Original Article

Prevalence of Skin Conditions of Monks in Urban Bangkok Temples

Boonsiri M, MD[1], Tangtrongsitthikul P, MD[1], Hanthavichai S, MD[1]

[1] Dermatology Unit, Department of Internal Medicine, Faculty of Medicine Vajira Hospital, Navamindradhiraj University, Bangkok, Thailand

Objective: To assess the prevalence, characteristics as well as the associated factors of skin conditions in Urban Bangkok monks.

Materials and Methods: The study population consisted of 184 Thai monks who aged 35 years old and above, having been ordinated for at least 1 year from twenty-two temples in Dusit and Nhog chok districts, Bangkok. Health survey collected by self-administered questionnaire whereas dermatologic symptoms, conditions and Fitzpatrick skin type of the monks were asked and examined by dermatologist. Data were analyzed for prevalence as well as relevance of skin conditions and daily life activities.

Results: 184 monks with the mean age of 43.89±18.39 years were included. Most of them have Fitzpatrick skin type 4. Pigmentary disorders from aging process were the most common followed by foot problems and xerosis cutis. The foot conditions were significantly associated with a habit of not wearing shoes but dry skin with pruritus were not statistically associated with the use and type of soap.

Conclusion: Aging skin pigmentary problems, foot problems and dry skin were main skin conditions among the monks in urban areas. Wearing improper or not wearing shoes were significant factors for callus or cracked heels and Tinea pedis.

Keywords: Monk, Skin conditions

J Med Assoc Thai 2019;102(Suppl.8): 10-3
Website: http://www.jmatonline.com

Skin conditions are different in male and female because of the difference in skin structures, physiology especially levels of androgen and estrogen hormones. Males are more common to have infectious skin diseases and dermatoses which are stimulated by androgen levels whereas female are more susceptible to pigmentary disorders which are related to estrogen levels, hair and autoimmune diseases[1]. One pre-requisite to become a monk in Buddhism is being male; hence, the monks have higher chance of having gender-associated skin conditions. Besides, the monks' daily activities, such as, living in the temple with close contact with each other, sharing personal belongings may contribute further to skin disorders. To date, there has been insufficient data regarding the prevalence of the skin disorders, their features and associated factors.

Our institution's major responsibility is to promote health and well-being, and to provide health care for people especially in urban areas. Having data of health in urban population including the monks who have distinct way of livings different from laymen are important. The aim of the present study was to assess the prevalence of skin conditions, characteristics and the associated factors.

Correspondence to:

Boonsiri M.

Dermatology Unit, Department of Internal Medicine, Faculty of Medicine Vajira Hospital, Navamindradhiraj University, Bangkok 10300, Thailand.

Phone: +66-2-2443461

E-mail: metaveeboon@yahoo.com

Materials and Methods

Subjects

The present study was approved by Vajira Hospital institutional Ethical Committees. Twenty-two temples in Dusit and Nhog chok districts, Bangkok, Thailand were selected. Inclusion criteria were Thai monks who aged 35 years old and above, having been ordinated for at least 1 year, and being literate in Thai. Exclusion criteria were the monks who were not willing to participate or were not in the temple on the day of survey.

Data collection

Our health survey comprised of general demographic and history of health data collected by self-administered questionnaire, general physical examination included assessment of body build, vital signs including blood pressure and general physical examination of skin and eye, basic laboratory tests. Dermatologic symptoms and conditions were asked and examined by dermatologist. Fitzpatrick skin type of the monks was collected as well as personal history such as type of soap usage and history of shoe wearing.

Statistical analysis

Data analysis was performed by using SPSS software version 22.0 (IBM Corp, Armonk, NY). Continuous

How to cite this article: Boonsiri M, Tangtrongsitthikul P, Hanthavichai S. Prevalence of Skin Conditions of Monks in Urban Bangkok Temples. J Med Assoc Thai 2019;102(Suppl.8): 10-3.

data were described by using median and percentage. Relevance of the conditions with their daily life activities were univariate analysis and compared using Fisher's exact test. The *p*-value <0.05 was considered significant.

Results

Among 184 monks included in the study, the mean age of 43.89±18.39 years. Most of them were in 20 to 40 years group of age (47.3%). The most common Fitzpatrick skin type was type 4 followed by type 5 and type 3. None of the monks had skin types I or II. Table 1 shows demographic data and habit of shoe-wearing and soap use by the monks in the present study. Nearly 70% did not wear shoes for their daily activities. There were no any report of skin lesions from the monks themselves except some reported pruritus.

From physical examination, various types of skin lesions were revealed (Table 2). The most common skin lesions were from aging process, such as, melasma, freckle, as well as idiopathic guttate hypomelanosis (IGH). Corn or callus with cracked heel were the second common skin disorder found. There were nine among 57 monks who had signs of fungal infection and also proven with KOH preparation, so diagnosed as having tinea pedis. The third commonly found skin lesion was xerosis cutis; all of them had clinical pruritus. However, no signs of dermatophyte infection were found among this group of monks. The present study found 43 monks (23.4%) had tattoo marks on their body. However, no tattoo associated dermopathies, such as, allergic reactions or infections were found. The other common skin lesions were acne over the face or trunk and eczema which were found in approximately 1/5 (slightly over 20%) of the monks. We did not find any scalp lesions of alopecia or Tinea capitis.

Factors which might be associated with each type of skin lesions were studied (Table 3). Significant association between callus, cracked heel, Tinea pedis and history of not wearing shoes were demonstrated. The prevalence of callus and cracked heel were significantly highest in the monks who did not wear any shoes compared to those who wore rubber or other types of shoes: 75.0% compared to 28.3% or 50.0%, respectively (p = 0.030). On the other hand, patients who wore rubber or other types of shoes had less Tinea pedis than those who wore no shoes: 3.0% or 21.4% compared to 25%, respectively (p = 0.0006). No significant correlation between clinical xerosis and the use or type of soap.

Table 1. Demographic data of the monks (n = 184)

	n	%
Age group		
21 to 40	87	47.3
41 to 60	62	33.7
>60	35	19.0
Fitzpatrick skin type		
Type III	53	28.8
Type IV	67	36.4
Type V	64	34.8
Shoe wearing		
Yes	57	31.0
Rubber	45	24.5
Others	12	6.5
No	127	69.0

Table 2. Skin conditions found among the monks from physical examination (n = 184)

Skin conditions*	n	Percent
Aging skin (melasma/freckle/IGH**)	67	36.4
Corn/callus and cracked heel	57	31.0
Xerosis cutis and clinical pruritus	50	27.2
Tattoo	43	23.4
Acne (face and back)	40	21.7
Eczema	37	20.1
Tinea pedis (confirmed by KOH)	9	4.9
Psoriasis	5	2.7
Urticaria	5	2.7

* One patient can have more than one condition
** Idiopathic guttate hypomelanosis

Discussion

To date, there had been no reports about skin problems of the monks who are male and who generally have higher chance for male-associated skin lesions and infectious dermatoses[1]. Different risks between gender may lie on the physiologic pattern of sex hormones (estrogen and androgen) in male and female. Sex hormones are secreted, aside from the sex organs (ovary and testis), also produced locally in human skin. The hormonal levels vary between in male and female skin. This leads to higher sebum production and skin problems in adult male[2]. As found in the present study that some skin conditions, such as, acne especially over the back/trunk, callus, etc were commonly found among the monks. Aside from being male, sociocultural behavior and daily activities of the monk which are distinct from laymen may contribute further to skin lesions.

The most common skin condition found in this study was aging-related including melasma, freckle and IGH. Although previous studies showed pigmentary disorders were less common in male than female, however, they have multiple predisposing factors. Other factors, aside from gender which may contribute to the pigmentary disorders were e.g. those with dark skin or Fitzpatrick skin type IV, V and VI, South Asian ethnic, and exposure to sunlight[3,4]. Sun exposures is important factor causing melasma, irrespective of sex as reported by Sarker et al that it is the main cause of melasma in male[3]. Ultraviolet radiations (UVA, UVB) increase proliferation and melanocyte activities, causing epidermal hyperpigmentation[5,6]. Sunscreen, which may be considered as a cosmetic agent, is generally prohibited in monks. Thus, sun avoidance is the most important part of melasma prophylaxis, improving the condition and prevention of recurrence.

Table 3. Factors associated with skin conditions by univariate analysis

Skin conditions	Yes, n (%)	No, n (%)	
Corn and callus/cracked heel	57 (31.0)	127 (69.0)	0.030
Rubber shoe wearing	47 (28.3)	119 (71.7)	
Other shoes wearing	7 (50.0)	7 (50.0)	
No shoe wearing	3 (75.0)	1 (25.0)	
Xerosis cutis and pruritus	50 (27.2)	134 (72.8)	0.413
Liquid soap using	23 (31.1)	51 (68.9)	
Bar soap using	24 (23.5)	78 (76.5)	
No soap using	3 (37.5)	5 (62.5)	
Eczema	37 (20.1)	147 (79.9)	0.088
Liquid soap using	19 (23.5)	62 (76.5)	
Bar soap using	17 (16.7)	85 (83.3)	
No soap using	1 (100)	0	
Acne (face and back)	40 (21.7)	144 (78.3)	0.451
Liquid soap using	19 (25.7)	55 (74.3)	
Bar soap using	19 (18.5)	84 (81.5)	
No soap using	2 (28.6)	5 (71.4)	
Tinea pedis (confirmed by KOH)	9 (4.9)	175 (95.1)	0.006
Rubber shoe wearing	5 (3.0)	161 (97.0)	
Other shoes wearing	3 (21.4)	11 (78.6)	
No shoe wearing	1 (25.0)	3 (75.0)	

All analyses by Fisher's exact test

Corn, callus and cracked heel were the second common skin disorders found in our study. Callus is diffused thickening of the skin whereas corn is skin thickening in central area of the lesions[7]. To our knowledge, there had been no study about the foot conditions in monks. Monk's activity in walking barefoot around to receive alms from laymen every morning is a major predisposing factor for these conditions. Foot pressure and friction especially with improper footwear are also important factors. The present study showed a significant association between not wearing shoes and these conditions. Aside from simple corn, callus or cracked heel, not wearing shoes was also significantly associated with tinea pedis (Table 3). Aside from not wearing shoes, the tinea pedis which is caused by dermatophytes was reported to be associated with shoe-sharing[8]. Although this shoe-sharing behavior was not assessed in the present study, data of shoe-wearing habits and relevant knowledge should be given to all monks. Good habits and proper foot care to prevent or minimize symptoms or complications e.g. ulcer or infection of these conditions.

The use and type of cleansing preparations of soap and detergents have influence on the pH, fat content and hydration of the skin[9]. The present study found 27% of monks had dry skin and complained of pruritus. The possible reasons were that the soap and detergents are generally provided by the laymen or devotees. The preparations may not be appropriate to all individual monks. Furthermore, moisturizer which is generally considered as a cosmetic agent is usually prohibited. However, the present study could not demonstrate the association between the use and type of soap with dry skin. The small number of monks may have precluded any significant findings.

Nearly 1/4 of the monks in the present study had skin tattoo. In some people, tattoos are expression or symbols of religious devotion. The tattoo may play a role to strengthen individual's beliefs[10]. Aside from the possible effect on image, the procedure of tattooing can have complications, such as infection due to aseptic technique or from needles sharing, or allergic reaction to the coloring substances[11]. Other co-incidental lesions which had been reported with tattoo were lymphoma, basal cell carcinoma, squamous carcinoma, or Koebner response reactivation among individuals with psoriasis[12]. The present study did not find any tattoo-associated dermatoses as mentioned above. Nevertheless, data and knowledge especially the possible complications of tattooing should be made known to monks and other involved persons.

Conclusion

Aging skin problems, foot problems and dry skin were main skin conditions among the monks in urban areas. Wearing improper or not wearing shoes were significant factors for callus or cracked heels. Data from the present study should be taken to solicit a change in habit and daily activity of the Buddhist monks as well as education by the health care provider. Further study in a larger number of monks and in different areas would add more data to this area of medicine which is frequently neglected or underestimated.

What is already known on this topic?

Skin conditions in monks can be presented in various forms due to gender-related hormonal status, religious regulations, and environmental factors. Imbalance of hormones and sunlight exposure were important factors for

melasma/freckle and acne. Foot problems and dermatophyte infection were commonly found in monks because of their daily-activities.

What this study adds?

Callus/cracked heel and Tinea pedis were commonly found in monks. The conditions were significantly associated with a habit of not wearing shoes. Dry skin with pruritus was also another significantly complaints but were not associated with the use and type of soap. Tattooing was commonly found among monks in urban area.

Acknowledgements

The present study was granted by the research fund of Faculty of Medicine Vajira Hospital.

Potential conflicts of interest

The authors declare no conflicts of interest.

References

1. Chen W, Mempel M, Traidl-Hofmann C, Al Khusaei S, Ring J. Gender aspects in skin diseases. J Eur Acad Dermatol Venereol 2010;24:1378-85.
2. Grimes PE. Melasma. Etiologic and therapeutic considerations. Arch Dermatol 1995;131:1453-7.
3. Sarkar R, Puri P, Jain RK, Singh A, Desai A. Melasma in men: a clinical, aetiological and histological study. J Eur Acad Dermatol Venereol 2010;24:768-72.
4. Pichardo R, Vallejos Q, Feldman SR, Schulz MR, Verma A, Quandt SA, et al. The prevalence of melasma and its association with quality of life in adult male Latino migrant workers. Int J Dermatol 2009;48:22-6.
5. Ortonne JP, Arellano I, Berneburg M, Cestari T, Chan H, Grimes P, et al. A global survey of the role of ultraviolet radiation and hormonal influences in the development of melasma. J Eur Acad Dermatol Venereol 2009;23:1254-62.
6. Mahmoud BH, Ruvolo E, Hexsel CL, Liu Y, Owen MR, Kollias N, et al. Impact of long-wavelength UVA and visible light on melanocompetent skin. J Invest Dermatol 2010;130:2092-7.
7. Dunn JE, Link CL, Felson DT, Crincoli MG, Keysor JJ, McKinlay JB. Prevalence of foot and ankle conditions in a multiethnic community sample of older adults. Am J Epidemiol 2004;159:491-8.
8. Al Hasan M, Fitzgerald SM, Saoudian M, Krishnaswamy G. Dermatology for the practicing allergist: Tinea pedis and its complications. Clin Mol Allergy 2004;2:5-2.
9. Hannuksela A, Hannuksela M. Soaps and detergents in skin diseases. Clin Dermatol 1996;14:77-80.
10. Scheinfeld N. Tattoos and religion. Clin Dermatol 2007;25:362-6.
11. Jacob CI. Tattoo-associated dermatoses: a case report and review of the literature. Dermatol Surg 2002;28:962-5.
12. Sagi L, Trau H. The Koebner phenomenon. Clin Dermatol 2011;29:231-6.