

Original Research Article

ADOLESCENT DERMATOSES AND THEIR INFLUENCE ON THE QUALITY OF LIFE AMONG ADOLESCENTS - AN OBSERVATIONAL STUDY AT A TERTIARY CARE HOSPITAL

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ABSTRACT

Background: Dermatological conditions influence the quality of life in a markedly diverse manner, necessitating a thorough evaluation of how various skin diseases affect overall well-being. The Dermatology Life Quality Index (DLQI) serves as the most prevalent tool for assessing the quality of life among adolescents afflicted with skin conditions. This investigation was conducted to evaluate adolescent dermatoses and their influence on the quality of life among adolescents receiving care at a tertiary hospital.

Materials and Methods: A total of 298 participants aged between 10 to 19 years were recruited. Participants were undergone mucocutaneous examination. The impact of skin diseases on quality of life was evaluated through the use of the Dermatology Life Quality Index questionnaire (DLQI) and analysed.

Results: Infections, parasitic infestations and acne vulgaris are common skin disorders observed. The evaluation of participants' quality of life using the DQLI score revealed a small effect in 23.28% and 15.06%, a moderate effect in 16.43% and 10.95%, a very large effect in 10.95% and 5.47%, and an extremely large effect in 1.36% and 2.05%. No effect was noted in 9.58% and 4.79% of males and females, respectively

Conclusion: This emphasises the need of early detection and treatment of common dermatological diseases in teenagers. Educating teenagers is necessary because educational interventions are more effective than traditional therapy in long-term illness management.

Keywords: Dermatology Life Quality Index questionnaire (DLQI), Skin disorders, Adolescents, Acne vulgaris, Quality of life.

INTRODUCTION

Adolescence is a pivotal developmental phase bridging childhood and adulthood, characterized by profound hormonal, physical, and psychological changes. The onset of puberty introduces rapid physiological transitions that influence not only bodily functions but also emotional well-being and social relationships. During this stage, physical appearance assumes heightened importance, and even minor dermatological conditions can adversely affect self-esteem, social acceptance, and psychological health.^[1]

Adolescents constitute nearly one-fifth of India's population, making skin disorders in this age group a significant public health concern. Although many dermatological conditions are medically benign, their visibility particularly on the face and other exposed sites often causes embarrassment, anxiety, and social withdrawal, thereby affecting health-related quality of life (HRQoL).^[2] Common adolescent dermatoses include acne vulgaris, infections (bacterial, viral, fungal), infestations such as scabies and pediculosis, dermatitis, pigmentary abnormalities, and keratinization disorders.^[3,4] Dermatology Life Quality Index (DLQI), in particular, is the most extensively used measure for

evaluating the burden of dermatological diseases on daily activities, interpersonal interactions, leisure, work, school performance, and emotional well-being.^[5] Evidence indicates that conditions affecting visible regions, especially the face, exert a disproportionately high negative effect on quality of life, sometimes independent of clinical severity.^[6,7] In India, dermatological disorders account for a substantial proportion of outpatient visits among adolescents. However, regional data remain sparse, particularly from semi-urban and rural areas such as Sangareddy, Telangana. Local epidemiological studies are essential to delineate the spectrum of adolescent dermatoses, their prevalence, and their quality-of-life implications. Such insights can guide management strategies, counselling services, and preventive interventions, ensuring holistic dermatological care tailored to adolescents' unique psychosocial needs.^[8,9] Against this backdrop, the present observational study was undertaken at a tertiary care hospital in Sangareddy to determine the prevalence and pattern of adolescent dermatoses and to assess their impact on quality of life using the DLQI. By correlating specific conditions with quality-of-life domains, the study aims to identify priority areas for intervention and contribute to improved adolescent dermatological care.

MATERIALS AND METHODS

This observational study was carried out in the Department of DVL at Malla Reddy Medical College, Hyderabad, spanning from June 2023 to December 2024. A total of 298 participants aged 10 to 19 years were recruited from the outpatient department of DVL.

Inclusion Criteria: Adolescents aged 10–19 years, newly diagnosed dermatoses or those currently experiencing dermatological conditions, Individuals willing to provide informed consent.

Exclusion Criteria: Adolescents with systemic illnesses such as diabetes, renal, hepatic, or autoimmune disorders that could confound dermatological findings, developmental delay, psychiatric disorders, or cognitive impairment, which could interfere with questionnaire-based assessment, children who had received long-term immunosuppressive therapy and participants unwilling to participate or withdraw consent.

Written informed consent was obtained in writing from all participants, as well as from their parents, guardians, or teachers. The institutional ethics committee granted approval for the study protocol.

All study participants underwent comprehensive clinical and physical evaluations, which included a detailed medical history, family history, and dermatological examination. We evaluated the dermatological findings using established book criteria. We conducted relevant investigations to confirm the diagnosis in situations where the diagnosis was uncertain. We documented data on family history of dermatoses, details of previous therapeutic interventions, and instances of improper topical steroid usage. The impact of skin diseases on quality of life was evaluated through the use of the Dermatology Life Quality Index questionnaire (DLQI) (5). The data that was gathered underwent analysis utilizing SPSS version 32.0. Frequencies, percentages, means, and standard deviations were calculated for demographic variables and clinical findings. Associations between categorical variables were tested using the Chi-square test. Continuous variables were expressed as mean \pm standard deviation. A p-value of less than 0.05 was deemed statistically significant.

RESULTS

Table 1: Sociodemographic profile of study participants

Demographic data	Male (n=176)		Female (n=122)	
	Frequency	Percentage	Frequency	Percentage
Age (In years)				
10-12	34	19.31%	29	23.78%
13-15	52	29.54%	37	30.32%
16-19	90	51.13%	56	45.90%
Educational status				
Primary school	15	8.52%	10	8.19%
High school	93	52.84%	42	34.42%
Intermediate & above	57	32.38%	62	50.81%
Not studying	11	6.25%	08	6.55%
Family status				
Nuclear family	149	84.66%	78	63.93%
Joint family	27	15.34%	44	36.06%
Residence				
Rural	74	42.06%	59	48.36%
Urban	102	57.95%	63	51.63%

Table 2: Dermatoses pattern among study participants

Dermatoses		Male		Female	
		Frequency	Percentage	Frequency	Percentage
Infections (n=114)					
Bacterial	19	6.37%	14	4.70%	
Viral	10	3.36%	12	4.02%	
Fungal	34	11.40%	25	8.38%	
Parasitic infestations (n=39)					
Scabies	15	5.03%	09	3.02%	
Pediculosis	05	1.67%	10	3.35%	
Dermatitis (n=27)					
Contact dermatitis	05	1.67%	07	2.34%	
Perioral dermatitis	01	0.33%	01	0.33%	
Seborrheic dermatitis	04	1.34%	05	1.67%	
Pityriasis alba	01	0.33%	01	0.33%	
Lichen simplex chronicus	01	0.33%	01	0.33%	
Keratinisation disorders (n=16)					
Ichthyosis	04		03	1.0%	
Palmoplantar keratoderma	-	-	-	-	
Keratosis pilaris	02	0.67%	01	0.33%	
Phrynoderma	02	0.67%	02	0.67%	
Porokeratosis	01	0.33%	01	0.33%	
Pigmentary and papulosquamous disorders (n=17)					
Vitiligo	01	0.33%	01	0.33%	
Freckles	01	0.33%	02	0.67%	
Lentigens	-	-	-	-	
Psoriasis	03	1.0%	06	2.01%	
Pityriasis rosea	01	0.33%	01	0.33%	
Dermatopathia pigmentosa reticularis	-	-	01	0.33%	
Appendageal disorders (n=62)					
Acne	Grade -1	08	2.68%	15	5.03%
	Grade -2	05	1.67%	08	2.68%
	Grade -3	03	1.0%	05	1.67%
	Grade -4	01	0.33%	03	1.0%
	Hirsutism	-	-	01	0.33%
Hair – Alopecia areata		01	0.33%	01	0.33%
Nail	Onychomycosis	01	0.33%	-	-
	Paronychia	01	0.33%	02	0.67%
Sweat gland	Hyperhidrosis	01	0.33%	01	0.33%
	Bromhidrosis	01	0.33%	01	0.33%
	Miliaria	02	0.67%	01	0.33%
Dermal connective tissue disorders (n=4)					
Keloid		01	0.33%	-	-
Pseudoxanthoma elasticum		01	0.33%	01	0.33%
Cutis laxa		-	-	01	0.33%
NEVUS (n=6)					
Nevus depigmentosus		01	0.33%	-	-
Linear epidermal nevus		01	0.33%	01	0.33%
Nevus of ota		-	-	01	0.33%
Nevus sebaceous		-	-	01	0.33%
Compound nevus		01	0.33%	-	-
Cutaneous photosensitivity disorders (n=0)					
Polymorphic light eruption		-	-	-	-
Metabolic disorders (n=02)					
Porphyria cutanea tarda		01	0.33%	01	0.33%
Miscellaneous (n=10)					
Urticaria		02	0.67%	02	0.67%
Insect bite allergy		01	0.33%	01	0.33%
Xerosis		01	0.33%	01	0.33%
Plantar fissures		01	0.33%	01	0.33%

Infections were most common (n=114), with fungal infections leading (male 11.40%, female 8.38%), followed by bacterial (male 6.37%, female 4.70%) and viral (male 3.36%, female 4.02%). Parasitic infestations (n=39) were mainly scabies (male 5.03%, female 3.02%) and pediculosis (male 1.67%, female 3.35%). Dermatitis cases (n=27) included contact dermatitis (male 1.67%, female 2.34%) and seborrheic dermatitis (male 1.34%, female 1.67%). Keratinisation disorders (n=16) featured ichthyosis,

keratosis pilaris, and phrynoderma. Pigmentary and papulosquamous disorders (n=17) included psoriasis (male 1.0%, female 2.01%) and vitiligo.

Appendageal disorders (n=62) were dominated by acne, with higher female prevalence in all grades. Alopecia areata, onychomycosis, paronychia, hyperhidrosis, bromhidrosis, and miliaria were also noted. Dermal connective tissue disorders (n=4) were rare, including keloid, pseudoxanthoma elasticum, and cutis laxa. Nevus cases (n=6) included nevus

depigmentosus, epidermal nevus, and nevus of Ota. Metabolic disorders (n=2) were porphyria cutanea tarda. Miscellaneous conditions (n=10) included urticaria, insect bite allergy, xerosis, and plantar fissures. Overall, fungal infections and acne were the

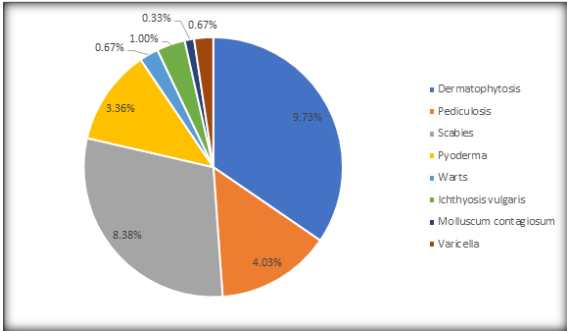
most frequent dermatoses, with certain conditions showing gender variation—scabies and fungal infections predominated in males, while pediculosis and higher grades of acne were more common in females (Table 2).

Table 3: Details of domains affected in the study participants

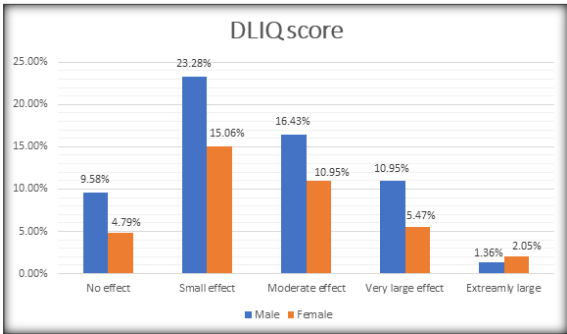
Domains affected	Dermatoses participants	
	Frequency	Percentages
Daily activities	78	26.17%
Leisure	64	21.47%
Symptoms and feelings	177	59.39%
Personal relationships	41	13.75%
Treatment	94	31.54%
Work place & School	53	17.78%
Not affected	20	6.71%

Table 4: Details of disorders with higher mean DLQI score in study participants

Disorders	Mean ± SD	Affected domains
Infections		
Dermatophytosis	9.98±3.9	Symptoms and feelings
Herpes simplex	6.01±1.55	Symptoms and feelings
pyoderma	7.82±2.31	Symptoms and feelings
Pityriasis versicolor	5.76±2.13	Symptoms and feelings
Parasitic infestations		
Scabies	10.1±2.9	Symptoms and feelings, Daily activities, Work place & School
Pediculosis	9.1±1.18	Symptoms and feelings, Daily activities, Work place & School
Dermatitis		
Contact dermatitis	7.9±4.30	Symptoms and feelings
Seborrheic dermatitis	7.4±2.28	Symptoms and feelings
Keratinisation disorders		
Ichthyosis	7.3±2.36	Symptoms and feelings, Daily activities
Pigmentary and papulosquamous disorders		
Vitiligo	6.4±3.32	Symptoms and feelings, Daily activities
Psoriasis	7.6±4.57	Symptoms and feelings
Appendageal disorders		
Acne vulgaris	8.2±4.31	Symptoms and feelings, Work place & School
Hyperhidrosis	9.9±3.87	Symptoms and feelings



Graph 1: Details of conditions with positive family history



Graph 2: Outcome of DLQI score among study participants

DISCUSSION

Among the 298 research participants, 176 were male (59.06%) and 122 female (40.94%). The majority of participants were 16–19 years old, with 51.13% male and 45.90% female. Many participants were in high school, with 52.84% of men and 34.42% of women. Then came higher education, with 32.38% of men and 50.18% of women. Family structures show that 84.66% of men and 63.93% of females live in nuclear families, whereas 15.34% and 36.06% live in joint families. Many participants resided in cities, with 57.95% of men and 51.63% of women (Table 1). Fungal, bacterial, and viral infections occurred in 11.40%, 8.38%, 6.37%, and 4.70% of men and women, respectively. The parasitic scabies infestation affected 5.03% of men and 3.02% of women. However, 3.35% of women reported pediculosis. In the research, 1.67% of males and 2.34% of females experienced contact and seborrheic dermatitis. Keratinization diseases such ichthyosis, keratosis pilaris, and phrynoderma were common among research participants. Psoriasis, freckles, vitiligo, and pityriasis rosea were common among research participants. In appendageal diseases, 5.70% of males and 10.40% of females had acne of various severity (Table 2).

A positive family history was found in 9.73% of dermatophytosis, 4.03% of pediculosis, 8.38% of scabies, 3.36% of pyoderma, 1% of ichthyosis contagiosum, 0.67% of warts, varicella, and 0.33% of molluscum contagiosum (Graph 1). Participants aged 16-19 (n=146) were rated for quality of life. The DQLI score showed a small effect in 23.28% and 15.06%, a moderate effect in 16.43% and 10.95%, a very large effect in 10.95% and 5.47%, and an extremely large effect in 1.36% and 2.05%. No impact was seen in 9.58% of men and 4.79% of women (Graph 2). The majority of survey participants experienced symptoms and feelings (59.39%), followed by therapy (31.54%), daily activities (26.17%), leisure (21.47%), job and school (17.78%), and personal relationships (13.75%). A modest 6.71% of research subjects showed no skin problem impact (Table 3). The highest mean DLQI scores for infections include dermatophytosis (9.98), pyoderma (7.82), herpes simplex (6.01), and pityriasis versicolor (5.76). Parasitic infestations include scabies (10.1) and pediculosis (9.1), whereas dermatitis includes contact (7.9) and seborrheic (7.4%). Ichthyosis (7.3) is a keratinization condition, while vitiligo (6.4) and psoriasis (7.5) are pigmentary and papulosquamous. Appendageal diseases include acne vulgaris (8.2) and hyperhidrosis (9.9) (Table 4). Surya Narayana Y et al. found that infections (11.4%), acne (9.2%), infestations, eczematous lesions, and pigmentoses (4.2%), hair problems (3.6%), and papulosquamous diseases (2.8%) are the most frequent skin disorders among 500 adolescents aged 10-19. In women, infections (11.6%), acne (10.2%), infestations (5%), eczematous lesions (4.8%), pigmentoses (3%), hair problems (3%), and papulosquamous illnesses (1.4%). The most prevalent infections were fungi (11.4%), infestations (9.2%), viruses (6%), and bacteria (3.8%). Previous research on teens found infections to be the most frequent dermatoses. The most frequent dermatosis in adolescents is acne vulgaris, which affects quality of life. Pupillary infections often have lichen planus. Common were urticaria, alopecia areata, keloids, and insect bites.^[10]

Polra R et al. studied 312 participants of 10-19 year. As in the present investigation, the CDLQI was administered to patients aged 10-16 and the DLQI to those aged 17-19. A study found that 134 (42.9%) of 312 patients had no quality-of-life impact from skin problems. The majority (71.3%) of 178 dermatoses patients had a little impact on their quality of life, while 2.8% reported a very substantial effect. Bug infections had the highest CDLQI score (5.42), followed by fungal infections (4.42) and skin illnesses with lumps and scales (4.42). Fungal infections had the highest mean DLQI score (5.45), followed by appendage diseases (4.10). Fungal infections had a mild influence on quality of life (QOL) in 29 (55.7%) individuals and a very big effect in 2 (3.8%).^[11] Baskar et al. found that 84.6% of participants had QOL issues, with 37.4% having modest effects. Hyperhidrosis (10.6) and

dermatophytosis (10.5 ± 4.6) are linked to higher DLQI scores, indicating their major impact on adolescent quality of life (8) 38.34% had a minor effect, whereas 47.21% had a quality-of-life effect (Graph 2).

In a study of 1447 teens, Henshaw EB et al. found 929 had skin disorders. This was more common in men (72.1%) than women (58.3%). Public schools were less common than private ones. Acne vulgaris, pityriasis versicolor, nevi, tinea, miliaria, and keloid/hypertrophic scars accounted for almost 80% of cases.^[12] Dermatological disorders were found in 12,586 Indian schoolchildren aged 6-14 by Dogra S et al. The point prevalence of visible skin problems is 38.8%. The study found 3786 youngsters (30%) with one skin issue, 765 (6%) with two, and 336 (2.7%) with three. Skin infections are 11.4%, pityriasis alba 8.4%, dermatitis and nonspecific eczemas 5.2%, infestations 5.0%, pigmentation disorders 2.6%, keratinization disorders 1.3%, and nevi or hamartomas 1.1%.^[13]

In a study by Satish N et al. of 300 10-19-year-olds, girls (52.7%) had more dermatoses than men (47.3%). At 39%, infections and infestations were the most common dermatoses, followed by acne at 17.67%, eczema at 9.67%, insect bite responses at 7%, keratinisation disorders at 6.67%, polymorphic light eruptions, urticaria, and pigmentary diseases at 4.33%.^[14] After reviewing 400 adolescents aged 10-19, Hemalingiah M et al. found that acne vulgaris was the most common skin problem at 76%, followed by seborrhoeic dermatitis at 6%.^[15] In an evaluation of 3581 students aged 10-16 years, Deepika G et al. found that 2783 (83%), had skin infections. The prevalence of infectious skin disorders was greater in younger age groups (10-12 years) at 78.5%, compared to later age groups (13-16 years) at 55.2% ($p < 0.01$). Pediculosis is 52% common, followed by scabies at 25%. Seborrhoeic dermatitis is 5% and pityriasis alba 6.6%. Pyoderma is 3.3%, acne 2.6%, and tinea 2%. Scabies and pediculosis account for 77% of dermatological diseases.^[16]

Mithila Ravindranath et al. reviewed 550 adolescents aged 10-19 years and found that 34.8% had acne vulgaris, 15.3% had infections, and 12.9% had eczema. Infections and eczema were linked to the lower middle class.^[17] Atopic eczema had a lower mean effect on quality of life than acne vulgaris (8.5), alopecia (3.1), molluscum contagiosum (3.5), psoriasis (8.0), scabies (9.2), urticaria (7.1), vitiligo (6.5), and warts (2.9) in a meta-analysis by Olsen JR et al.^[18]

Our DLIQ score showed a slight effect in 38.34% of instances and a moderate to major effect in 47.21%, with infections being a common skin ailment. A small number of participants, no association analysis between DLQI ratings and illness severity, and no management alternatives to improve participants' quality of life are limitations of this study.

CONCLUSION

Adolescents experience a significant burden of dermatoses, primarily due to infections, parasitic infestations, and acne vulgaris. This study presents the clinical patterns and prevalence of various skin diseases in the adolescent population. This highlights the significance of understanding prevalent dermatological conditions in adolescents and delivering appropriate care through early diagnosis and treatment. In the long-term management of the disease, educational interventions demonstrate greater efficacy compared to conventional treatment, necessitating the implementation of awareness programs for adolescents.

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