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Original Research Article

Analyzing gaps in knowledge, attitude, and behavioral practices related to seborrhoeic dermatitis among medical undergraduate students

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ABSTRACT

Background: Seborrhoeic dermatitis (SD) is a prevalent, chronic, inflammatory skin condition, primarily affecting areas rich in sebaceous glands, yet awareness of its etiology, management, and associated psychosocial impact remains limited. This study aimed to assess the knowledge, attitudes, and practices (KAP) regarding seborrhoeic dermatitis among undergraduate medical students.
Methods: A cross-sectional observational study was conducted from January to March 2024 at Pt. B. D. Sharma PGIMS, Rohtak, involving 379 medical undergraduates (aged 18–30). Data were collected via a structured, self-administered, expert-validated questionnaire covering general information, knowledge, attitudes, and practices regarding SD. Institutional Ethics Committee approval was obtained. Data were analyzed in Excel using descriptive statistics (mean±SD for continuous and percentages for categorical variables).
Results: Among participants, 69.9% had experienced SD, with 48.5% currently affected. Knowledge gaps were evident: only 21.4% identified SD as a chronic inflammatory condition, and 28.5% recognized Malassezia as the cause. While fungal involvement was widely acknowledged, specific understanding was limited. Only 10.9% were satisfied with current treatments, and 48.2% believed oiling was beneficial, despite contrary evidence. Practices such as towel sharing (18.6%) and frequent scalp scratching (63.8%) were common, potentially worsening the condition.
Conclusions: The study identified significant gaps in knowledge, attitudes, and practices regarding SD among medical undergraduates. Educational interventions targeting these gaps are necessary to improve awareness, debunk myths, and promote evidence-based management strategies for SD.

Keywords: Seborrhoeic dermatitis, Knowledge, Attitude, Practice, Fungal, Malassezia

INTRODUCTION

Seborrhoeic dermatitis (SD) is a common, chronic, relapsing inflammatory skin disorder affecting sebaceous gland-rich areas like the scalp, face, and upper trunk.[1] While its global prevalence is ~5%, the milder, non-inflammatory form—dandruff—affects up to 50% of the population.[2,3] SD is strongly associated with Malassezia yeast, has a higher prevalence in males (suggesting androgen involvement), and is more common in individuals with neurological, psychiatric, or immunocompromised conditions such as Parkinsonism and HIV.[4,5] Clinical presentations range from erythematous, greasy, flaky lesions to folliculitis and blepharitis.[6] Despite its high prevalence and impact on quality of life, awareness about its etiology and management remains limited, with many relying on self-treatment. Standard therapies include topical antifungals, anti-inflammatories, keratolytics, and systemic agents for severe cases.

With this study, we assessed the level of knowledge, attitudes, and practices toward SD, explored how the knowledge influenced practices, and whether attitudinal factors mediate the relationship.

METHODS

The study was conducted among undergraduate medical students of Pt. B. D. Sharma, PGIMS, Rohtak in Haryana, from January to March 2024. The study was initiated after obtaining approval on the study protocol by the Institutional Ethics Committee of Pt. B. D. Sharma PGIMS, Rohtak (BREC/23/522 dated: 17-10-2023). The trial was registered with the Clinical Trials Registry of India (CTRI/2024/01/061276). Data collection was conducted using a structured, self-administered questionnaire specifically developed for this study. The study population included 18–30 years medical undergraduates from different years. Data collection was conducted using a structured, self-administered questionnaire specifically developed for this study.

The questionnaire consisted of 30 items divided into four major sections: general information, knowledge related to SD, attitudes towards SD, and practices concerning personal hygiene and SD management. The general section (11 questions) captured demographic details, personal and family history of SD, frequency of symptoms, and perceived impact on quality of life. The knowledge section (8 questions) assessed awareness of SD etiology, causative microorganisms (e.g., *Malassezia* spp.), commonly affected body areas, risk factors, associated systemic conditions, signs and symptoms, and available treatment modalities. The attitude section (9 questions) evaluated beliefs and perceptions, satisfaction with previous treatments, home remedies, common myths, and behaviours such as sharing towels or the use of hairstyling tools.

The practice section (10 questions) addressed hygiene routines, including hair care, shampooing frequency, and use of topical products. Response options were designed to capture both quantitative and qualitative aspects of the participants' knowledge, attitudes, and practices. Some questions were structured as binary (yes/no) responses, while others employed a 5-point Likert scale ranging from “strongly disagree” to “strongly agree” to assess perceptions and attitudes. Multiple-choice questions with single or multiple correct options were used in the knowledge section to evaluate factual understanding of SD.

The questionnaire underwent content validation by experts from the Departments of Pharmacology and Dermatology to ensure clarity, relevance, and comprehensiveness. Informed consent was obtained from all participants before questionnaire administration. Confidentiality and anonymity of respondents were strictly maintained throughout the study.

Sample size

The sample size was determined based on a 95% confidence level, 5% expected proportion, and 4% margin of error. After applying the finite population correction for a population size of 750, the final sample size was calculated as 334.

Study methodology

The study's nature and objectives were explained to all students present in the classroom on the day of the survey. Informed consent was obtained from those willing to participate, and only those who provided consent were included in the study. For data collection, the structured questionnaire was distributed to the study participants.

Data analysis

The collected data were entered into Microsoft Excel and analyzed. Descriptive statistics were used to summarize the data: continuous variables such as age were expressed as mean±standard deviation, while categorical variables like gender and responses to questionnaire items were presented as frequencies and percentages.

RESULTS

Demographic characteristics and general questions

A total of 379 participants were recruited. Of the total participants, 56% were female and 44% were male. Students aged 18-29 years participated in the study, with the average age of 21.08±2.80 years. The majority (91%) were residing in hostel accommodations, while 9% were living at home. 166 (43.8%) experienced an increased frequency of dandruff after shifting to hostel. A positive family history of dermatological conditions was reported by 10% of respondents, whereas 90% reported no such history. Furthermore, 302 (79.7%) did not have a family history of dandruff, and 77 (20.3%) had a family history. 69.92% of students had SD in the past, and 48.54% were currently suffering from dandruff. 76.5% of students do not use home remedies, and 23.5% students use home remedies to treat dandruff. Home remedies included the usage of coconut oil, curd, lemon, honey, aloe vera gel, onion juice, fuller earth powder, and boiled neem leaves water. 27 (12.8%) females out of 211 were suffering from SAHA syndrome. The responses to general questions are depicted in Table 1.

Knowledge of seborrhoeic dermatitis

8 questions were framed to assess the knowledge of students regarding SD. Out of 379 students, only 21.4% knew the definition of dandruff i.e. chronic relapsing inflammatory skin condition. The majority (75.2%) knew that a fungus causes dandruff, but only 28.5% knew that the causative microorganism is *Malassezia*. Only 5.3% strongly agreed about the association of SD with any other

skin conditions. A few multiple-choice questions were asked regarding affected sites, signs and symptoms, and risk factors. The responses are represented in Figure 1.

Attitude

A total of 9 questions were asked to assess the attitude regarding SD. 10.9% of students were completely satisfied with the current treatment for dandruff. Other questions are tabulated in Table 2.

Practice

A total of 10 questions were framed to assess what type of behavioural practices students preferred in general for maintaining personal hygiene and treating dandruff. 13.8% of students oil their scalp daily, and 25.9% of students prefer to apply oil overnight. Nearly half of the students, 48.2%, prefer to wash their hair twice per week. Nearly half, 45.7 %, prefer to wash their towel once a week. A few questions were framed based on a 5-point Likert scale and are tabulated in Table 3.

Table 1: General questions.

Questions	Always (%)	Often/frequently (%)	Sometimes (%)	Rarely/seldom (%)	Never (%)
Frequency of dandruff	11	18.9	40.1	14.7	15.03
Acne associated with dandruff	3.1	3.9	19.2	11.9	61.7
Hair fall associated	14.5	16.1	27.2	14.2	27.9
Affect quality of life	8.2	30	15.8	27.2	18.7
Seek medical help for dandruff	4.4	10.3	15.6	24.01	45.6

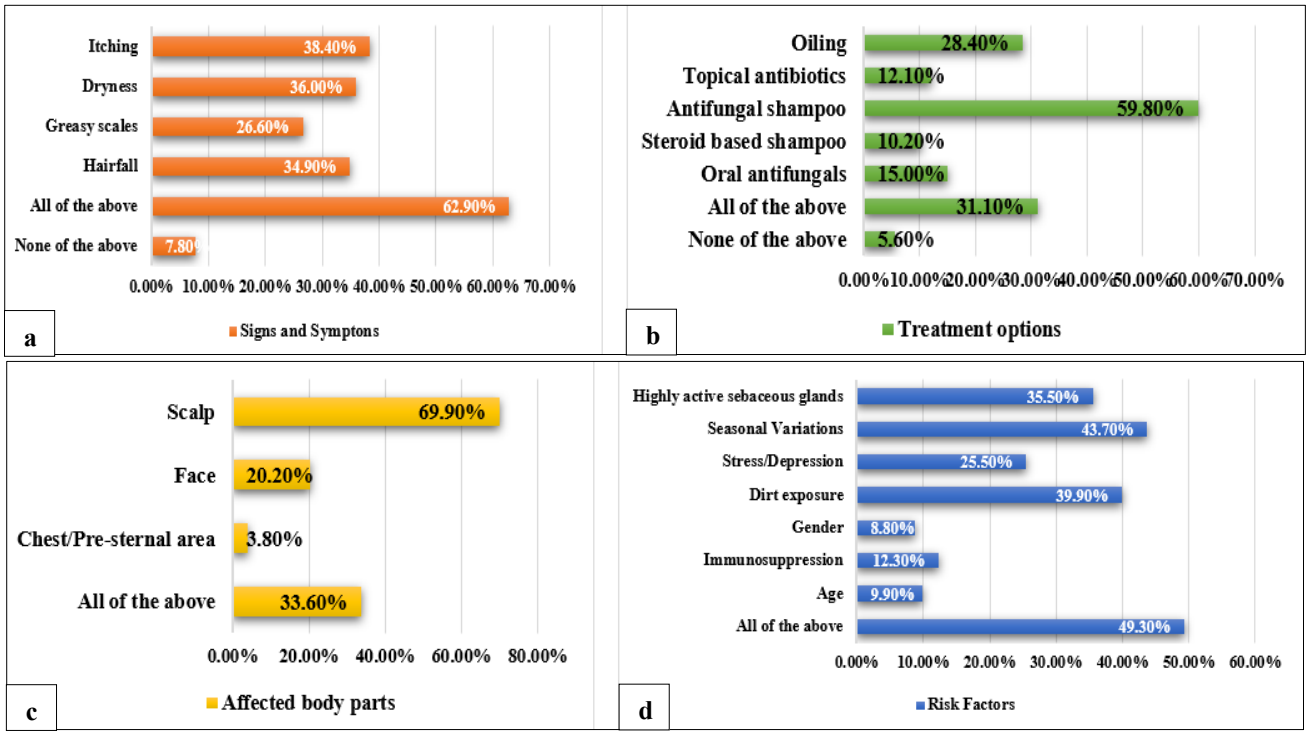

Figure 1: Knowledge regarding SD (a) affected body parts, (b) risk factors, (c) signs and symptoms, and (d) treatment option.

Table 2: Attitude.

Questions	Strongly agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)
Oiling is beneficial for dryness due to dandruff	7.3	48.2	30.7	11.6	2.2
Home remedies work better than allopathic treatment	3	29.1	53.6	10.8	3.5
Frequent hair wash will reduce the reoccurrence of dandruff	7.6	44.1	34.3	12.2	1.9

Continued.

Questions	Strongly agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)
Medicated antidandruff shampoo causes hair loss	5.1	35.6	45.3	11.3	2.7
Sharing of towels/combs with affected persons can cause dandruff	28.3	51.2	17	2.7	0.8
Dandruff affects the quality of life	10.5	50.3	34.4	3.8	1.1
Scalp dandruff can cause face & back acne	12.1	46	33.9	7	1.1
Hair styling/heating tools can aggravate symptoms	10.2	49.3	34.5	5.1	0.8

Table 3: Practice.

Questions	Always (%)	Often (%)	Sometimes (%)	Rarely (%)	Never (%)
Use antidandruff shampoo for dandruff	6.3	19.6	35.6	20.4	18.2
Use home remedies for dandruff	3.3	12.7	35.5	27.9	20.6
Share towel with others	0.3	4.6	13.7	18.9	62.6
Vigorous scalp scratching when itching	6.9	23.1	33.8	22	14.3
Prefer a haircut every time suffer from dandruff	2.7	12.6	27.4	22.2	35.1
Wash hair with vigorous scalp massage when suffering from dandruff	4.1	21.5	29.6	19.1	25.77

DISCUSSION

The purpose of the study was to evaluate undergraduate medical college students' knowledge, attitudes, and practices around SD. The findings emphasised the main gaps in knowledge, myths, and dandruff-related behavioural habits.

In the present study, 69.9% of students reported having experienced SD in the past, and 48.5% were currently affected, consistent with global estimates suggesting dandruff affects up to 50% of the population, while SD has a prevalence of approximately 5%. However, despite this high burden, only 21.4% of participants correctly identified SD as a chronic relapsing inflammatory skin condition, and only 28.5% recognized *Malassezia* as the causative organism. This aligns with findings from Raza et al who reported a low level of specific etiological knowledge among soldiers, despite high rates of dandruff (65.1%) in their study population.[7]

While 75.2% of participants were aware that a fungal pathogen is involved, the low recognition of *Malassezia* specifically suggests a superficial understanding. This is concerning, given the role of *Malassezia* in the pathophysiology of SD and its implications for treatment. In line with studies by Karakadze et al which highlight a genetic and immunological basis for susceptibility to *Malassezia*-induced inflammation, awareness of these mechanisms among future clinicians is crucial.[8]

Students' attitudes reflected mixed beliefs and persistent myths. Only 10.9% reported complete satisfaction with current treatment options. Around half the students (48.2%) agreed that oiling is beneficial for relieving dryness due to dandruff, despite evidence suggesting that excessive oiling can exacerbate SD by increasing scalp sebum, which promotes fungal proliferation. This is consistent with findings by Mukti et al who showed that traditional cosmetic products may lack standardization and contribute to recurrence.[6] Moreover, misconceptions about hair styling tools and shampoo use were also noted, highlighting the influence of anecdotal practices over evidence-based approaches.

Practice patterns also revealed areas of concern. Although 48.2% of students washed their hair twice a week, a significant number still practiced vigorous scalp scratching (63.8%) and shared towels (18.6%), which may contribute to mechanical irritation or fomite transmission. The ambiguous stance on the effectiveness of home remedies versus allopathic treatment (with 53.6% neutral responses) reflects a lack of clarity and confidence in clinical guidance, again pointing to the need for structured educational input.

Psychological impacts of dandruff were also reported by students, with 50.3% agreeing that SD affects quality of life. This observation aligns with studies by Szepietowski et al which demonstrated that SD negatively affects patients' emotional and psychosocial well-being, particularly among young adults and students.[9] In our study, 12.8% of female students reported symptoms consistent with SAHA syndrome, further emphasizing the systemic and cosmetic concerns associated with SD.

The findings were also consistent with a study by Sarac et al, which demonstrated a positive correlation between SD severity, perceived stress, and depressive symptoms.[10] Considering that undergraduate students are often exposed to academic stress, this highlights an important intersection between dermatological and psychological health.

Our study has several strengths, including a well-validated questionnaire, a representative sample size, and ethical

rigor. However, limitations include its single-center design and self-reported data, which may be influenced by recall or social desirability bias. Future studies involving multi-centric designs and objective clinical evaluations would enhance generalizability and accuracy.

CONCLUSION

This study highlighted the considerable prevalence of SD among medical undergraduates and identified critical gaps in their knowledge, attitudes, and practices. These findings underscore the need for curriculum-based dermatological awareness programs and public health education to ensure evidence-based management of SD and improved patient outcomes in future clinical practice.

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