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Original Research Article

Evaluation of the knowledge, attitude and practice of cosmetovigilance among medical and paramedical students in a tertiary care hospital

Preethi S.[1]*, Kalaiselvi B.[1], Arvind N.[2]

[1]Department of Pharmacology, ACS Medical College and Hospital, Velappanchavadi, Chennai, Tamil Nadu, India
[2]Department of Anesthesiology, SRM Medical College, Hospital and Reseach Center, Kattankulathur, Tamil Nadu, India

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***Correspondence:**
Dr. Preethi S.,
Email: preethisidcosegar@gmail.com

ABSTRACT

Background: Cosmetovigilance is an emerging system aimed at monitoring and preventing adverse cosmetic reactions (ACRs). Despite extensive cosmetic usage, reporting of ACRs remains inadequate, particularly in developing countries. Healthcare students, as future professionals, play a crucial role in recognizing and reporting these reactions; however, their knowledge and practice regarding cosmetovigilance are not well established. Objectives were to assess the knowledge, attitude and practice (KAP) of cosmetovigilance among medical and paramedical students in a tertiary care hospital and to evaluate their willingness to report ACRs.

Methods: A descriptive cross-sectional study was conducted from August 2025 to September 2025 among approximately 200 medical and paramedical students of ACS Medical College and Hospital, a tertiary care teaching hospital in Tamil Nadu. Participants were selected using simple random sampling. Data were collected using a validated structured questionnaire assessing KAP related to cosmetovigilance. The data were analyzed using SPSS version 25.0, and results were expressed as frequencies and percentages.

Results: The study revealed inadequate knowledge and poor practice of cosmetovigilance among the participants, with paramedical students showing lower levels compared to medical students. Awareness regarding the concept of cosmetovigilance and reporting mechanisms was limited. However, a positive attitude towards cosmetovigilance was observed, as most participants agreed that reporting ACRs is necessary and expressed willingness to report such reactions in the future.

Conclusions: Although the attitude towards cosmetovigilance was favorable, significant gaps in knowledge and practice were identified among medical and paramedical students. Incorporation of cosmetovigilance training into healthcare curricula and regular educational programs is essential to promote adverse cosmetic reaction reporting and improve patient safety.

Keywords: Cosmetovigilance, Adverse cosmetic reactions, Patient safety

INTRODUCTION

Cosmetovigilance refers to the science and activities involved in the detection, assessment, understanding and prevention of adverse effects or any other problems related to cosmetic products.[1] With the rapid expansion of the cosmetic industry and increasing use of cosmetic products across all age groups, the incidence of ACRs such as contact dermatitis, pigmentation disorders, acneiform eruptions and hair damage has also increased.[2]

Despite this, cosmetovigilance remains a relatively underdeveloped area compared to pharmacovigilance, particularly in developing countries like India.[3,4]

Unlike drugs, cosmetic products are often perceived as inherently safe, leading to under-recognition and under-reporting of ACRs. Reporting of these reactions to regulatory authorities is minimal, which hampers effective post-marketing surveillance and compromises consumer safety.[5,6] Healthcare professionals play a pivotal role in identifying, managing and reporting ACRs. Therefore, awareness and training in cosmetovigilance during the undergraduate and postgraduate period is essential to build a strong reporting culture.[7,8]

Medical and paramedical students represent future healthcare providers who will encounter cosmetic-related adverse events in both clinical and community settings.[9] However, there is limited data regarding their KAP towards cosmetovigilance in India. Hence, this study was undertaken to evaluate the KAP of cosmetovigilance among medical and paramedical students in a tertiary care hospital and to identify gaps that can be addressed through targeted educational interventions.

METHODS

Study design

A descriptive cross-sectional study was conducted to assess the KAP related to cosmetovigilance.

Study setting and population

The study was conducted in an ACS Private Medical college and hospital, Chennai, Tamil Nadu among undergraduate and postgraduate medical and paramedical students.

Study duration

The study conducted from August 2025 to September 2025.

Sample size and sampling technique

A total of approximately 200 participants were enrolled in the study. Participants were selected using a simple random sampling method to reduce selection bias and ensure representative sampling.

Study tool

Data were collected using a validated structured questionnaire. The questionnaire consisted of four sections: Demographic details (age, course of study), knowledge related to cosmetovigilance (definition, awareness of ACRs, reporting systems), attitude towards reporting ACRs (perceived importance, responsibility, willingness to report) and practice related to cosmetovigilance (experience of ACRs, reporting behavior, attendance at the workshops or training programs).

Data collection and analysis

After obtaining informed consent, participants were requested to fill out the questionnaire anonymously. Collected data were entered into Microsoft excel and analyzed using SPSS version 25.0. Descriptive statistics such as frequencies and percentages were used to summarize the data. Comparisons were made between medical and paramedical students

RESULTS

The majority of participants (37.5%) belonged to the 20-22 years age group, which is consistent with the typical age range of undergraduate health science students (Figure 1).

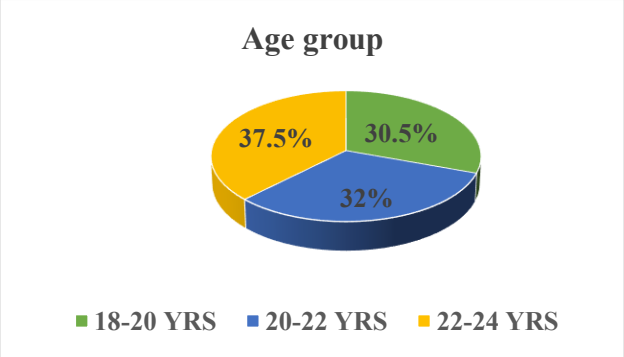

Figure 1: Age distribution of the study participants.

Overall knowledge regarding cosmetovigilance was found to be inadequate, especially among paramedical students. A smaller proportion of participants were aware of the concept of cosmetovigilance and its role in reporting ACRs. Medical students demonstrated relatively better knowledge compared to paramedical students (40.0% vs 32.5%), particularly in recognizing that cosmetics can cause adverse reactions and that such reactions can be reported (Figure 2).

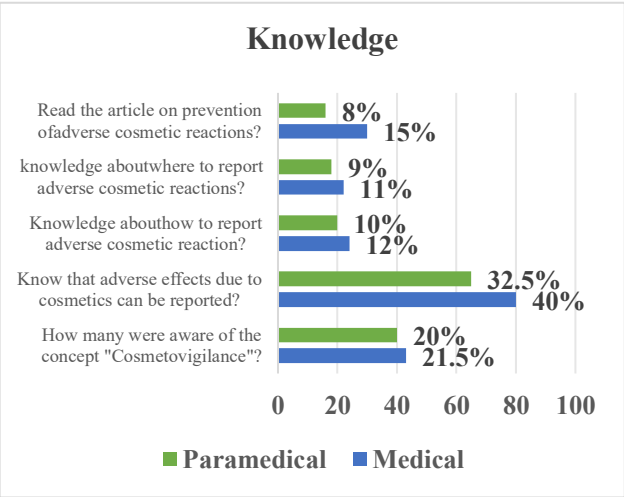

Figure 2: Knowledge level of participants about cosmetovigilance.

Despite limited KA towards cosmetovigilance was generally positive. Most participants agreed that not all cosmetic products are completely safe, reporting of ACRs is necessary and cosmetovigilance should be included in healthcare curriculum. A high proportion of both medical and paramedical students expressed willingness to report ACRs in the future, indicating receptiveness to learning and improvement (Table 1).

Table 1: Attitude of participants towards cosmetovigilance.

Attitude	Scale	Medical	Paramedical	Total
All the cosmetics products available in the market are safe?	Agree	1 (0.5%)	2 (1%)	3 (1.5%)
	Disagree	119 (59.5%)	78 (39%)	197 (98.5%)
Reporting ACR, should be necessary?	Agree	110 (55%)	88 (44%)	198 (99%)
	Disagree	1 (0.5%)	1 (0.5%)	2 (1%)
Reporting ACR should be made mandatory?	Agree	120 (60%)	75 (37.5%)	195 (97.5%)
	Disagree	2 (1%)	3 (1.5%)	5 (2.5%)
Cosmetovigilance, should be taught in detail to the health care professionals?	Agree	115 (57.5%)	83 (41.5%)	198 (99%)
	Disagree	1 (0.5%)	1 (0.5%)	2 (1%)
Cosmetovigilance should be included in UG curriculum?	Agree	113 (56.5%)	84 (42%)	197 (98.5%)
	Disagree	1 (0.5%)	2 (1%)	3 (1.5%)
Every institute should enroll under cosmetovigilance?	Agree	100 (50%)	94 (47%)	194 (97%)
	Disagree	2 (1%)	4 (2%)	6 (3%)
Reporting of ACR benefits the patients?	Agree	150 (75%)	48 (24%)	198 (99%)
	Disagree	1 (0.5%)	1 (0.5%)	2 (1%)

Actual practice of cosmetovigilance was poor among both groups. Very few participants had documented an adverse cosmetic reaction, reported an ACR to any authority and attended workshops, CMEs or seminars on cosmetovigilance. Medical students showed marginally better practice compared to paramedical students, but overall reporting behavior was unsatisfactory (Figure 3).

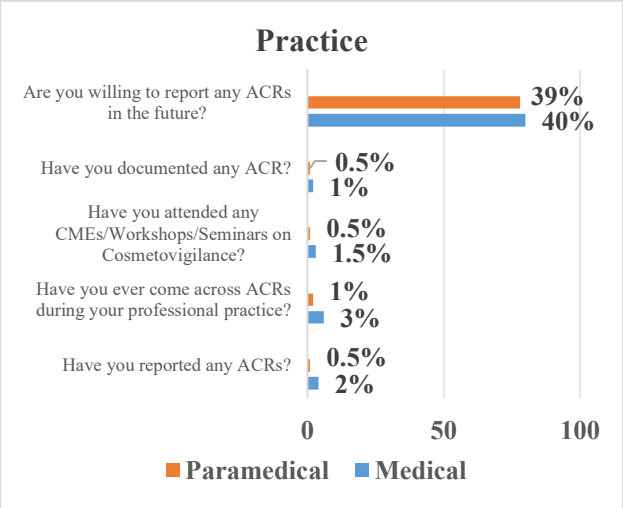

Figure 3: Practice of cosmetovigilance among participants.

DISCUSSION

The present study found limited knowledge but positive attitudes toward cosmetovigilance among medical and paramedical students. Specifically, only a minority of students were able to correctly define cosmetovigilance and knew the reporting process; whereas a majority (about ~75-80%) agreed that cosmetovigilance is important and that ACR reporting should be encouraged. However, actual reporting practice was very low (e.g., <20% had ever reported an ACR), indicating a disconnect between attitude and practice. A study done by Yohini et al reported that less than half of the participants were aware of cosmetovigilance and only a small fraction had ever reported an adverse cosmetic reaction, which aligns with the findings of the current study.[10] Also, prior pharmacovigilance KAP study done by Girish et al among undergraduate medical students have similarly reported high positive attitudes (often >70%) but low reporting practice (<30%) due to lack of formal training and confidence in reporting.[11]

These findings are congruent with other Indian cosmetovigilance research. In a questionnaire-based studydone by Sahu et al among PGs, interns and consumers, only 46.1% were aware of cosmetovigilance, and practice of reporting was extremely low (~5%), even though attitude was generally satisfactory.[12] This closely reflects the present study observation of limited knowledge and low practice despite positive attitude.

Similarly, a recent survey among Tamil Nadu medical students showed that only 33.8% recognized the concept of cosmetovigilance and 23.1% had reported ACRs, with poor knowledge components such as awareness of the Drugs and Cosmetics Act (21.1%).[13] The similarity in results between these two studies suggests that knowledge gaps and under-reporting are recurrent themes in cosmetovigilance among health students in Indi. A population-based study from Puducherry done by Abirami et al showed that while 71.4% recognized that cosmetics could cause adverse events, only about 27.6% were aware

of the term cosmetovigilance, and less than half expressed willingness to report ACRs.[14]

In contrast, a study conducted by Suganya et al from Chengalpattu reported much higher values for KAP components, awareness was ~56.9%, attitude ~67% and practice ~70%.[15] These higher figures may be due to differences in population (interns and postgraduates who have more clinical exposure) compared to the mix of undergraduates in present study, which suggests that clinical experience and exposure to adverse events may improve vigilance attitudes and practice

Limitations

The study was conducted at a single center and relied on self-reported data, which may introduce response bias. The cross-sectional nature of the study also limits causal inference

CONCLUSION

The study demonstrates that although medical and paramedical students possess a positive attitude towards cosmetovigilance, their knowledge and practical application remain inadequate. Strengthening cosmetovigilance education through structured academic programs and hands-on training is essential to promote adverse cosmetic reaction reporting and enhance patient safety.

Recommendations

The gap between positive attitude and low practice highlights a critical need for structured educational interventions. Inclusion of cosmetovigilance in the formal pharmacology and dermatology syllabus, workshops, seminars, and practical exposure to reporting systems could bridge this gap. Educational programs have been shown in pharmacovigilance to significantly improve reporting behavior and confidence among students, which can be extrapolated to cosmetovigilance.

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Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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