

Skin Health and Hygiene Product Use in Geriatric Populations: Risks and Reactions

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Abstract:

Background: With aging, the skin undergoes physiological changes, becoming thinner, drier, and more sensitive. The use of soaps and creams, while essential for hygiene and skin care, may contribute to or exacerbate dermatological issues in elderly individuals due to altered skin barrier function and product sensitivity.

Objective: To assess the prevalence, types, and contributing factors of skin complications associated with the use of soaps and creams among elderly individuals.

Methods: A cross-sectional observational study was conducted at Advance Skin, Hair & Laser Clinic, Patna, Bihar, in India among 120 elderly participants aged 60 years and above, residing in urban and semi-urban areas over a period of 6 months. Data were collected using a structured questionnaire covering demographic details, skin care practices, types of soaps and creams used, frequency of use, and any skin complications experienced. Clinical examination was also conducted to identify dermatological conditions.

Results: Out of 120 participants, 42 (35%) reported skin complications linked to the use of soaps and/or creams. The most common issues included dryness (25%), itching (18%), erythema (11%), and allergic dermatitis (7%). Harsh soaps with strong fragrances and alcohol-based creams were more frequently associated with adverse reactions. Women reported a higher incidence of complications compared to men. Infrequent use of moisturizers and frequent washing with alkaline soaps were identified as significant contributing factors ($p < 0.05$).

Conclusion: A substantial proportion of elderly individuals experience skin complications related to the use of common soaps and creams. There is a need for increased awareness about age-appropriate skin care products and practices to prevent dermatological issues in this vulnerable population. Clinicians should provide guidance on gentle, non-irritating skin care regimens tailored to geriatric needs.

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Introduction

Aging is accompanied by numerous physiological changes, and the skin—being the largest organ of the body—is one of the most visibly and functionally affected. With advancing age, the skin undergoes thinning of the epidermis, decreased sebaceous gland activity, reduced elasticity, and diminished barrier function [1]. These changes make the skin more susceptible to dryness, irritation, and allergic reactions, especially in response to external agents such as soaps and creams commonly used for hygiene and moisturization [2].

Personal hygiene practices, particularly bathing and moisturizing, are integral to maintaining skin health. However, not all topical products are suitable for elderly skin. Soaps, especially those containing strong detergents, fragrances, and high pH levels, can strip the skin of its natural oils, leading to xerosis (abnormal dryness), pruritus (itchiness), and even eczematous changes. Similarly, certain creams may contain preservatives, alcohols, or allergens that can

provoke contact dermatitis or worsen pre-existing dermatologic conditions [3,4].

In many households and care settings, elderly individuals often continue to use the same commercial soaps and creams used by the general population, without consideration for their specific dermatological needs. Moreover, there is limited awareness regarding the selection of mild, pH-balanced, and fragrance-free products tailored for aging skin. This can contribute to the underreporting and mismanagement of preventable skin complications [5,6].

Despite the widespread use of topical products among older adults, there is a paucity of research focused on their dermatological impacts in this age group. Most studies have concentrated on pediatric or general adult populations, overlooking the geriatric demographic that is physiologically more vulnerable [7].

This study aims to bridge this gap by investigating the prevalence and nature of skin complications associated with soap and cream usage among elderly individuals. It also seeks to identify the common types of products used, patterns of use, and demographic or behavioral factors contributing to adverse skin reactions.

Methods

This observational cross-sectional study was carried out at Advance Skin, Hair & Laser Clinic, Patna, Bihar, India, over a period of six months among elderly individuals aged 60 years and above in both urban and semi-urban areas. A total of 120 participants were selected using convenience sampling from community health camps, outpatient departments, and elderly care centres. Participants included were those who regularly used at least one type of soap and/or cream for personal hygiene or skin care.

Data were collected using a pre-designed and pre-tested questionnaire administered through face-to-face interviews. The questionnaire gathered information on demographic details, type and frequency of soap and cream use, bathing habits (including water temperature and frequency), and any skin-related complaints experienced after product use. It also recorded relevant medical history such as the presence of diabetes, hypertension, or known skin allergies.

Each participant underwent a brief clinical examination of the skin to assess for signs of irritation, dryness, rashes, redness, or allergic reactions. The products being used by participants were reviewed and categorized into mild, moderate, or harsh based on their ingredients, pH levels, and presence of fragrances or alcohol.

Ethical approval was obtained prior to the study, and written informed consent was taken from all participants. All data were kept confidential and used solely for research purposes. Statistical analysis was performed using SPSS software, with appropriate tests applied to find associations between product use and dermatological complications.

Results

A total of 120 elderly individuals participated in the study, with a mean age of 68.4 ± 6.2 years. Of these, 52.5% were female and 47.5% male. The majority resided in semi-urban areas (63.3%), and 72% had no formal dermatological education or awareness regarding skin-appropriate hygiene products.

Prevalence of Skin Complications: 42 participants (35%) reported skin-related issues potentially linked to the use of soaps and/or creams. The most commonly reported complaints were dryness, itching, and redness.

Table 1: Demographic Characteristics of Participants (N=120)

Variable	Frequency (%)
Age Group (Years)	
60–65	40 (33.3%)
66–70	38 (31.7%)
71–75	27 (22.5%)
>75	15 (12.5%)
Gender	
Male	57 (47.5%)
Female	63 (52.5%)
Residence	
Urban	44 (36.7%)
Semi-urban	76 (63.3%)

Table 2: Types of Soaps Used

Type of Soap	Frequency (%)
Mild (glycerin-based)	32 (26.7%)
Moderate (lightly scented)	41 (34.2%)
Harsh (antiseptic/alkaline)	47 (39.1%)

Table 3: Types of Creams Used

Type of Cream	Frequency (%)
Emollient-based	48 (40%)
Alcohol-based	31 (25.8%)
Herbal-based	29 (24.2%)
Medicated	12 (10%)

Table 4: Frequency of Product Use

Usage Frequency	Soap Use (%)	Cream Use (%)
Daily	95 (79.2%)	61 (50.8%)
2–3 times/week	21 (17.5%)	42 (35%)
Occasionally	4 (3.3%)	17 (14.2%)

Table 5: Reported Skin Complaints

Complaint	Frequency (%)
Dryness	30 (25%)
Itching	22 (18.3%)
Redness/Erythema	13 (10.8%)
Rashes	9 (7.5%)
Allergic Dermatitis	5 (4.2%)
No Complaints	78 (65%)

Table 6: Association Between Soap Type and Skin Complaints

Soap Type	Skin Complications Present	No Complications	Total
Mild	4	28	32
Moderate	12	29	41
Harsh	26	21	47

Table 7: Association Between Cream Type and Skin Complaints

Cream Type	Skin Complications Present	No Complications	Total
Emollient-based	8	40	48
Alcohol-based	18	13	31
Herbal-based	9	20	29
Medicated	7	5	12

Table 8: Gender-wise Distribution of Skin Complaints

Gender	With Complaints	Without Complaints	Total
Male	15	42	57
Female	27	36	63

Table 9: Water Temperature Used for Bathing and Skin Complaints

Water Temperature	Skin Complications	No Complications	Total
Hot	26	21	47
Lukewarm	10	35	45
Cold	6	22	28

Table 10: Co-morbidities and Skin Reactions

Co-morbidity	With Skin Issues	Without Skin Issues	Total
Diabetes	18	16	34
Hypertension	12	21	33
None	12	41	53

Discussion

The present study explored the prevalence and contributing factors of skin complications associated with soap and cream use among elderly individuals. With 35% of the study population reporting skin-related issues, the findings highlight a significant concern regarding dermatological health in older adults, especially in relation to personal care products [8].

Our results showed that dryness, itching, and redness were the most common complaints,

consistent with previous research indicating increased susceptibility to xerosis and irritant dermatitis in aged skin [9]. The higher prevalence of skin reactions among users of harsh soaps (55.3% among users) is in line with established dermatological understanding that alkaline, antiseptic, and heavily perfumed soaps can disrupt the already fragile skin barrier in the elderly. Mild, pH-balanced soaps demonstrated a notably lower association with complications, reinforcing the importance of product selection [10].

Similarly, alcohol-based creams were significantly associated with adverse skin reactions (58.1% of users), likely due to their drying effects. In contrast, emollient-based creams were associated with fewer complaints, suggesting their protective and hydrating benefits are more suitable for geriatric skin [11]. Gender-wise, females showed a slightly higher rate of skin complaints, potentially reflecting greater product use or more frequent reporting. This gender difference, although not statistically tested in this study, aligns with literature suggesting women may have more sensitive skin and a higher tendency to use multiple skincare products [12,13].

An important observation was the role of water temperature in bathing. Hot water use was strongly linked to complaints of dryness and itching, which is consistent with the knowledge that hot water strips natural oils from the skin. These findings emphasize the importance of educating the elderly on using lukewarm water during bathing to maintain skin integrity [14]. Co-morbid conditions, particularly diabetes, were more commonly associated with skin complaints. Diabetic individuals often suffer from poor skin hydration and delayed healing, increasing the risk of dermatological complications when exposed to irritants [15].

This study highlights a clear gap in awareness and guidance regarding appropriate skincare in the elderly. There is an urgent need for geriatric health programs to incorporate dermatological education and promote age-friendly skincare products.

Conclusion

This study underscores the significant prevalence of skin complications among the elderly due to inappropriate use of soaps and creams. With 35% of participants reporting dermatological issues such as dryness, itching, and redness, it becomes evident that product choice plays a critical role in geriatric skin health. The findings reveal that harsh soaps and alcohol-based creams are major contributors to adverse skin reactions in older adults, while mild, emollient-based alternatives are comparatively safer. Factors such as hot water bathing, existing comorbidities (especially diabetes), and lack of awareness about skin-friendly products further exacerbate these issues. Given the physiological vulnerability of aging skin, it is imperative to raise awareness about age-appropriate hygiene practices and promote the use of gentle, pH-balanced, and fragrance-free skincare products. Regular dermatological assessments and targeted public health interventions can greatly enhance the quality of life for elderly individuals by preventing avoidable skin discomfort and complications.

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