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Original Research Article

Study on knowledge, attitude and behaviour of patient towards dermatophytosis and importance of maintaining personal hygiene

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ABSTRACT

Background: Dermatophytosis is considered as a silent epidemic with a global prevalence of 25%. In India, it has been reported in various studies with high prevalence of 27% and it is important to find the modifiable contributing factors for dermatophytosis, so as to prevent the high morbidity affecting the social and occupational health.
Methods: A total of 100 patients participated in this cross-sectional study conducted in dermatology outpatient department (OPD) at tertiary care hospital. After obtaining informed written consent, all patients above 18 years of age diagnosed with superficial fungal Skin infections were subjected to pretested, semi-structured questionnaire to collect data regarding the knowledge, attitude and practices towards the dermatophytosis.
Results: Out of 100 patients in this study, 45% of patients has knowledge about the spread of fungal infection from person to person and 55% patients not agreeing with it. The study also revealed that 84% of patients reported correctly about the association of sweating with sweat feeling index (SFI) and 76% of patients know about the possible sites of dermatophyte infection. 91% and 96% of patients had no knowledge about the spread of infection through sharing clothes and collective washing clothes of other family members.
Conclusions: Despite the patients demonstrating good knowledge about mode of spread of dermatophytosis, still most of the patients are failed to implement the knowledge in maintaining personal hygiene practices. There is a need to improve the gap between the knowledge about the dermatophytosis and their personal hygiene practices towards the infection. It is important to communicate with the patient about the treatment of other family members and changing their attitude towards the infection. This approach will help to improve the adherence of treatment and also prevents the recurrence of dermatophytosis.

Keywords: Superficial fungal infection, Dermatophytosis, Knowledge, Attitude, Practices, Personal hygiene

INTRODUCTION

Dermatophytosis is one among the most common superficial fungal infection of the skin, hair and nail. In India, cases of dermatophytosis are increasing with prevalence rate of more than 20-27%. The high prevalence of dermatophytosis in India is mainly influenced by tropical climate, low level standards of personal hygiene and lower socioeconomic status with poor literacy rate. Other factors such as prolonged contact with animals, overcrowding and sharing of clothes are also responsible for the incidence and propagation of superficial fungal infections among Indian population. It has a high morbidity rate affecting the occupational, psychological health and quality of life. Hence it is important the address the various modifying contributing factors of dermatophytosis among the general population. The knowledge, attitude and practices regarding the dermatophytosis and importance of maintaining the personal hygiene is largely understudied. Hence this study has been conducted to address the importance about

knowledge of superficial fungal infections, attitude towards the disease and personal hygiene practices mainly among the adults.

METHODS

It was a tertiary hospital based cross-sectional study design. The present study was conducted at dermatology outpatient department (OPD) of Sree Balaji Medical College and Hospital, Chromepet, Chennai from April 2021 to July 2021 (3 months).

All the patients above 18 years of age with clinically diagnosed dermatophytosis of skin were included in the study and patients below 18 years of age-group were excluded in our study.

A pre-designed and semi-structured questionaries was given to study participants after taking informed written consent. It is designed as a two-part section of which first part mainly includes demographic profile and second part includes knowledge about superficial fungal infection, mode of transmission, attitude towards the disease and practices regarding maintenance of personal hygiene.

Statistical analysis

Data entered on Microsoft excel sheet, analyzed and expressed as proportions and percentage.

Ethical approval

Ethical approval was granted by Sree Balaji Medical College and Hospital institutional human ethical committee (ref.no.002/SBMC/IHEC/2021/1514) respectively.

RESULTS

A total of 100 patients participated in the study of which 47 (47%) patients are male and 53 (53%) patients are female (Table 1 and Figure 1).

Table 1: Distribution of patients attending out-patient department according to age.

Age (years)	Proportion (n)
18-24	24
25-34	35
35-44	24
45-60	12
>60	5
Total	100

In our study, the target population is ranged from 18-70 years of age. Majority of patients were in the age-group of 25-34 years (35%) followed by 18-24 years (24%) and 35-44 years (24%) of age-group with low number of patients from 45-60 years (12%) and more than 60 years (5%) of age-group (Table 2 and Figure 2).

Table 2: Distribution of patients attending out-patient department according to gender.

Gender	Number of patients	%
Male	47	47
Female	53	53
Total	100	100

The findings on the knowledge of participants on superficial fungal infections are listed in Table 3. Assessment on knowledge of patients regarding the spread of fungal infection from person to person showed that 45% patients reported correctly and 55% patients not agreeing with it. The study also revealed that 84% of patients reported correctly about the association of sweating with sweat feeling index (SFI) and 76% of patients know about the possible sites of dermatophyte infection. 91% and 96% of patients had no knowledge about the spread of infection through sharing clothes and collective washing clothes of other family members. 100% of patients are not aware of dermatophyte infection affecting hair and only 23% of patients had awareness about the dermatophyte infection associated with nail. Only 7% of patients had knowledge regarding occupation related dermatophyte infection. 43% of patients are correctly knew about seasonal association of dermatophytosis and only 3% had awareness that it can be acquired through the pet.

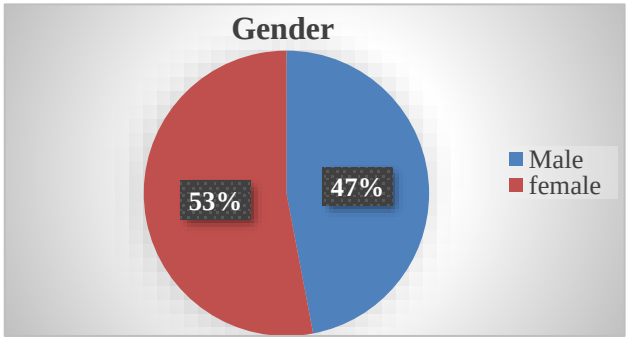

Figure 1: Distribution of patients attending out-patient department according to gender.

Regarding attitude 80% of patients strongly agreed that dermatophytosis occurs due to poor skin hygiene and 79% of patients agreed that treatment is necessary for dermatophytosis. 67% of patients did not believe that treatment of other family members is necessary and half of the patients (56%) believing that getting dermatophytosis is unavoidable. 75% of affected patients with dermatophytosis had severe itching. 21% of patients believing that dermatophytosis will heal itself and also reported that 80% of patients did not agreeing with increased moistures or wet condition association with dermatophytosis will increase the chance of getting infection. It is also revealed that 29% of patients

considered dermatophytosis as exclusively of sexually transmitted infections (Table 4).

The results regarding the personal hygiene practices of participants are listed in Table 5. About 39% of patients reported that they don't bath daily and 72% of patients reported they don't wash their clothes after every use. It is revealed that 35% of patients had no habit of washing feet after coming from outside and 54% of patients did not have second bath after completely drenched in sweat.

About 50% of patients reported sharing clothes and 43% of patients are sharing hairbrush with other family members. 64% of patients revealed that they trim the nail once in a month and 3% of patients used to trim once in 2 months. About 87% of patients revealed that they used to dry their washed clothes often in sunlight outside and only 13% of patients used to dry their washed clothes inside the house. It is reported that 98% of patients are not washing their used towels daily and 45% of patients are used to wash their towels weekly once and 18% of patients are washing their towels monthly once. 25% of patients are used to wash their used towels for every 15 days. About 50% of patients revealed that they need follow-up for the treatment of dermatophytosis.

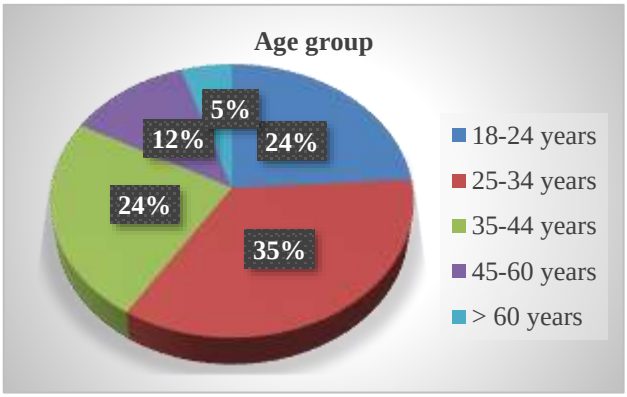

Figure 2: Distribution of patients attending out-patient department according to gender.

Table 3: Knowledge regarding the superficial fungal infection.

S. no.	Questions	Yes N (%)	No N (%)
1	Does it spread from person to person	45	55
2	Is it seasonal	43	57
3	Is sweating related to this infection	84	16
4	Does sharing of clothes &and objects spread it	9	91
5	Does collective soaking and washing of clothes of all family members increase risk of getting infected	1	99
6	Knowledge on possible sites of dermatophytosis	76	24
7	Can certain occupation increase the risk of dermatophytosis	7	93
8	Dermatophytosis can affect my hair	0	100
9	Discoloration and thickening of nails can be a sign of dermatophytosis	23	77
10	Can I get dermatophytosis from pet animals	3	97

Table 4: Attitude towards the superficial fungal infection.

S. no.	Questions	Yes N (%)	No N (%)
1	Dermatophytosis are caused due to poor skin hygiene	80	20
2	Treatment is necessary for this condition	79	21
3	Should entire family be treated for this condition	33	67
4	Do you think that dermatophytosis is unavoidable and everyone will get it at some point	56	44
5	Dermatophytosis associated with itching	75	25
6	Dermatophytosis will heal by itself	21	79
7	Dermatophytosis is related to frequent use of water	20	80
8	Dermatophytosis is type of STI	29	71

Table 5: Practice of study population regarding personal hygiene.

S. no.	Questions	Yes N (%)	No N (%)
1	Do you bath daily?	61	39
2	Do you wash clothes after every use?	28	72

Continued.

S. no.	Questions	Yes N (%)	No N (%)
3	Do you wash feet after coming from outside?	65	35
4	Do you have a bath after getting drenched in sweat?	46	54
5	How often you trim nails?		
	Once a week	33	67
	Once a month	64	36
	Once in 2 months	3	97
6	Do you wear ironed clothes	22	78
7	How do you dry your clothes and undergarments?		
	In the sun outside	87	13
	Inside house on stand	13	87
	Dryer	0	100
8	How often do you wash towels?		
	Daily	2	98
	Weekly	45	55
	Monthly	28	72
	Every 15 days	25	75
9	Do you share clothes/towels?	50	50
10	Do you share your hairbrush/comb?	43	57
11	Treatment adherence practice?	50	50

DISCUSSION

Findings from the study revealed that maximum number of cases were in the age-group of 25-34 years and it can be explained with increased sweating associated due to various outdoor/indoor activities are common in this age-group than compared to older age. The findings are in accordance with study conducted by Kulkarni et al.[1]

We also report that our study had more female cases (53%) of dermatophytosis compared to male cases (47%). It is noted in similar studies conducted by Pires et al and Dsouza et al.[2,3] Our findings are not in accordance with study conducted by Alkeswani et al and Alemayehu et al.[12,13] it can be explained that most of the Indian females are being house wives and they prefer to clothe themselves completely, enabling a suitable ground for the growth of fungal infections. It is reported in the study conducted by Rajshahi Medical College, Bangladesh, that most cases of dermatophytosis were housewives compared to other occupational works.[4]

Regarding the knowledge about superficial fungal infections, 45% of patients knew that the infections spread through contact and 55% of patients had no idea about the spread of infection through contact. It can be explained that 45% of patients with dermatophytosis are associated with similar lesion with in the family members. We also report that 81% of patients had knowledge about the association of fungal infection with increased sweating and only 9% of patients had knowledge about spread of infection by sharing personal belongings. In a study conducted by Dsouza reported that 155 (62%) of patients knew that the increased sweating is the risk factor for dermatophytosis.[3] It is explained that due to increased sweating, spores of dermatophytosis can germinate on the skin surface and draw their nutrition from sweating. Similar findings were reported in study conducted by Sahin et al.[10]

Findings also revealed that 43% of patients had knowledge about the seasonal occurrence of dermatophytosis mainly during summer. The possible explanation is association of increased sweating during summer. We found that, most of the patients (99%) had no knowledge about the spread of infection to family members through collective soaking of clothes of affected person. it is found that 76% of patients had awareness about the possible sites of infection and it can be explained by the fact that lesions of dermatophytosis are recurrent and mostly occurring over the covered and occlusive areas of body. this findings are not in accordance with study conducted by Alfred et al.[8]

In present study, we report that only 7% of patients had knowledge about certain occupation increasing the risk of dermatophytosis (mostly maids, heavy loaders, farmers). Whereas Das et al reported that occupational works like house-workers and laborers are mostly associated with dermatophytosis.[5] In our study, we found that 100% of patients had no knowledge about dermatophytosis involving the scalp hair. It can be explained by the fact that scalp hair involvement of dermatophytosis is more common in children and very rarely affects the adults and elderly age-group. About 23% of patients had awareness about nail involvement in dermatophytosis, with most of the patients being participated in the study were associated with nail discoloration and thickening. Only 3% of patients had awareness about close contact with pet animals can cause dermatophytosis and it can be explained in a possible way that most of their pets at home may be associated with features of dermatophytosis caused by zoophilic

dermatophytes and participants may had awareness from veterinary doctors.

Regarding the attitude, 80% of patients are strongly agreed with poor hygiene habits responsible for dermatophytosis. About only 33% of patients agreed with the treatment of entire affected family members and it may be due to the spread of similar lesions in other family members and recurrence of infection. In our study, we found that 79% of patients agreed that dermatophytosis should be treated and 21% of patients felt that it can heal itself sometimes. It can be explained that dermatophytosis is associated with severe itching can cause embarrassment to patients in public and with high chance of recurrence can impair the quality of life. About 29% of patients still consider dermatophytosis as a type of sexually transmitted infection and it is mainly because lesions of dermatophytosis commonly occurring over the groin, genitals and association of similar lesion in sexual partners.

A total of 53% of patients had habits of sharing of clothes, towel and 43% of patients are sharing hair brush or personal objects with in family members. It is because that sharing of clothes and personal objects are important for the transmission of dermatophytosis with in family members. Similar findings were reported in study conducted by Pomeranz et al.[11] In our study, we report that 87% of patients are washing clothes and dry it under sunlight, while 13% of patients are drying it inside their home using stands. Only 2% of patients had practice of washing towels daily and 18% had practice of washing towels monthly once. This kind of practices are often responsible for the carrier of dermatophytosis and causing infection within family members through unclean clothes and towels. It is being reported in a study conducted by Amachi et al reported the role of sunlight in disinfection of clothes.[11] Khanjanasthiti et al reported about the survival of various dermatophytes like *T. rubrum* surviving for <12 weeks on a towel while *T. mentagrophytes* surviving for >25 weeks on towels.[7] Total of 39% of patients are not having bath daily and 54% of patients are not washing their clothes after completely drenched in sweat, while 35% of patients are not washing their feet after coming from outside. This clearly indicates the importance the maintaining high level personal hygiene practices to prevent the recurrent infection and spread of current infections within the family members.

We report that 33% of patients had habit of trimming their nails by weekly once and 64% of patients are trimming their nails by monthly once, while 3% of patients had habit of trimming nails by 2 months once. It is necessary to spread the awareness about the risk of getting onychomycosis by repeated nail trauma due to infrequent trimming of nails.

In our study, we found that 50% of patients are strongly disagree with treatment adherence practice. This is in accordance with the study conducted by Kulkarni et al reporting 58% of cases.[1]

Limitations

Since it is a tertiary care hospital based study the findings cannot be applicable to general population.

CONCLUSION

In our study, we conclude that the prevalence of dermatophytosis more common among the younger age-groups (25-34 years) and high preponderance among females. Despite the patients demonstrating good knowledge about mode of spread of dermatophytosis, still most of the patients are failed to implement the knowledge in maintaining personal hygiene practices. There is a need to improve the gap between the knowledge about the dermatophytosis and their personal hygiene practices towards the infection. It is important to communicate with the patient about the treatment of other family members and changing their attitude towards the infection. This approach will help to improve the adherence of treatment and also prevents the recurrence of dermatophytosis.

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