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UNVEILING HIDDEN INSIGHTS: DERMATOLOGICAL SCREENING IN MASTER HEALTH CHECK-UP PATIENTS

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Abstract

Introduction: Master health check-ups, designed for early disease detection and overall health assessment, often lack routine dermatological screening. However, skin conditions significantly impact general well-being. This study aims to bridge the gap between general health assessments and dermatological well-being, emphasizing the importance of systematic dermatological screening in master health check-ups. **Objectives:** 1. Determine the overall prevalence of dermatological disorders. 2. Describe the types, locations, and characteristics of skin lesions detected during screening. **Materials and Methods:** Study Design: Cross-sectional observational study. Participants: Patients attending master health check-ups at Saveetha Medical College, Chennai. Data Collection: Over 6 months, convenience sampling of consecutive patients included demographic data, medical history, and skin examinations by trained dermatologists. Statistical Analysis: Prevalence is calculated as a percentage. Descriptive statistics were presented for demographic characteristics and dermatological findings. **Results:** Participants: 570 patients, mean age 45.24 ± 13.48, 57.9% female. Dermatological Complaints: 52.8%. Co-morbidities: 36.7%. Prevalence of Dermatological Conditions: 52.1%. Most Prevalent Conditions: Pigmentation disorders (20%), miscellaneous (19%), inflammatory (16%), pruritic (14%), infections and infestations (12%), hair and scalp conditions (12%), skin lesions and growths (7%). **Conclusion:** This study emphasizes the significance of incorporating dermatological assessments into routine master health check-ups. The findings underscore the need for a holistic approach to health assessments, potentially enhancing overall health outcomes and preventing complications associated with dermatological conditions. Further research is recommended to explore the association between dermatological conditions and systemic diseases.

INTRODUCTION

Master health check-ups are comprehensive assessments designed to detect early signs of diseases, assess overall health, and provide preventive recommendations. These check-ups often include various diagnostic tests, but dermatological screening is not always a routine component. However, the skin serves as a mirror reflecting both general health and specific conditions. Dermatological disorders can have significant implications for overall well-being, quality of life, and even mortality. Therefore, integrating dermatological assessments into master health check-ups is crucial.[1]

Understanding the prevalence of dermatological conditions in the master health check-up population is essential for resource allocation, planning, and prioritization. By systematically examining a large cohort of patients undergoing master health check-ups, we can quantify the burden of skin disorders. Data on prevalence will guide healthcare providers in allocating time, personnel, and equipment for dermatological screenings.[2]

Identifying risk factors associated with specific skin conditions allows for targeted interventions and personalized preventive strategies. Analyzing demographic (age, gender), lifestyle (sun exposure, hygiene practices), and medical (comorbidities,

medications) factors about skin health. Insights into risk factors will inform patient education, risk reduction, and early intervention efforts.[3]

Describing the types, locations, and characteristics of skin lesions detected during screening provides valuable clinical information. Dermatologists will visually assess lesions, document their features (size, color, texture), and possibly perform biopsies. Detailed lesion characterization aids in differential diagnosis, early detection of malignancies, and appropriate referrals.[2]

This study aims to bridge the gap between general health assessments and dermatological well-being. By unraveling hidden insights through systematic screening, we can enhance patient care, promote skin health awareness, and contribute to holistic preventive medicine.

Aim:

To investigate the prevalence, patterns, and clinical significance of dermatological conditions among patients undergoing master health check-ups.

Objectives:

- To determine the overall prevalence of dermatological disorders in the master health check-up population.
- To describe the types, locations, and characteristics of skin lesions detected during screening.

MATERIALS AND METHODS

Study Design

Type: Cross-sectional observational study.

Participants: Patients attending master health check-ups at Saveetha Medical College, Chennai.

Data Collection Period: Data was collected over a period of 6 months.

Sampling: Convenience sampling of consecutive patients attending health check-ups during the study period.

Data Collection

Informed Consent was obtained from each participant. Demographic Data like age, gender, occupation, relevant medical history, and any known dermatological conditions were documented. A thorough skin examination by trained dermatologists. Assessment was done for skin lesions, pigmentation, rashes, and other abnormalities.

Statistical Analysis

The prevalence of dermatological conditions was calculated as a percentage of the total sample. Stratification was done by age, gender, and occupation. Demographic characteristics and dermatological findings are presented as descriptive statistics

RESULTS

In our study conducted for a period of 6 months, a total of 570 participants who underwent master health check-up were included and dermatological screening was done. The mean age of the study participants was 45.24 ± 13.48. Majority of patients

(57.9%) were female in our study population. About 52.8% patients had some dermatological complaint. Among the 570 participants, 36.7% had co-morbidities like Diabetes Mellitus, Hypertension, Thyroid disorder and fatty liver as shown in table 1.

Table 1: Baseline Characteristics of the Study Participants

Parameter	Total no of participants n=570 (%)
Age in years (mean ± SD)	45.24 ± 13.48
Gender	
Male	240 (42.1)
Female	330 (57.9)
Dermatological complaints	
Present	301 (52.8)
Absent	269 (47.2)
Co-morbidities	
Present	209 (36.7)
Absent	361 (63.3)

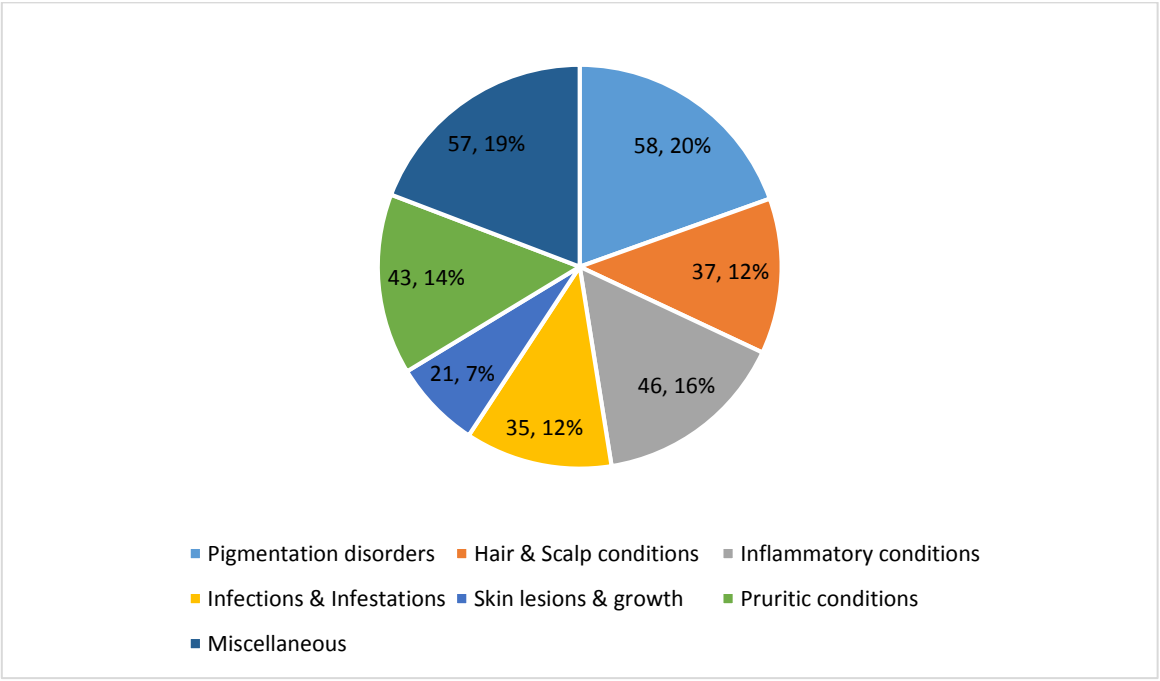

Figure 1: Overall Prevalence of Dermatological Conditions in the Study Participants

Pigmentation disorders - Melasma, Freckles, Vitiligo, Post-inflammatory Hypopigmentation, Facial Hyperpigmentation, Pigmented Purpuric Dermatitis; Miscellaneous conditions - Geographic Tongue, Nail Injury, Acne Scars, Fissure Feet, Leg Ulcer, Miliaria, Syringoma, Onychophagia (Nail Biting, inferred from Nail Pitting); Hair and Scalp conditions – Alopecia, Telogen Effluvium, Androgenic Alopecia, Diffuse Hair Loss, Scalp Psoriasis, Tinea Capitis, Follicular Triad, Trachyonychia; Inflammatory Skin Conditions – Eczema, Psoriasis Vulgaris, Seborrheic Dermatitis, Lichen Planus, Chronic Urticaria, Acne Vulgaris, Pyoderma; Infections and Infestations - Bacterial Infection, Tinea (Fungal Infection), Scabies, Onychomycosis; Skin Lesions and Growths - Skin Tags, Dermatosis Papulosa Nigra (DPN), Wart (Filliform Wart), Keratosis Pilaris, Lipoma, Varicose Eczema, Corn Foot; Pruritic Conditions- Xerosis, Irritant Contact Dermatitis, Contact Dermatitis, Pityriasis Versicolor, Pityriasis Capitis, Dye-Induced Pruritis, Prurigo Nodularis

In our study, 297 participants ie. (52.1%) had at least one dermatological condition. Pigmentation disorders were seen in the majority (20%) of the participants, 19% had miscellaneous skin conditions, 16% had inflammatory conditions, 14% had pruritic conditions, 12% had infections and infestations and hair and scalp conditions each and 7% had skin lesions and growth as shown in figure 1.

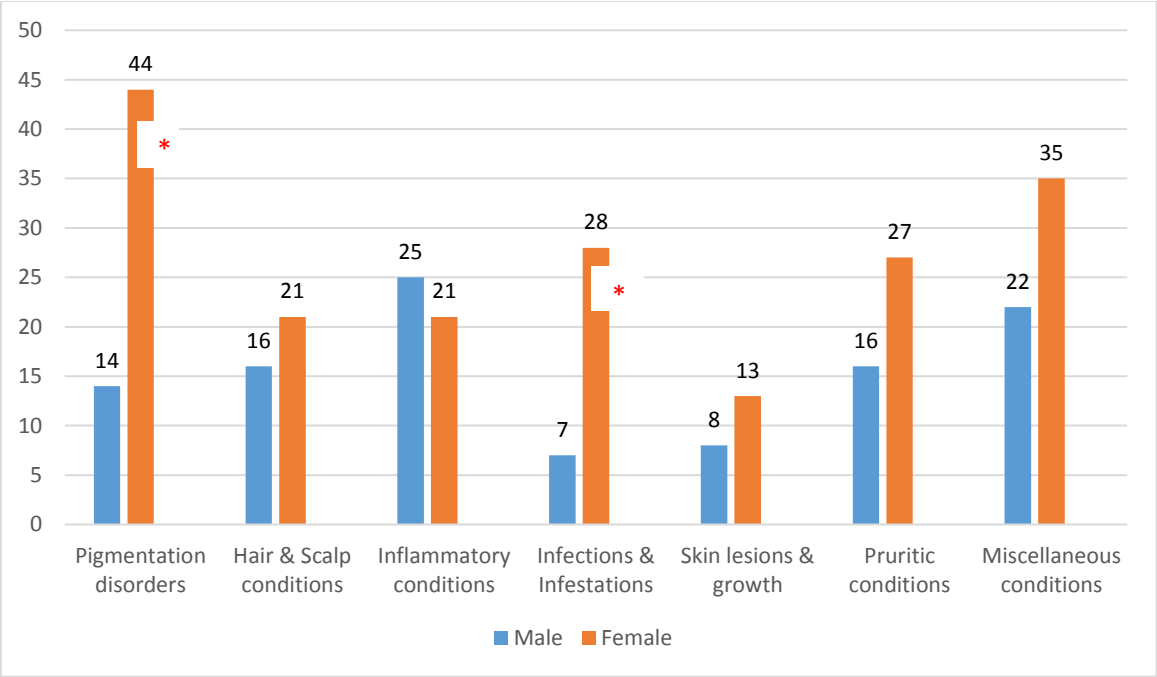

Figure 2: Prevalence of Dermatological Conditions in the Study Participants Stratified by Gender

Figure 2 shows the various dermatological conditions stratified based on gender and it was seen that there was a statistically significant difference between males and females in pigmentation disorders ($p = 0.003$) and infections and infestations ($p=0.006$).

DISCUSSION

This study aimed to assess the prevalence and pattern of dermatological conditions among patients who underwent master health check-ups at a tertiary care hospital. To our knowledge, this is the first study of its kind in this region, where dermatological screening is not routinely done as part of the health check-up.

Our study found that more than half of the participants (52.1%) had at least one dermatological condition, which is consistent with previous studies from other parts of India and abroad. This indicates that dermatological problems are common and often neglected by the general population. Moreover, we observed that 36.7% of the participants had co-morbidities such as diabetes mellitus, hypertension, thyroid disorder, and fatty liver, which may have an impact on skin health and vice versa.

The most prevalent dermatological condition in our study was pigmentation disorders (20%), followed by miscellaneous conditions (19%), inflammatory conditions (16%), pruritic conditions (14%), infections and infestations (12%), hair and scalp conditions (12%) and skin lesions and growths (7%). The high prevalence of pigmentation disorders may be attributed to the tropical climate, sun exposure, genetic factors, and

hormonal influences. Among the pigmentation disorders, melasma was the most common (9.1%), followed by freckles (4.2%), vitiligo (2.8%), post-inflammatory hypopigmentation (1.9%), facial hyperpigmentation (1.4%) and pigmented purpuric dermatitis (0.5%). Melasma is a chronic acquired hypomelanosis of the face, which affects mainly women of reproductive age and is associated with various factors such as pregnancy, oral contraceptives, cosmetics, sun exposure, and genetic predisposition. Freckles are small, brown macules that appear on sun-exposed areas, especially in fair-skinned individuals. Vitiligo is an acquired depigmentation disorder, which results from the loss of melanocytes and affects about 1% of the world population. Post-inflammatory hypopigmentation is a common sequel of various inflammatory skin diseases, such as eczema, psoriasis, lichen planus, etc. Facial hyperpigmentation is a broad term that encompasses various conditions such as melasma, post-inflammatory hyperpigmentation, periorbital hyperpigmentation, etc. Pigmented purpuric dermatitis is a chronic condition characterized by petechiae and pigmentation on the lower limbs, which may be idiopathic or associated with venous insufficiency, drugs, infections, etc.[4]

The second most prevalent group of dermatological conditions in our study was miscellaneous conditions (19%), which included geographic tongue, nail injury, acne scars, fissure feet, leg ulcers, miliaria, syringoma, onychophagia, etc. These conditions are mostly benign and do not pose a serious threat to the health, but may cause cosmetic or functional impairment. Geographic tongue is a common condition that affects the dorsal and lateral aspects of the tongue and is characterized by erythematous patches with white borders that change in shape and size over time. Nail injury is a common occurrence that may result from trauma, infection, inflammation, or systemic diseases. Acne scars are the result of inflammatory acne lesions that damage the collagen and elastin fibers of the skin, leading to atrophic or hypertrophic scars. Fissure feet are linear cracks in the skin of the heels or toes, which may be caused by dry skin, excessive pressure, obesity, diabetes, etc. Leg ulcer is a chronic wound that affects the lower extremity, and may be due to venous insufficiency, arterial insufficiency, diabetes, infection, etc. Miliaria is a common condition that occurs due to obstruction of the sweat ducts, leading to small, itchy papules or vesicles on the skin. Syringoma is a benign adnexal tumor that arises from the eccrine sweat glands and manifests as multiple, skin-colored, or yellowish papules on the eyelids, cheeks, neck, chest, etc. Onychophagia is a habitual disorder that involves biting or picking the nails, which may result in nail deformity, infection, or psychological distress.[5]

The third most prevalent group of dermatological conditions in our study was inflammatory conditions (16%), which included eczema, psoriasis vulgaris, seborrheic dermatitis, lichen planus, chronic urticaria, acne vulgaris, and pyoderma. These conditions are characterized by inflammation of the skin, which may be triggered by various factors such as allergens, irritants, infections, stress, hormones, etc. Eczema is a common chronic inflammatory skin disease that affects about 10% of the population and is characterized by pruritus, erythema, scaling, and lichenification. Psoriasis vulgaris is a chronic inflammatory skin disease that affects about 2% of the population and is characterized by well-defined, erythematous, scaly plaques that may involve any part of the body. Seborrheic dermatitis is a common inflammatory skin disease that affects the seborrheic areas of the body, such as the scalp, face, chest, etc and is characterized by erythema, scaling, and greasy appearance. Lichen planus

is a chronic inflammatory skin disease that affects about 1% of the population and is characterized by violaceous, flat-topped, polygonal papules that may involve the skin, mucous membranes, nails, and hair. Chronic urticaria is a common condition that affects about 1% of the population and is characterized by recurrent episodes of pruritic, edematous, and erythematous wheals that last for more than six weeks. Acne vulgaris is a common inflammatory skin disease that affects about 80% of adolescents and young adults and is characterized by comedones, papules, pustules, nodules, and cysts that involve the face, chest, back, etc. Pyoderma is a bacterial infection of the skin, which may present as impetigo, folliculitis, furuncle, carbuncle, cellulitis, etc.[6,7]

The fourth most prevalent group of dermatological conditions in our study was pruritic conditions (14%), which included xerosis, irritant contact dermatitis, contact dermatitis, pityriasis versicolor, pityriasis capitis, dye-induced pruritis, and prurigo nodularis. These conditions are characterized by pruritus, which is an unpleasant sensation that provokes the desire to scratch. Xerosis is a common condition that affects the skin barrier function, leading to dryness, scaling, and itching of the skin. Irritant contact dermatitis is a common condition that occurs due to exposure to irritants, such as detergents, solvents, acids, alkalis, etc, which cause damage to the skin barrier and inflammation. Contact dermatitis is a common condition that occurs due to exposure to allergens, such as metals, cosmetics, plants, etc, which cause a delayed hypersensitivity reaction in the skin. Pityriasis versicolor is a common superficial fungal infection that affects the stratum corneum and is characterized by hypopigmented or hyperpigmented macules that may coalesce to form patches on the trunk, neck, arms, etc. Pityriasis capitis is a common superficial fungal infection that affects the scalp and is characterized by scaling, itching, and hair loss. Dye-induced pruritis is a common condition that occurs due to exposure to hair dyes, which may contain allergens or irritants that cause itching and inflammation of the scalp. Prurigo nodularis is a chronic condition that occurs due to repeated scratching, which leads to the formation of pruritic, hyperkeratotic, nodular lesions on the skin.[8]

The fifth most prevalent group of dermatological conditions in our study was infections and infestations (12%), which included bacterial infection, tinea, scabies, and onychomycosis. These conditions are caused by microorganisms or parasites that invade the skin and cause various clinical manifestations. Bacterial infection is a common condition that affects the skin and may present as impetigo, folliculitis, furuncle, carbuncle, cellulitis, etc. Tinea is a common superficial fungal infection that affects the skin, hair, and nails, and is characterized by annular, scaly lesions.[9]

Our study sheds light on the comprehensive prevalence and patterns of dermatological conditions among individuals undergoing master health check-ups, filling a crucial gap in knowledge for this region where routine dermatological screenings are not a standard part of health check-ups. The high prevalence of dermatological conditions (52.1%) among the study participants emphasizes the significance of incorporating skin health assessments into routine health check-ups.

Our findings have implications for healthcare providers, suggesting the need for a holistic approach to health check-ups that includes routine dermatological assessments. Identifying and addressing dermatological conditions early on may not only enhance overall health outcomes but also contribute to the prevention of complications associated with these conditions.

Future research should delve into the association between specific dermatological conditions and systemic diseases, providing a more nuanced understanding of the complex interplay between skin health and overall well-being. Additionally, longitudinal studies may help elucidate the progression and recurrence patterns of dermatological conditions in this population.

CONCLUSION

This study aimed to assess the prevalence and pattern of dermatological conditions among patients who underwent master health check-ups at a tertiary care hospital in India. The study found that more than half of the participants had at least one dermatological condition, with pigmentation disorders being the most common, followed by miscellaneous, inflammatory, pruritic, infectious, and hair and scalp conditions. The study also revealed a significant difference between males and females in pigmentation disorders infections and infestations. The study highlighted the importance of dermatological screening as part of the health check-up, as many of the skin problems are often overlooked or ignored by the patients. The study also suggested the need for further research on the etiology, pathogenesis, and management of various dermatological conditions, especially about the co-morbidities and environmental factors. The study concluded that dermatological problems are prevalent and diverse in the study population, and require more attention and awareness from both the healthcare providers and the patients.

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