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Dermatologic Manifestations in Senior Citizens at University of Port-Harcourt Teaching Hospital

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Authors' contributions

This work was carried out in collaboration among all authors. Author OOB designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors AE, PEF managed the analyses of the study. Author BGHI managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Background: Elderly people are vulnerable to a wide variety of dermatologic conditions as a result of degenerative and metabolic changes which occur throughout the skin layers as part of the aging process.
Methods: A cross-sectional descriptive assessment of dermatological complications among 126 elderly respondents who presented at different wards of the University of Port Harcourt Teaching Hospital (UPTH) was carried out.
Results: The results showed a Male to Female ratio of 1.3:1 with 73 (57.9%) males and 53 (42.1%) females. The was a 51.4% prevalence of dermatological complications among the participants.Statistical analysis showed a significant association of the occurrence of

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dermatological lesions with tattoos, photosensitivity and post-bleaching syndrome among female subjects only ($p < 0.05$). Similarly, Idiopathic guttate hypomelanosis was found to be significantly higher ($p<0.05$) among individuals with 4 -5 chronic illnesses.

Conclusion: The findings of the study showed that xerosis is highly prevalent in the elderly in UPTH. Infections are a major cause of dermatoses in the elderly and accurate diagnosis of these dermatoses, especially in the presence of multiple comorbidities and different drug regimens, will help in appropriate drug selection and improved quality of life of these patients.

Keywords: Cutaneous pathology; elderly; chronic illness.

1. INTRODUCTION

Long-term care residents for older people are a vulnerable demographic in the city that grows as the population ages. The population of the elderly worldwide has suffered from swift structural changes. Many countries of the world seems to be in the fourth stage of the population cycle, where both the rates of birth and mortality are low and population growth is slowing down or even ending especially in the developed parts of the world [1–3]. This demographic transition occurred over a long period in developed countries, but only a short period of time in sub-Saharan Africa. The increasing elderly population in sub-Saharan Africa has led to an increased demand for health and social services. Skin pathologies of the elderly subjects are varied and display diagnosis, management, and follow-up issues [4,5]. Conditions such as cellulitis, hyperpigmented lesions, seborrheic dermatitis and other dermatologic complications among the elderly have been reported in studies done in many countries [5,6–8]; Some of the most common factors associated with these complications ranges from the use of skin care products, personal hygiene, and underlying disease conditions. However, the skin diseases of aged patients have been documented in Nigeria [9,10]. The purpose of this study was to describe the features of cutaneous pathology in the elderly patients at the Department of Dermatology in University of Port Harcourt Teaching Hospital, Rivers state, Nigeria.

2. METHODS

2.1 Study Area

The study was carried out in the University of Port Harcourt Teaching Hospital (UPTH). The hospital is a 700-bed tertiary hospital located in Port Harcourt, Rivers state, Nigeria. The hospital plays host to a variety of medical specialists and serves as a referral center for other health care facilities in the state and neighbouring states as well.

2.2 Study Population

The study population included individuals aged 60 years and above presenting to UPTH for medical attention and are admitted to the wards after presentation.

2.3 Sample and Sampling

A purposive cross-sectional sampling of 126 elderly patients that were admitted to the different wards of the hospital within a 3-month period was carried out.

2.4 Data Collection

A PROFORMA data collection sheet was used to collate demographic information, dermatological diagnoses and clinical history of chronic medical conditions from the subjects.

2.5 Data Analysis

The data collected was analysed using the SPSS v25 software at a 95% confidence interval and a p-value less than 0.05 was considered significant. The demographic characteristics and dermatological distributions were presented using frequencies and percentages. The association of dermatological lesions with gender and chronic illnesses was assessed using the Chi-square statistics.

3. RESULTS

Table 1 shows the demographic distribution of the study participants. Among the 126 individuals, 36 (28.6%) were between 60 – 64 years old, 46 (36.5%) were between 65 -74 years old, 36 (28.6%) were between 75 – 84 years old and 8(6.3%) were 85 years and above. The Male to Female ratio was 1.3:1 with 73 (57.9%) males and 53 (42.1%) females. Most of the participants

were married (71.4%), 33 (26.2%) were widowed and 2 (1.6%) were divorced.

Fig. 1 shows the prevalence of dermatologic manifestations among the participants was 51.4% as 73 of the individuals were found to have a dermatological anomaly.

Table 2 shows the distribution of the different dermatologic diagnoses between male and female subjects. Xerosis was found to be the most common dermatological diagnosis in both genders, followed by post bleaching syndrome in the females and seborrheic dermatitis in the male participants. The infective diagnosis includes pityriasis versicolor, tinea incognito, cellulitis and seborrheic dermatitis.

Table 3 shows the association of dermatologic lesions between male and female subjects. There was a significant association of the occurrence of dermatologic lesions with tattoos, photosensitivity and post-bleaching syndrome among female subjects only ($p < 0.05$).

Table 4 shows the association of the number chronic illnesses and the occurrence of the dermatologic lesions. Idiopathic guttate hypomelanosis was found to be significantly higher ($p<0.05$) among individuals with 4 -5 chronic illnesses.

4. DISCUSSION

Among the 126 individuals, 36 (28.6%) were between 60 and 64 years old, 46 (36.5%) were between 65 and 74 years old, 36 (28.6%) were between 75 and 84 years old and 8(6.3%) were 85 years and above. The Male to Female ratio was 1.3:1 with 73 (57.9%) males and 53 (42.1%) females. Most of the participants were married (71.4%), 33 (26.2%) were widowed and 2 (1.6%) were divorced. The demographic characteristics of the study participants in the current study is consistent with the distribution of individuals above 60 that are admitted to hospital wards in tertiary healthcare centers in southern Nigeria as reported in other studies[11,10,12–13]. The proportion of elderly patients above the age of 75 years old that are typically admitted to hospitals tend to be lower in comparisons to individuals below the age of 75 years old[14–16].

The prevalence of dermatologic lesions among the participants was 51.4% as 73 of the individuals were found to have a dermatological anomaly. This is in contrast with the reports of Onyekonwo in Enugu which reported a relatively lower prevalence of dermatoses 35% among geriatric patients [17]. However, the distribution of the different dermatological diagnoses between male and female subjects was not statistically significant. This is consistent with the findings of Onyekonwu [17]. Xerosis was found to be the most common dermatological diagnosis in both genders, followed by post bleaching syndrome in the females and seborrheic dermatitis in the male participants. Xerosis in older adults is multifactorial: intrinsic changes in keratinization and lipid content, use of diuretics and similar medications, and overuse of heaters or air conditioners all contribute. Xerosis causes pruritus, which then leads to excoriations and risk of skin infections [14,15,18]. However, the finding of the current study is in contrast with the findings of a similar study that reported papulo-squamous disorders were the commonest dermatoses seen in 40% of geriatric patients. This was followed by infections and infestations (33.3%) [4]. A previous study highlights the role of atopy as a risk factor for xerosis in the elderly [11]. According to an epidemiological study in primary care in Germany using a questionnaire completed by patients aged 50–75 years, the lifetime prevalence of reported atopy was low, with about 4.3, 8 and 5.5% of patients, respectively [13].

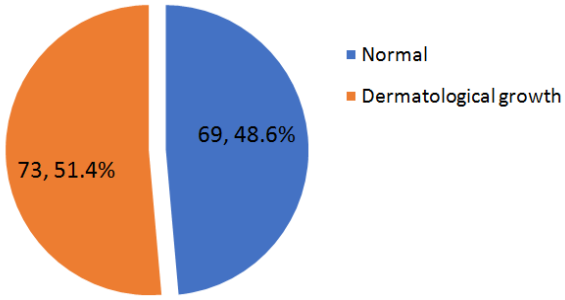

Fig. 1. Distribution of Dermatologic Growth in subjects

Table 1. Sociodemographic Distribution of Respondents

Sociodemographic	Frequency n=126, (%)
Age	
60-64 years	36 (28.6)
65- 74 years	46 (36.5)
75-84 years	36 (28.6)
85 and above	8 (6.3)
Sex	
Male	73 (57.9)
Female	53 (42.1)
Marital Status	
Single	1 (0.8)
Married	90 (71.4)
Widowed	33 (26.2)
Divorced	2 (1.6)
Occupation (N=124)	
Retired	44 (35.5)
Farming/Fishing	25 (19.4)
Trader/Business	19 (15.3)
House wife	11 (8.9)
Mechanic/Technician	4 (3.2)
Security personnel	3 (2.4)
Engineer	2 (1.6)
Medical Doctor	2 (1.6)
Civil Servant	2 (1.6)
Others	12 (9.7)
State of origin (N=125)	
Rivers	65 (52.0)
Imo	18 (14.4)
Delta	16 (12.8)
Abia	8 (6.4)
Akwaibom	6 (4.8)
Bayelsa	2 (1.6)
Kogi	2 (1.6)
Ondo	2 (1.6)
Others	6 (4.8)
Economic dependency	
Self	71 (56.3)
Family	50 (39.7)
Self and Family	4 (3.2)
Govt/Institution	1 (0.8)
Social/Family Support	
Yes	124 (98.4)
No	2 (1.6)
Resident with	
Spouse	72 (57.1)
Daughter	21 (16.7)
Son	13 (10.3)
Alone	12 (9.5)
Children	4 (3.2)
Grandson	2 (1.6)
Other relatives	1 (0.8)
Care givers	1(0.8)

Table 2. Distribution of Dermatological diagnoses by gender in respondents

Dermatological Diagnoses	Male n =73, (%)	Female n =53(%)
Erythematous Skin over the Supra-gastric area plus breast abscess	0(0.00)	1(1.89)
Erythroderma (wide spread exfoliative dermatitis)	1(1.37)	0(0.00)
Numerous IGH	1(1.37)	0(0.00)
Pityriasis Versicolor	1(1.37)	0(0.00)
Tinea Incognito	0(0.00)	1(1.89)
Pityriasis Rosea	0(0.00)	1(1.89)
Urticaria	1(1.37)	0(0.00)
Wide spread Bullae	0(0.00)	1(1.89)
Planter melanosis	2(2.74)	0(0.00)
Keloids	1(1.37)	1(1.89)
Washerman sign	2(2.74)	0(0.00)
Ichthyosis	0(0.00)	2(3.77)
Cellulitis	2(2.74)	0(0.00)
Hyperpigmented lesions	3(4.11)	3(5.66)
Seborrheic dermatitis	6(8.22)	0(0.00)
Post bleaching syndrome	0(0.00)	8(15.09)
Xerosis	22(30.14)	33(62.26)

Table 3. Association of dermatological lesions and gender

Dermatological lesions	Total N (%)	Male n (%)	Female n (%)	p-value
Xerosis				
No	73 (57.9)	40 (54.8)	33 (62.3)	0.402
Yes	53 (42.1)	33 (45.2)	20 (37.7)	
Rash				
No	108 (85.7)	63 (86.3)	45 (84.9)	0.825
Yes	18 (14.3)	10 (13.7)	8 (15.1)	
Itching				
No	99 (78.6)	55 (75.3)	44 (83.0)	0.381
Yes	27 (21.4)	18 (24.7)	9 (17.0)	
Xanthomas				
No	125 (99.2)	72 (98.6)	53 (100.0)	0.579
Yes	1 (0.8)	1 (1.4)	0 (0.0)	

Dermatological lesions	Total N (%)	Male n (%)	Female n (%)	p-value
Nevi				
No	67 (53.2)	42 (57.5)	25 (47.2)	0.250
Yes	59 (46.8)	31 (42.5)	28 (52.8)	
Seborrhoeic Keratosis				
No	111 (88.1)	66 (90.4)	45 (84.9)	0.346
Yes	15 (11.9)	7 (9.6)	8 (15.1)	
Dermatosis Papulosa Nigra				
No	58 (46.0)	37 (50.7)	21 (39.6)	0.219
Yes	68 (54.0)	36 (49.3)	32 (60.4)	
Wrinkles				
No	67 (53.2)	40 (54.8)	27 (50.9)	0.669
Yes	59 (46.8)	33 (45.2)	26 (49.1)	
Melasma/Hyperpigmentation				
No	90 (71.4)	57 (78.1)	33 (62.3)	0.052
Yes	36 (28.6)	16 (21.9)	20 (37.7)	
Idiopathic guttate hypomelanosis				
No	53 (42.1)	32 (43.8)	21 (39.6)	0.636
Yes	73 (57.9)	41 (56.2)	32 (60.4)	
Actinic keratosis				
No	125 (99.2)	72 (98.6)	53 (100.0)	0.579
Yes	1 (0.8)	1 (1.4)	0 (0.0)	
Signs of post-bleaching syndrome				
No	109 (86.5)	67 (91.8)	42 (79.2)	0.042*
Yes	17 (13.5)	6 (8.2)	11 (20.8)	
Telangiectasia				
No	121 (96.0)	71 (97.3)	50 (94.3)	0.351
Yes	5 (4.0)	2 (2.7)	3 (5.7)	
Acteotic eczema				
No	122 (96.8)	70 (95.9)	52 (98.1)	0.438
Yes	4 (3.2)	3 (4.1)	1 (1.9)	
Ulcer				
No	100 (79.4)	59 (80.8)	41 (77.4)	0.635
Yes	26 (20.6)	14 (19.2)	12 (22.6)	

Dermatological lesions	Total N (%)	Male n (%)	Female n (%)	p-value
Photosensitivity				
No	120 (95.2)	72 (98.6)	48 (90.6)	0.047*
Yes	6 (4.8)	1 (1.4)	5 (9.4)	
Surgical scar				
No	93 (73.8)	51 (69.9)	42 (79.2)	0.237
Yes	33 (26.2)	22 (30.1)	11 (20.8)	
Scarification marks				
No	112 (88.9)	68 (93.2)	44 (83.0)	0.074
Yes	14 (11.1)	5 (6.8)	9 (17.0)	
Tattoo				
No	119 (94.4)	73 (100.0)	46 (86.8)	0.002*
Yes	7 (5.6)	0 (0.0)	7 (13.2)	
Others				
No	91 (72.2)	50 (68.5)	41 (77.4)	0.273
Yes	35 (27.8)	23 (31.5)	12 (22.6)	

Table 4. Association between chronic diseases and the dermatological lesions

Dermatological lesion	No of Chronic diseases n (%)			p-value
	0-1	2-3	4-5	
Xerosis				
No	15 (65.2)	50 (58.1)	8 (47.1)	0.515
Yes	8 (34.8)	36 (41.9)	9 (52.9)	
Rash				
No	19 (82.6)	73 (84.9)	16 (94.1)	0.583
Yes	4 (17.4)	13 (15.1)	1 (5.9)	
Itching				
No	19 (82.6)	66 (76.7)	14 (82.4)	0.845
Yes	4 (17.4)	20 (23.3)	3 (17.6)	
Xanthomas				
No	23 (100.0)	85 (98.8)	17 (100.0)	1.000
Yes	0 (0.0)	1 (1.2)	0 (0.0)	
Nevi				
No	12 (52.2)	46 (53.3)	9 (52.9)	0.994
yes	11 (47.8)	40 (46.5)	8 (47.1)	

Dermatological lesion	No of Chronic diseases n (%)			p-value
	0-1	2-3	4-5	
Seborrhoeic Keratosis				
No	21 (91.3)	74 (86.0)	16 (94.1)	0.764
Yes	2 (8.7)	12 (14.0)	1 (5.9)	
Dermatosis Papulosa Nigra				
No	12 (52.2)	38 (44.2)	8 (47.1)	0.789
Yes	11 (47.8)	48 (55.8)	9 (52.9)	
Wrinkles				
No	15 (65.2)	42 (48.8)	10 (58.8)	0.332
Yes	8 (34.8)	44 (51.2)	7 (41.2)	
Melasma/Hyperpigmentation				
No	14 (60.9)	64 (74.4)	12 (70.6)	0.432
Yes	9 (39.1)	22 (25.6)	5 (29.4)	
Idiopathic guttate hypomelanosis				
No	15 (65.2)	32 (37.2)	6 (35.3)	
Yes	8 (34.8)	54 (62.8)	11 (64.7)	0.045*
Actinic keratosis				
No	23 (100.0)	86 (100.0)	16 (94.1)	0.135
yes	0 (0.0)	0 (0.0)	1 (5.9)	
Signs of post-bleaching syndrome				
No	19 (82.6)	74 (86.0)	16 (94.1)	
yes	4 (17.4)	12 (14.0)	1 (5.9)	0.614
Telangiectasia				
No	21 (91.3)	83 (96.5)	17 (100.0)	0.346
Yes	2 (8.7)	3 (3.5)	0 (0.0)	
Acteotic eczema				
No	23 (100.0)	83 (96.5)	16 (94.1)	0.553
Yes	0 (0.0)	3 (3.5)	1 (5.9)	
Ulcer				
No	16 (69.6)	72 (83.7)	12 (70.6)	0.179
Yes	7 (30.4)	14 (16.3)	5 (29.4)	
Photosensitivity				
No	21 (91.3)	83 (96.5)	16 (94.1)	0.344
Yes	2 (8.7)	3 (3.5)	1 (5.9)	

Dermatological lesion	No of Chronic diseases n (%)			p-value
	0-1	2-3	4-5	
Surgical scar				
No	19 (82.6)	63 (73.3)	11 (64.7)	0.429
yes	4 (17.4)	23 (26.7)	6 (35.3)	
Scarification marks				
No	21 (91.3)	75 (87.2)	16 (94.1)	0.754
Yes	2 (8.7)	11 (12.8)	1 (5.9)	
Tattoo				
No	20 (87.0)	82 (95.3)	17 (100.0)	0.205
Yes	3 (13.0)	4 (4.7)	0 (0.0)	
Others				
No	18 (78.3)	60 (69.8)	13 (76.5)	0.753
Yes	5 (21.7)	26 (30.2)	4 (23.5)	

The association of dermatological lesions between male and female subjects, there was a significant association of the occurrence of dermatological lesions with tattoos, photosensitivity and post-bleaching syndrome among female subjects only ($p < 0.05$). Idiopathic guttate hypomelanosis was found to be significantly higher ($p<0.05$) among individuals with 4-5 chronic illnesses. Chronic illnesses include hypertension, diabetes mellitus, chronic liver disease, malignancies and chronic kidney disease. Skin diseases have been classified by some authors as the second most common communicable diseases in the elderly population [16,17]. Our study showed that infections and infestations were the most common dermatoses among the elderly patients presenting to our clinic. This finding is similar to that of some studies in southwest Nigeria who found that infections were the most common skin dermatoses among their elderly population [12-16]. This finding is expected, especially because of changes that occur in the elderly patients including impaired skin barrier thus reducing the skin as a first line of defense against microorganisms. Aging also leads to a reduction in the resident microflora of the epidermis, further diminishing the skin's defense mechanism. Interplay between these factors and the tropical environment where our patients reside may increase tendency towards infections[11,13,16].

5. CONCLUSION

Xerosis is highly prevalent in the elderly in Rivers state. Infections are a major cause of dermatoses in the elderly and accurate diagnosis of these dermatoses, especially in the presence of multiple comorbidities and different drug regimens, will help in appropriate drug selection and management of these patients.

CONSENT AND ETHICAL APPROVAL

Ethical approval to carry out the study was obtained from the Research and Ethics Committee of the University of Port Harcourt Teaching Hospital before commencing the study. A willing written informed consent was obtained from each participant before they were included into the study.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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