

The Paradox of Education and the Failure of Communication: A Cross-Sectional Study of Topical Corticosteroid Phobia and Its Impact on Treatment Adherence Among Urban Primary Care Patients in Shenzhen, China

Jingkai Huang¹, Weifeng Chen², Li Ma¹, Ziping Wen¹, Minglan Shi¹, Fang Hong¹, Suchun Hou¹ 

¹Department of Dermatology, Shenzhen University General Hospital, Shenzhen, Guangdong, People's Republic of China; ²Shuguang Community Health Service Center, Nanshan Medical Group Headquarters, Shenzhen, Guangdong, People's Republic of China

Correspondence: Suchun Hou, Department of Dermatology, Shenzhen University General Hospital, Shenzhen, Guangdong, People's Republic of China, Email dlhousch@126.com

Background: Topical corticosteroid (TCS) phobia is increasingly recognized as a barrier to treatment adherence in dermatology. However, evidence from community-based primary care settings in urban China remains limited. Understanding patient perceptions in these settings is essential for improving adherence and promoting shared decision-making.

Purpose: To investigate the prevalence of TCS phobia among urban primary care patients in Shenzhen, identify associated factors, and evaluate its influence on treatment preferences and adherence behaviors.

Patients and Methods: A cross-sectional survey was conducted among community residents attending urban primary care clinics using an anonymous electronic questionnaire. Of the 300 eligible patients approached, 199 provided valid responses, yielding a response rate of 66.3%. An anonymous electronic questionnaire captured demographic data, TCS knowledge, attitudes, information sources, and treatment behaviors. Associations with TCS phobia were assessed using Chi-square tests.

Results: TCS phobia was reported by 26.1% of participants. Higher educational attainment was significantly associated with greater phobia ($P = 0.021$), demonstrating an “education paradox.” Misconceptions related to systemic adverse effects—especially weight gain ($P < 0.001$) and organ damage ($P = 0.009$)—were the strongest contributors to phobia. Concerns about local side effects did not differ significantly between groups. TCS phobia was strongly associated with refusal of prescribed therapy and preference for “natural” products (both $P < 0.001$). Knowledge of appropriate TCS use and information sources (physicians or media) did not significantly influence phobia levels.

Conclusion: TCS phobia is common among educated urban primary care patients and is driven primarily by incorrect beliefs about systemic toxicity. These fears have direct, negative consequences on treatment adherence. Current communication strategies appear insufficient. Patient-centered counseling that directly addresses misconceptions and emphasizes the distinction between topical and systemic corticosteroids is urgently needed in primary care practice.

Keywords: topical corticosteroid phobia, patient adherence, treatment refusal, health literacy, patient perceptions, primary care

Introduction

Topical corticosteroids (TCS) are widely used first-line therapies for inflammatory skin diseases. Despite strong evidence supporting their safety when used appropriately, many patients express concerns about potential harmful effects. This phenomenon—termed “TCS phobia”—has become an emerging issue worldwide and is associated with poor treatment adherence, underuse of medication, and preference for alternative therapies.^{1,2}

In China and other Asian regions, the phenomenon of TCS phobia appears particularly pronounced, significantly impacting clinical outcomes. A recent survey of parents of children with eczema revealed that 95.7% were concerned

about side effects, and 42% refused to apply TCS for disease recurrence due to these fears.³ Similarly, in pediatric outpatient settings, significant steroid fears were reported in up to 60% of caregivers for patients with moderate-to-severe eczema, frequently leading to requests for steroid-sparing alternatives.⁴ This phobia not only affects patient compliance but also influences physician prescribing behaviors. A large-scale study of Chinese dermatologists indicated that 61.59% cited “patient steroid phobia” as a primary reason for avoiding TCS prescriptions in favor of calcineurin inhibitors.⁵ Furthermore, this concern extends beyond dermatology; research on childhood asthma found that 35% of parents harbored significant corticosteroid fears, which were strongly associated with the use of Traditional Chinese Medicine.⁶ Despite this widespread prevalence, data specifically quantifying TCS phobia among the general adult population in primary care settings—particularly in rapidly urbanizing cities like Shenzhen—remains limited.

Research in China has primarily focused on patients receiving care in tertiary dermatology centers,³ while little is known about patient perceptions in community-based urban primary care settings. As primary care clinics serve as the first point of contact for many patients with mild skin conditions, understanding local attitudes toward TCS is essential for improving adherence and ensuring appropriate use.

Shenzhen is a highly urbanized city characterized by a young and well-educated population. These individuals often rely on online resources for health information, which may amplify misconceptions. Whether higher education serves as a protective factor or increases susceptibility to conflicting information remains unclear.

This study aims to:

1. Determine the prevalence of TCS phobia among urban primary care patients in Shenzhen.
2. Identify demographic and cognitive factors associated with phobia; and
3. Evaluate the impact of TCS phobia on treatment preferences and adherence. The findings are intended to inform targeted communication strategies for primary care clinicians.

Methods

Study Design and Setting

A cross-sectional survey was conducted from September to October 2025 among patients attending community health centers in urban districts of Shenzhen, China.

While the conceptual background of TCS phobia was detailed in the Introduction, for the purpose of this study, patients were operationally defined as having TCS phobia if they answered “Yes” to the specific question assessing reluctance to use prescribed TCS due to fear of side effects. Similarly, patients were considered to have knowledge of appropriate TCS use if they correctly agreed with the statement that TCS is safe when used for a short duration under physician guidance.

Although the specific survey items are enclosed in the [supplementary material](#), we have clarified our evaluation criteria. Specifically, patients were defined as having knowledge of appropriate TCS use if they correctly answered the questionnaire item confirming that TCS is safe when used for a short duration under a physician’s guidance.

Participants

A total of 300 questionnaires were distributed to eligible patients, of which 199 valid responses were collected, yielding a response rate of 66.3%. Inclusion criteria were adult age (≥ 18 years), ability to complete a smartphone-based questionnaire, and willingness to participate. Those unable to complete the questionnaire were excluded.

Survey Instrument and Data Collection The questionnaire was developed based on a comprehensive review of existing literature, including the TOPICOP scale concepts,⁷ and adapted to the local primary care context. To ensure content validity, the initial draft was reviewed by a panel of three senior dermatologists and two primary care physicians. A pilot test was conducted with 15 patients to verify the clarity and readability of the items (face validity), and minor modifications were made based on their feedback. The final questionnaire consisted of three sections: (1) demographic characteristics (eg, age, gender, education, income); (2) knowledge and behaviors regarding TCS use; and (3) assessment of TCS phobia levels and specific fears (eg, skin thinning, systemic absorption). The survey took approximately 5 to 8 minutes to complete. It was distributed face-to-face in the waiting areas of the community health centers using an electronic survey platform (WeSurvey) to ensure data completeness.

Sample Size Calculation The sample size was calculated using the single population proportion formula: $n = Z^2 P(1-P)/d^2$. Assuming a conservative prevalence (P) of TCS phobia of 50% to maximize the sample size, with a confidence level of 95% ($Z=1.96$) and a margin of error (d) of 7%, the minimum required sample size was calculated to be 196. Therefore, our final sample of 199 participants was sufficient to meet the statistical requirements.

Ethical Approval

Ethical review and approval were waived for this study by the Ethics Committee of Shenzhen university general hospital (Approval No. [KYLLMS-2025-42]) due to the anonymous and non-interventional nature of the survey. The study was conducted in accordance with the Declaration of Helsinki. Informed consent was obtained from all participants prior to their participation.

Data Collection

Participants completed an anonymous electronic questionnaire assessing:⁷

- Demographic characteristics
- TCS knowledge
- Attitudes (phobia)
- Treatment behaviors
- Information sources

Statistical Analysis

Data were analyzed using R 4.3.2. Descriptive statistics were used to summarize characteristics. Chi-square tests assessed associations between variables and TCS phobia.

Results

Participant Characteristics

A total of 199 valid questionnaires was collected. The demographic characteristics of the participants are summarized in [Table 1](#). Most participants were aged 18–45 years (90.4%), and 84.4% possessed college education or higher ([Table 1](#)).

Table 1 Baseline Characteristics of the Study Participants (N=199)

Characteristics	Category	No. of Patients (n)	Percentage (%)
Gender	Male	71	35.7
	Female	128	64.3
Age Group	18-30 years	93	46.7
	31-45 years	87	43.7
	46-60 years	11	5.5
	>60 years	8	4.0
Education Level	Primary school or below	3	1.5
	Junior high school	7	3.5
	High school/Technical	21	10.6
	College or above	168	84.4
Occupation	Farmer/Laborer	5	2.5
	Office worker/Teacher	89	44.7
	Self-employed	17	8.5
	Retired	11	5.5
	Other	77	38.7

Prevalence and Correlates of TCS Phobia

TCS phobia was reported by 26.1% of participants. Higher education level was significantly associated with phobia ($P = 0.021$). Neither history of chronic skin disease nor prior dermatology consultations showed a significant association (Table 2).

Knowledge of appropriate TCS use (eg, physician-guided short-term safety) was high (84.4%) but did not reduce phobia ($P = 0.387$). Information sources, including physicians and online platforms, were not significantly correlated with phobia.

Specific Misconceptions Driving the Phobia

The specific reasons underlying TCS phobia were analyzed (Table 3). Participants with phobia were significantly more likely to believe that TCS could cause systemic adverse effects, including weight gain and organ damage. Concerns regarding local side effects (eg, skin thinning) were comparable across groups.

Specifically, the fear of weight gain was significantly higher in the phobia group compared to the non-phobia group (59.6% vs 33.3%, $\chi^2 = 11.037$, $P < 0.001$). Similarly, concerns about organ damage (eg, liver or kidney toxicity) were much more prevalent among phobic patients (73.1% vs 52.4%, $\chi^2 = 6.745$, $P = 0.009$).

In contrast, concerns about local side effects, such as skin thinning, did not differ significantly between the two groups (48.1% vs 54.4%, $P = 0.431$). Other concerns, such as dependence or effects on child growth, also showed no significant statistical difference.

Impact of TCS Phobia on Treatment Preferences and Adherence

Regarding health-seeking behavior (Table 4), no statistically significant difference was found in the first action taken by patients ($P = 0.291$). Visiting a doctor remained the most common choice for both groups. However, a notable trend was

Table 2 Factors Associated with Topical Corticosteroid (TCS) Phobia

Variables	Total (n)	Fear Group n (%)	No Fear Group n (%)	χ^2 Value	P value
Education Level				7.748	0.021*
High school or below	31	(3) (9.7%)	(28) (90.3%)		
College or above	168	(49) (29.2%)	(119) (70.8%)		
Medical History				0.576	0.448
History of skin disease	68	(20) (29.4%)	(48) (70.6%)		
No history	131	(32) (24.4%)	(99) (75.6%)		
Healthcare Experience				0.102	0.750
Visited a doctor	142	(38) (26.8%)	(104) (73.2%)		
Never visited	57	(14) (24.6%)	(43) (75.4%)		
Source of Information				0.004	0.951
Doctor/Pharmacist					
Yes	164	(43) (26.2%)	(121) (73.8%)		
No	35	(9) (25.7%)	(26) (74.3%)		
Internet/Social media				0.133	0.715
Yes	100	(25) (25.0%)	(75) (75.0%)		
No	99	(27) (27.3%)	(72) (72.7%)		
Relatives/Friends				1.128	0.250
Yes	53	(17) (32.1%)	(36) (67.9%)		
No	146	(35) (24.0%)	(111) (76.0%)		
Pharmacy Staff				1.813	0.172
Yes	58	(19) (32.8%)	(39) (67.2%)		
No	141	(33) (23.4%)	(108) (76.6%)		

Notes: Data are presented as number (percentage). P values were calculated using Pearson's Chi-square test unless otherwise specified. * P value was calculated using the Likelihood Ratio Chi-square test due to small expected counts in subgroups. $P < 0.05$. Note: For Chi-square analysis, participants with primary school, junior high school, and high school education were collapsed into the "High school or below" category to meet the assumption of expected cell frequencies.

Table 3 Association Between Specific Concerns Regarding Side Effects and Topical Corticosteroid Phobia

Specific Concerns (Q19)	Fear Group n (%)	No Fear Group n (%)	χ^2 Value	P value
Systemic Side Effects				
Weight gain	31 (59.6%)	49 (33.3%)	11.037	<0.001*
Organ damage (Liver/Kidney)	38 (73.1%)	77 (52.4%)	6.745	0.009*
Local Side Effects				
Skin thinning/atrophy	25 (48.1%)	80 (54.4%)	0.620	0.431
Other Concerns				
Dependence/Addiction	33 (63.5%)	88 (59.9%)	0.209	0.648
Child growth	23 (44.2%)	52 (35.4%)	1.283	0.257
Rumors	13 (25.0%)	22 (15.0%)	2.668	0.102

Note: * indicates statistical significance ($P < 0.05$), bold font indicates statistical significance.

Table 4 Association Between TCS Phobia and Treatment Behaviors/Attitudes

Variables	Total (n)	Fear Group n (%)	No Fear Group n (%)	χ^2 Value	P value
First Action for Skin Problems (Q21)				4.967	0.291
See a doctor	119	26 (21.8%)	93 (78.2%)		
Pharmacy	58	21 (36.2%)	37 (63.8%)		
Others (Friends/Wait)	22	5 (22.7%)	17 (77.3%)		
Willingness to Use TCS (Q18)				56.72	<0.001*
Unwilling (Agree)	38	28 (73.7%)	10 (26.3%)		
Uncertain	83	16 (19.3%)	67 (80.7%)		
Willing (Disagree)	78	8 (10.3%)	70 (89.7%)		
Trust in "Natural" Alternatives (Q22)				26.885	<0.001*
Trust (Agree)	20	14 (70.0%)	6 (30.0%)		
Neutral	61	19 (31.1%)	42 (68.9%)		
Distrust (Disagree)	118	19 (16.1%)	99 (83.9%)		
Actual Usage Behavior (Q25)				9.292	0.026* ^a
Strictly as prescribed	138	29 (55.8%)	109 (74.1%)		
Apply more when itchy	43	13 (25.0%)	30 (20.4%)		
Reduce frequency (Fear)	11	6 (11.5%)	5 (3.4%)		
Never used	7	4 (7.7%)	3 (2.0%)		

Note: Data are presented as n (%). Values were calculated using Pearson's Chi-square test unless otherwise specified. ^aa -value was calculated using the Likelihood Ratio Chi-square test. * $P < 0.05$.

observed where patients who chose to visit a pharmacy exhibited a numerically higher rate of phobia (36.2%) compared to those who visited a doctor (21.8%), although this did not reach statistical significance.

Overall, TCS phobia had a profound and statistically significant negative impact on patients' specific treatment behaviors and attitudes. First, phobia was strongly associated with treatment refusal. When asked about willingness to use TCS prescribed by a doctor (Q18), 73.7% of the phobic group expressed unwillingness due to fear of side effects, compared to only 26.3% in the non-phobic group ($\chi^2 = 56.720$, $P < 0.001$).

Second, a significant substitution effect was observed (Q22). Patients in the phobic group were far more likely to trust "pure natural" or "hormone-free" alternatives recommended by friends or relatives (70.0%), whereas only 16.1% of the non-phobic group showed such preference ($\chi^2 = 26.885$, $P < 0.001$).

Third, phobia significantly influenced actual usage behavior (Q25). Among those who used TCS, the adherence rate (using strictly as prescribed) was significantly lower in the phobic group (55.8%) compared to the non-phobic group

(74.1%). Notably, phobic patients were significantly more likely to self-reduce the frequency of application due to fear (11.5% vs 3.4%) ($\chi^2 = 9.292$, $P = 0.026$).

Discussion

Prevalence of TCS Phobia in the Primary Care Context

In this study, we found that 26.1% of participants in community health centers in Shenzhen exhibited TCS phobia. When placed in a broader context, this prevalence offers unique insights. Globally, reported rates vary significantly depending on the setting and disease severity. For instance, studies in tertiary hospitals in⁴⁻⁶ often report higher rates of concern, ranging from 21% to 95.7% among parents of children with moderate-to-severe eczema.^{2,3} Our relatively lower prevalence (26.1%) likely reflects the primary care setting, where patients typically present with milder conditions compared to specialized dermatology centers.

However, this figure remains clinically significant given the unique demographic profile of Shenzhen—a rapidly urbanizing metropolis with a predominantly young and highly educated population. Despite the high literacy levels in our cohort, over a quarter of patients still harbor unfounded fears. Crucially, these fears are specifically directed at topical corticosteroids but are paradoxically driven by misconceptions about systemic side effects (as discussed below). This suggests that general education and youth do not automatically confer protection against medical misinformation, highlighting a persistent gap in patient education even in developed urban areas.

The Limitation of Knowledge Dissemination: Knowledge-Attitude Dissociation

Our study revealed a striking phenomenon often described in psychology as “Knowledge-Attitude Dissociation.” Although 84.4% of participants correctly understood that TCS is safe when used under medical guidance (Q10), this cognitive understanding failed to translate into a reduction in phobia ($P = 0.387$).

This study demonstrates that TCS phobia is common among urban primary care patients in Shenzhen. The findings highlight an “education paradox,” wherein highly educated individuals exhibit stronger fears despite higher levels of factual knowledge. This suggests that cognitive understanding alone is insufficient to overcome emotionally driven misperceptions.

Misplaced Risk Perception: The Confusion Between Systemic and Local Effects

Our detailed analysis of specific concerns reveals a critical insight into the cognitive mechanism of TCS phobia: it is driven primarily by misconceptions about systemic toxicity rather than valid concerns about local adverse events.

Our analysis confirmed that fears of systemic side effects, such as weight gain and organ damage, were the strongest predictors of phobia. While these are classic side effects associated with long-term systemic (oral or intravenous) corticosteroid use, they are extremely rare with appropriate topical application.^{2,8,9} This indicates a fundamental “route-of-administration confusion”, where patients conflate the risks of systemic steroids with those of topical creams.

In stark contrast, concerns about “skin thinning/atrophy”—the most common genuine local side effect of TCS—did not differ significantly between the phobic and non-phobic groups (48.1% vs 54.4%, $P = 0.431$). Similarly, fears regarding “dependence/addiction” were high in both groups (~60%) but showed no statistically significant difference ($P = 0.648$). This suggests that the “real” risk is not the primary driver of panic.

The strongest determinants of phobia were incorrect beliefs regarding systemic toxicity. As evidenced by our data, these misconceptions stem directly from a conflation of topical and systemic corticosteroid risks. We hypothesize that such profound confusion may be exacerbated by the modern information environment, where unverified online content can easily overshadow traditional, time-constrained physician-centered education.

Behavioral Consequences: The Hidden Cost of Fear

Interestingly, while TCS phobia did not significantly alter the primary health-seeking pathway (most patients still chose to see a doctor), we observed a potential link between pharmacy visits and higher phobia rates (36.2% vs 21.8%). This aligns with the observation that retail pharmacies in China may sometimes act as an amplifier for phobia by promoting “hormone-free” products for commercial interests.⁶ Patients seeking self-medication at pharmacies may be more vulnerable to such

misleading marketing. Our study confirms that TCS phobia is not merely a psychological state but a significant barrier to effective treatment. Consistent with previous findings by Aubert-Wastiaux et al² and Maria O Christensen et al,¹⁰ we observed a clear dose-response relationship where higher fear levels correlated with poorer adherence.

Specifically, our data reveal two distinct mechanisms of non-adherence driven by phobia:

1. Overt Refusal: The strong association between phobia and unwillingness to use prescribed medication (Q18, $P < 0.001$) suggests that fear often acts as a primary gatekeeper, preventing the initiation of therapy.
2. Hidden Non-adherence: Even when patients agree to use TCS, phobia leads to “usage modification,” such as self-reducing the frequency of application (Q25, $P = 0.026$). As noted by Simon M Mueller et al, patients often express their phobia through behaviors like reducing doses rather than verbalizing their fears.¹¹ This “under-treatment” risks therapeutic failure, which patients may falsely attribute to the drug’s inefficacy rather than insufficient dosage, potentially leading to a vicious cycle of disease flares and increased steroid anxiety.^{11,12}

Furthermore, the significant shift towards “natural” alternatives (Q22, $P < 0.001$) highlights a dangerous substitution effect. In the current market, many unregulated products labeled as “herbal” or “pure plant-based” may paradoxically contain illicitly added potent steroids.^{13–16} By fleeing from regulated medical prescriptions to unregulated alternatives, phobic patients may unwittingly expose themselves to higher risks.

Implications for the Doctor-Patient Relationship in the Digital Era

Our findings of the “Education Paradox” have broader implications for the evolving doctor-patient relationship in China. Traditionally, higher education is assumed to facilitate better understanding of medical advice. However, our study suggests that in the digital era, general literacy does not equate to health literacy. Highly educated patients in urban centers like Shenzhen are often “Digital Natives” who actively seek health information online. When exposed to alarmist misinformation (eg, “hormone addiction”) that contradicts clinical guidelines, they may develop “Cyberchondria” and skepticism toward medical professionals.¹ This creates a new challenge for doctor-patient communication: physicians are no longer the sole source of information but must compete with a vast ecosystem of digital pseudoscience. Consequently, the traditional “paternalistic” communication model (where doctors prescribe without explanation) is increasingly ineffective and may even breed mistrust among educated patients. The persistence of phobia despite doctor visits ($P > 0.05$) in our study indicates a failure of the current communication strategy. These findings emphasize the need for patient-centered communication focusing on risk clarification, emotional reassurance, and shared decision-making.

Practically, refining communication strategies means shifting from a traditional didactic approach (merely stating facts about efficacy) to an empathetic, patient-centered dialogue. Physicians should actively elicit and validate patients’ specific emotional fears—particularly the “route-of-administration confusion” identified in our study—before correcting them. Evidence from recent interventions demonstrates that using shared decision-making models and targeted therapeutic education (such as pharmacist or nurse-led counseling) significantly reduces topical steroid phobia and improves long-term treatment adherence.⁹

Conclusion

TCS phobia is prevalent among urban residents in primary care settings in Shenzhen and is strongly associated with misconceptions about systemic adverse effects. These fears significantly impair treatment adherence. Efforts to refine communication strategies—especially those that address emotional concerns and correct misunderstandings—are essential to support patient adherence and improve real-world outcomes. Limitations, our response rate was 66.3% (199/300). As astutely noted during peer review, it is possible that the approximately 33.7% of patients who declined or were unable to participate represent a demographic with different educational backgrounds or lower health literacy, which introduces a potential selection bias.

AI Declaration

Gemini (Google, Mountain View, CA, USA) was used for language enhancement. All content was verified and finalized by the authors.

Acknowledgments

The authors thank the community health staff and all participating patients for their cooperation.

Funding

This work was supported by the [Shenzhen Stable Support for General Projects] (Grant number [20231122162117001]).

Disclosure

The authors report no conflicts of interest in this work.

References

1. Albogami MF, AlJomaie MS, Almarri SS, et al. Topical corticosteroid phobia among parents of children with atopic dermatitis (Eczema)- A cross-sectional study. *Patient Prefer Adherence*. 2023;17:2761–2772. PMID: PMC10627058. doi:10.2147/PPA.S431719
2. Aubert-Wastiaux H, Moret L, Le Rhun A, et al. Topical corticosteroid phobia in atopic dermatitis: a study of its nature, origins and frequency. *Br J Dermatol*. 2011;165(4):808–814. PubMed PMID: 21671892. doi:10.1111/j.1365-2133.2011.10449.x
3. Li Y, Han T, Li W, Li Y, Guo X, Zheng L. Awareness of and phobias about topical corticosteroids in parents of infants with eczema in Hangzhou, China. *Pediatr Dermatol*. 2018;35(4):463–467. doi:10.1111/pde.13527.
4. Hon KLE, Kam WYC, Leung TF, et al. Steroid fears in children with eczema. *Acta Paediatr*. 2006;95(11):1451–1455. doi:10.1080/08035250600612298
5. Hu J, Jia Q, Zhang W, Zhang J, Li H. Dermatologists' perceptions and factors influencing the selection of topical anti-inflammatory agents for atopic dermatitis in china: a cross-sectional survey study. *Clin Cosmet Invest Dermatol*. 2024;17:2713–2723. doi:10.2147/CCID.S487996
6. Ip KI, Hon KL, Tsang KYC, Leung TNH. Steroid phobia, Chinese medicine and asthma control. *Clin Respir J*. 2018;12(4):1559–1564. PubMed PMID: 28876537. doi:10.1111/crj.12705
7. Moret L, Anthoine E, Aubert-Wastiaux H, et al. TOPICOP©: a new scale evaluating topical corticosteroid phobia among atopic dermatitis outpatients and their parents. *PLoS One*. 2013;8(10):e76493. PubMed PMID: 24146878; PubMed Central PMCID: PMC3797828. doi:10.1371/journal.pone.0076493
8. Rice JB, White AG, Scarpati LM, Wan G, Nelson WW. Long-term systemic corticosteroid exposure: a systematic literature review. *Clin Ther*. 2017;39(11):2216–2229. PubMed PMID: 29055500. doi:10.1016/j.clinthera.2017.09.011
9. Choi E, Tan KW, Tang F, Tan C, Chandran NS. Efficacy of targeted education in reducing topical steroid phobia: a randomized clinical trial. *J Am Acad Dermatol*. 2020;83(6):1681–1687. PubMed PMID: 32171815. doi:10.1016/j.jaad.2020.02.079
10. Christensen MO, Sieborg J, Nymand LK, et al. Prevalence and clinical impact of topical corticosteroid phobia among patients with chronic hand eczema-Findings from the Danish Skin Cohort. *J Am Acad Dermatol*. 2024;91(6):1094–1103. PubMed PMID: 39181406. doi:10.1016/j.jaad.2024.07.1503
11. Mueller SM, Itin P, Vogt DR, et al. Assessment of “corticophobia” as an indicator of non-adherence to topical corticosteroids: a pilot study. *J Dermatol Treat*. 2017;28(2):104–111. PubMed PMID: 27396480. doi:10.1080/09546634.2016.1201189
12. Contento M, Cline A, Russo M. Steroid phobia: a review of prevalence, risk factors, and interventions. *Am J Clin Dermatol*. 2021;22(6):837–851. PubMed PMID: 34287768. doi:10.1007/s40257-021-00623-6
13. Hengge UR, Ruzicka T, Schwartz RA, Cork MJ Adverse effects of topical glucocorticosteroids. *J Am Acad Dermatol*. 2006;54(1):1–15. doi:10.1016/j.jaad.2005.01.010
14. Ernst E Adverse effects of herbal drugs in dermatology. *Br J Dermatol*. 2000;143(5):923–929. doi:10.1046/j.1365-2133.2000.03822.x
15. Choi E, Chandran NS, Tan C. Corticosteroid phobia: a questionnaire study using TOPICOP score. *Singapore Med J*. 2020;61(3):149–153. PubMed PMID: 32488277; PubMed Central PMCID: PMC7905116. doi:10.11622/smedj.2019110
16. Tofth-Hansen JM, Nørreslet LB, Vittrup I, Thyssen JP, Agner T, Yüksel YT. Topical corticosteroid phobia among Danish pharmacy staff. *Dermatology*. 2024;240(4):581–588. PubMed PMID: 38679004. doi:10.1159/000534766

Patient Preference and Adherence

Publish your work in this journal

Patient Preference and Adherence is an international, peer-reviewed, open access journal that focusing on the growing importance of patient preference and adherence throughout the therapeutic continuum. Patient satisfaction, acceptability, quality of life, compliance, persistence and their role in developing new therapeutic modalities and compounds to optimize clinical outcomes for existing disease states are major areas of interest for the journal. This journal has been accepted for indexing on PubMed Central. The manuscript management system is completely online and includes a very quick and fair peer-review system, which is all easy to use. Visit <http://www.dovepress.com/testimonials.php> to read real quotes from published authors.

Submit your manuscript here: <https://www.dovepress.com/patient-preference-and-adherence-journal>

Dovepress
Taylor & Francis Group