations among restaurant and dhaba workers in India are scarce. This study was conducted to determine clinical patterns of cutaneous manifestations among hotel workers in costal Karnataka.
Methods: The present cross-sectional study was carried out among workers of hotels situated in costal Karnataka. Study was conducted through Department of Dermatology, A. J. Institute of Medical Sciences, Mangalore. Consecutive type of non-probability sampling was used for selection of study subjects. A total of 1083 hotel workers from 53 randomly selected hotels, fulfilling eligibility criteria, were included in the study.
Results: The prevalence of dermatological manifestations was observed as 34.2% (370/1083) in hotel workers. Prevalence of fungal and bacterial infections was 51.4% and 17.6% respectively. Scabies was found in 6.8% subjects while oral manifestation and nail changes were observed in 3.8% and 2.2% subjects.
Conclusion: High prevalence of dermatological manifestations was present in hotel workers especially infective skin conditions like Tinea cruris and scabies. This is important, as they can be a potential source for spread of the infection. There is lot of scope for improving the standards of personal hygiene of hotel workers. Owners of establishments should be made aware of importance of pre-placement and periodical medical examination in order to protect the health of consumer.

Keywords: Hotel workers, Cutaneous manifestations, Coastal region

INTRODUCTION

Wide-scale urbanization has affected dietary habits and pattern in individuals. Dining in restaurants on weekends and other holidays, with family members and friends, has become a very popular concept in urban India. To meet the ever-increasing demand for new cuisines, the catering industry in India is becoming more prominent day by day. A significant increase in tourism has also resulted in the growth of catering industry. Industry can be classified in various ways, based on location, size of property, level of service, length of stay, theme, target market, etc. Restaurants can range in size from a small local diner to a

large hotel restaurant. According to a recent estimate, more than two million restaurants are now dominating the present scenario of Indian catering industry. Such a large number of restaurants employ a considerable proportion of population.[1]

Health hazards vary according to the place that a worker is employed in any restaurant. The hazards among kitchen staff include several different types of accidents such as burns from deep fryers, slipping on grease and cuts from knives, whereas musculoskeletal disorders are more common among waiters and helpers who usually bear load.[2] Apart from these, hotel and restaurant workers are also exposed to harmful effects of environmental tobacco smoke generated from customers who smoke.1 Catering personnel and other workers exposed to foods may develop both type I and type IV allergic contact dermatitis to foods including spices.[3,4]

Though studies have been carried out among workers in large hotels in other countries, data on the cutaneous manifestations among restaurant and dhaba workers in India is scarce.[5] Thus, fortified by this fact the present study has been carried out with the objective to determine the clinical patterns of Cutaneous manifestations among hotel workers.

METHODS

Study was conducted among workers of hotels situated in costal Karnataka, through Department of Dermatology, A. J. Institute of Medical Sciences, Mangalore after taking institutional ethical clearance. The study duration was from January to December 2014.

Inclusion criteria

Inclusion criteria was as followed: employed in the same job for 1 year or more, age >14 years and those who give informed consent to participate in the study.

Exclusion criteria

Exclusion criteria was as followed: suffering from any pre-employment chronic skin condition, duration of employment less than 1 year.

Study design

The study was cross-sectional.

Sampling technique and sample size

Consecutive type of non-probability sampling was used for selection of study subjects. A total of 1083 hotel workers from 53 randomly selected hotels were included in the study.

Methodology

Pre-formed, pre-tested, semi-structured Interview schedule was used for data collection. The information regarding demographic, occupational and clinical characteristics were recorded for every employee. This was followed by a complete medical examination of all the subjects. Subjects who required medical attention were referred to the appropriate departments of parent hospital.

Statistical analysis

Data collected was entered in Microsoft excel sheet and analyzed using to Statistical package for the social sciences (SPSS) software version 17. Descriptive statistics such as proportions and frequency were estimated.

RESULTS

A total of 53 hotels were visited during the study period and 1083 hotel workers were evaluated. The prevalence of dermatological manifestations was observed as 34.2% (370/1083) in hotel workers. Detailed evaluation of these 370 workers was done.

Table 1: General profile of the subjects of the study.

Variables		Frequency (n=370)	Percentage (%)
Age group (in years)	<24	101	27.3
	25-34	128	34.6
	35-44	87	23.5
	≥45	54	14.6
Marital Status	Married	190	51.4
	Unmarried	180	48.6
Residence	Local	167	45.1
	Migrant	203	54.9
Nature of work	Chef	75	20.3
	Helper	152	41.1
	Waiter	143	38.6
Daily working hours	<8	123	33.2
	8 to 10	179	48.4
	>10	68	18.4

Mean age of hotel workers was 28.17 years with maximum number of workers below 35 years of age (61.9%). Majority of workers were married (51.4%). About 55% of the workers were migrants while remaining 45% were local residents. Out of total 370 workers, 20.3% were chefs, 41.1% were helpers and 38.6% were waiters. Most of the workers were on 8 hours of shift per day while 18.4% were working for more than 10 hours.

Itching was the most common complaint (82.4%) followed by redness (49.5%), whitish patches, pus discharge (3%) and nail changes (2.7%). About one third of the subjects were having complaints since last 7 days, while majority of them had such complaints since 1-6 weeks (49.2%).

Three subjects (0.8%) were suffering from dermatological manifestations from over a year.

Table 2: Clinical profile of subjects in the study.

		Frequency	%
Chief complaints	Itching	305	82.4
	Redness	183	49.5
	Pus discharge	11	3.0
	White/ black patch	28	7.6
	Nail changes	10	2.7
	Burn injuries	0	0
Duration of complaint	≥1 week	140	37.8
	1-6 weeks	182	49.2
	6 weeks to 6 months	45	12.2
	>6 months	3	0.8
Contact history	Soaps/ detergents	148	40.0
	Spices	55	14.9
	Prolonged exposure to wet/ damp cloths	256	69.2
	Overcrowding	186	50.3
Dermato-logical diagnosis	Tinea corporis	49	13.2
	Tinea cruris	54	14.6
	Tinea mannum/ Pedis	20	5.4
	Candidial intertrigo	39	10.5
	Pitted keratolysis	49	13.2
	P. versicolor	28	7.6
	Seborrhoeic dermatitis	24	6.5
	Pyoderma	15	4.1
	Cellulitis	1	0.3
	Scabies	25	6.8
	Papular urticaria	16	4.3
	Contact dermatitis	36	9.7
	None	14	3.8

Prolonged exposure to wet cloths was observed in over two third of the subjects, while history of contact to soaps/ detergents was given by 40%. Contact with spices was given by 14.9% subjects while history of overcrowded work environment was given by 50% subjects.

Prevalence of fungal infections was about 51.4% (Tinea - 33.2%; Candida-10.5%; P. Versicolor-7.6%) and bacterial infection was 17.6% (Pitted keratolysis-13.2%, Pyoderma-4.1%, Cellulitis-0.3%). Dermatitis was observed in 16.2% subjects while urticaria was observed in 4.3%. Scabies was found in 6.8% subjects.

Table 3: Co-morbidities and laboratory diagnosis among subjects in the study.

Variables		Frequency	%
Oral manifestation	Glossitis	1	0.3
	Candidiasis	4	1.1
	Apthous ulcers	9	2.4
	None	356	96.2 %
Nail changes	Onychomycosis	5	1.4
	Paronychia	3	0.8
	None	365	98.6 %
Concurrent illness	DM	33	8.9
	HTN	51	13.8 %
	TB	1	0.3
	Obesity	10	2.7
	None	306	82.7 %
Laboratory Investigation	Skin biopsy	16	4.3
	KOH mount	194	52.4 %
	Pus culture	16	4.3
	AEC	7	1.9
	Patch test	20	5.4

Oral manifestation was observed in 3.8% subjects (14 subjects) of which apthous ulcers were present in 9 patients, candidiasis in 4 and glossitis in 1 patient.

Nail changes were observed in 2.2% subjects (8 subjects) of which onychomycosis was present in 5 patients and paronychia in 3 patients. Co-morbidities such as diabetes mellitus (DM), hypertension (HTN), tuberculosis (TB) and obesity was observed in 8.9%, 13.8%, 0.3% and 2.7% respectively.

DISCUSSION

The present cross-sectional study was carried out among workers of hotels situated in costal Karnataka with the aim of studying the clinical patterns of cutaneous manifestations among hotel workers. A total of 1083 hotel workers from 53 randomly selected hotels were included in the study. Mean age of hotel workers was 28.17 years with maximum number of workers were below 35 years of age (61.9%). In present study we found no female employee. Approximately 5% workers were below 14 years of age.

Kokane S et al conducted a cross-sectional study included 127 workers from 15 restaurants and dhabas situated at Pune-Mumbai highway.[1] In all there were 121 (95.3%) males and only 6 (4.7%) females. Majority of the subjects were in age group <24 years, which included 61 (48.8%)

of the subjects. The mean age of the male subjects was 27.7+11.0 years while that for females was 37.5+5.24 years. The overall mean age of the study subjects was found to be 28.23±11.01 years. Anant A et al studied 83 food handlers in various canteens and messes that come under Dr. V. M. Government Medical College and Hospital, Solapur city during year 2005.[6] Maximum numbers of food handlers 45.8% were from 15 to 35 years age group followed by middle age group (25.3%) i.e.36-45 years. Chitnis et al, Kale et al, and Sangole et al stated that majority of population in their study were from 15 to 35 years age group.[7-9]

Prevalence of child labour in our study was 5.0%. In India, according to Factory Act (1948), section 172 of Bombay Factories Rules (1950) prohibits employment of young person below 14 years of age. In spite of various acts/rules, prohibiting employment of child labour; they are still being exploited in many countries including India and are frequently to be found in eating establishments. Anant et al in their study found the prevalence of child labor as 6.0%.[6]

In the present study, majority of workers were on 8 hours of shift per day while 18.4% were working for more than 10 hours. Out of total 370 workers, 20.3% were chefs, 41.1% were helpers and 38.6% were waiters.

Similar results were also observed by Kokane et al where most of the workers were working for 8-9 hours per day and the mean daily working hours was found to be 10.64+1.72 hours.[1] Most of the workers (45.7%) were working as waiter while 44 (34.6%) workers were working as cook in the hotel kitchen. Only 25 (19.7%) were helping the waiters or cooks in their work.

The prevalence of dermatological manifestations in the present study was 34.2% (370/1083) in hotel workers. Itching was the most common complaint (82.4%) followed by redness (49.5%), whitish patches, pus discharge (3%) and nail changes (2.7%). Prevalence of fungal infections was highest i.e., about 51% (Tinea- 33.2%; Candida-10.5%; P. Versicolor- 7.6%) followed by that of bacterial infection 17.6% (Pitted keratolysis 13.2%, pyoderma-4.1%, cellulitis- 0.3%).

Kokane et al reported skin related symptoms like itching and discoloration in 12 (9.4%) subjects.[1] Skin manifestations in about 17% of workers (21/121) with 8 cases of Tinea (6.3%) while 7 (5.5%) and 4 (3.1%) were diagnosed as having scabies and allergic dermatitis. In present study dermatitis was observed in 16.2% subjects while scabies was found in 6.8% subjects.

Biswas et al studied 105 workers of 29 roadside restaurants along a highway in Assam.[5] They found that superficial skin infection (ringworm/ scabies/ fungal skin or infection between finger/ toe or in nail) was the most common skin manifestation (36.2%) followed by genital ulcers (25.2%). In present study nail changes were observed in 2.2% subjects (8 subjects) of which onychomycosis was present in 5 patients and paronychia in 3 patients.

In a study by Anant et al prevalence of fungal infection was 24.1%, dermatitis 20.4% and scabies 9.6%.[6] Mudey et al observed same prevalence of scabies (9.25%) amongst food handlers in their study from Maharashtra.[10] Pawar carried out health survey of hotel workers in Pune and observed that prevalence of fungal infection is most common (15.1%).[11]

Oral manifestation was observed in 14 subjects (3.8%) of which apthous ulcer was most common (9 patients). This shows increased prevalence of nutritional deficiencies among hotel workers.

Skin diseases are direct reflection of lack of personal hygiene. Since majority of workers in our study were migrants with lower socioeconomic status, there was gross negligence regarding minor skin ailments. Also, they were afraid of losing the job if found by hotel owner, and so use to hide it. Poor personal hygiene also leads to skin infestation by mites, as evident by the high prevalence of scabies in study population (6.8%). This is important, as they can be a potential source for spread of the infection. The high prevalence of allergic dermatitis (9.7%) can be attributed to handling of spices.

CONCLUSION

It can be concluded that prevalence of dermatological manifestations was observed in over a third of hotel workers with high prevalence of fungal and bacterial infections. Skin infestation by scabies was also encountered frequently. Hotel workers can be a potential source for spread of infection to others. There is lot of scope for improving the standards of personal hygiene of hotel workers. Owners of establishments should be made aware of importance of pre-placement and periodical medical examination in order to protect the health of consumer.

Limitations of the study

Limitations of the study include lack of control group, due to which we cannot establish the association of duration and hours of work with dermatological manifestations. Since this is a cross sectional study, we are not following up patients, so the effect of health education regarding health and hygiene practices in terms of decrease in prevalence of skin manifestations could not be ascertained. So, we recommend a longitudinal study with large sample size to further validate study findings and do away with study limitations.

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