Assessment and Evaluation of Knowledge, Attitude and Perception on Topical Corticosteroids among Health Science Student Population

Sowmya Spoorthi Marripalli*, Madiwalayya Shivakantayya Ganachari, Bandaru Yeswanth Raja

Department of Pharmacy Practice, KLE College of Pharmacy, KLE Academy of Higher Education and Research, Belagavi, Karnataka, INDIA.

ABSTRACT

Background: Abuse of topical corticosteroids is a growing concern for dermatologists in India. It manifests itself in a variety of ways, most frequently on the face. Important underlying issues include a lack of public knowledge and the simplicity of acquiring topical corticosteroids without a prescription. There is a need to take urgent remedial steps and increase awareness about this problem in Health Science Student Population. Therefore, our study aims to assess and evaluate the Knowledge, Attitude and Perception (KAP) among health science student population regarding usage of topical corticosteroids. Materials and Methods: A Randomized case control study carried out among health science student population. A Self-prepared and validated KAP questionnaires were distributed to the health science student population through online forms and face-to-face interview were done after seminar was conducted in case group using audio-video visuals and only subject information leaflet is given in control group then post study was done after 1 month and follow-up after 3 months with the same set of questionnaires. Results: Out of 520 students women made up 69.23% more participants than men. The percentage of people aged 20 to 30 was 71.15%. Most of the participants were undergraduates with 81.15%. Pharmacy (22.69%) is the field with the highest enrolment, followed by Ayurveda, Nursing, Physiotherapy, Medical, dental and allied degrees. Case group showed significant improvement in KAP score respectively compared to control group (p<0.05). Conclusion: Educating with audio video visuals and seminar shows significant improvement in KAP scores compared to giving subject information leaflet.

Keywords: Topical corticosteroids, Health science, Knowledge, Attitude, Perception.

Correspondence:

Dr. Sowmya Spoorthi Marripalli, (PhD) Full-time Research Scholar, Department of Pharmacy Practice, KLE College of Pharmacy, KLE Academy of Higher Education and Research, Belagavi-590010, Karnataka, INDIA. Email: sowmya.spoorthi27@gmail.com

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INTRODUCTION

Steroids are naturally occurring substance, produced by the body.¹ By decreasing the amount of collagen in the skin and controlling inflammation, corticosteroids treat diseases of the skin.² Topical corticosteroids are corticosteroids that are administered on the skin as creams, ointments, lotions, shampoos, and gels. Topical corticosteroids are available in various potencies. However, long-term adverse effects seen with topical corticosteroids are topical steroid dependent face, also called red face syndrome, steroid addiction, dermatitis rosaceaformis steroidica, topical corticosteroid induced rosacea like dermatitis. etc. might be dangerous.³ Topical corticosteroids because of their activity, they can momentarily cover skin inflammation and result in temporary fairness.⁴5 Topical corticosteroids abuse is more among females compared to males for fairness purposes.⁵



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Topical corticosteroids provide a quick symptomatic relief in most of the inflammatory dermatoses.7 Because of this, it is one of the most frequently recommended topical medications, which have been used around for roughly 60 years at this point.8 Sulzberger and Witten initially presented it as compound F in 1952 (hydrocortisone).9 Strong corticosteroids, including clobetasone, fluticasone, and mometasone are only permitted to be marketed in India with a qualified medical practitioner's prescription under Indian rules and regulations. There are at least 18 corticosteroid molecules available in Indian market for topical use, out of which a few are easily available at almost all medical stores without prescription.¹⁰ All steroids are listed in Schedule H of the Drugs and Cosmetics Rules of 1945, but topical preparations and eye ointments are mysteriously left off the list in a footnote even though there are no oral formulations of these medications.¹¹ This suggests that these pharmaceuticals are for all intents and purposes deemed to be available Over the Counter (OTC). This requires immediate revision. 12,13

In the recent years, it has been noticed that there is an increase in topical corticosteroids misuse in the community.¹⁴ Topical

corticosteroids abuse is quite common with varied presentations most commonly on face. ¹⁵ There is need to take urgent remedial steps and increase awareness about this problem in health science student population using topical corticosteroids. ¹⁶ Keeping this in view our study aims to create awareness among health science student population through seminar using audio video visuals for one group and comparing KAP of case with control, assess the Knowledge, Attitude and Perception (KAP) regarding topical corticosteroids among the sample of health science student population.

MATERIALS AND METHODS

A prospective interventional study was conducted among health science student population in different constitutional units of the university. The study was conducted for the duration of six months. Health science student population were enrolled in this study in prior to Institutional Ethical Committee (IEC) with Ethical clearance number (Ref no: KAHER/EC/21-22/023) and written informed consent form was obtained from each participant before the enrolment. The study was conducted using self-framed and validated KAP questionnaire among health science student population. Health science student population includes diploma, undergraduates, post graduates from different courses (Pharmacy, Nursing, Physiotherapy, Ayurveda, Bachelor of Medicine and Bachelor of Surgery (MBBS), Bachelor of Dental Surgery (BDS), Allied health science courses) were approached individually in small groups for the survey and was conducted with help of questionnaires.

As there was no validated questionnaire available, we used a set of 10 questions in each section of KAP accordingly (Table 1). For subject information leaflet we took the permission for using standardized subject information leaflet provided by British Association of dermatology on awareness of topical corticosteroids. We randomized the sample population using computer randomization method into two groups as case and control. Same validated questionnaire was used in both case and control group for Pre, Post and follow-up.

The case group was given intervention after taking pre KAP scores, both subject information leaflet and educated them using audio, video visuals followed by seminar showing pictorial representation of the side effects of the topical corticosteroid's abuse/misuse and post KAP scores was taken and compared both pre and post KAP scores. After one month follow up was conducted in case group. Whereas the control group was not given any intervention after the pre KAP scores obtained, post KAP scores were obtained as such without intervention, one month follow up scores were obtained and compared accordingly.

The data results were analysed for descriptive statistics by *t* test, *p* values and with 95% confidence interval using SPSS (Statistical Package for Social Sciences) software version 22.0. The schematic representation of the study has been depicted in the Figure 1.

RESULTS

A total of 520 health science students were enrolled into the study. They were randomized into case (260) and control (260) groups by using computer randomization method. The age group of health science student population in case group were 26.54% (69) in between 18-20 years and 73.46% (191) in between 21-30 years. Whereas in control the age group of health science student population were 31.15% (81) in between 18-20 years and 68.85% (179) in between 21-30 years. Out of 260 health science student population, in case 68.08% (177) were females and 31.92% (83) were males. Whereas in control 70.38% (183) were females and 29.62% (77) were males. The majority of the participants were the undergraduate students in case 81.92% (213) and in control 80.38% (209) followed by diploma students in case 12.69% (33) and in control 11.15% (29). The minor participants were the post graduate student in case 5.38% (14) and in control 8.46% (22). The majority course students enrolled in the case are Pharmacy 29.23% (76) followed by Ayurveda 20.77% (54), Physiotherapy 13.08% (34), Nursing 11.92% (31), medical allied course 9.62% (25), BDS 8.08% (21) and MBBS 7.31% (19). In control group are Nursing 21.54% (56), 8.46% (22) and medical allied course 8.46% (22). The demographics profile of the health science student population is characterised in Table 1.

On assessment of Knowledge parameter, the time points in the case group, the pre-test of the mean 1.54 and SD 1.41, the post-test of the mean 5.45 and SD 0.62, the follow-up of the mean 4.82 and SD 0.58, the pre-test to post test of the mean 3.91 and SD 1.52, the pre-test to follow-up of the mean 3.28 and SD 1.47. The

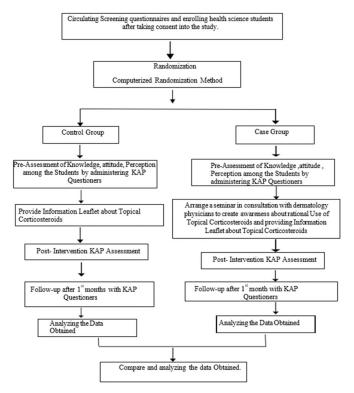


Figure 1: Schematic representation of methodology.

Table 1: Comparison of cases and controls with demographic profile.

Profile	Cases	%	Controls	%	Total	%	χ²	<i>p</i> -value
Age groups								
18 – 20	69	26.54	81	31.15	150	28.85	1.3490	0.2450
21 – 30	191	73.46	179	68.85	370	71.15		
Gender								
Male	83	31.92	77	29.62	160	30.77	0.3250	0.5690
Female	177	68.08	183	70.38	360	69.23		
Education								
Qualification								
Diploma	33	12.69	29	11.15	62	11.92	2.0740	0.3550
Undergraduate	213	81.92	209	80.38	422	81.15		
Postgraduate	14	5.38	22	8.46	36	6.92		
Courses								
Pharmacy	76	29.23	42	16.15	118	22.69	18.1770	0.0060*
Nursing	31	11.92	56	21.54	87	16.73		
Physiotherapy	34	13.08	37	14.23	71	13.65		
Ayurveda	54	20.77	56	21.54	110	21.15		
MBBS	19	7.31	25	9.62	44	8.46		
BDS	21	8.08	22	8.46	43	8.27		
Allied Course	25	9.62	22	8.46	47	9.04		
Total	260	100.00	260	100.00	520	100.00		

time points in the control group, the pre-test of the mean 1.62 and SD 1.48, the post-test of the mean 2.76 and SD 0.62, the follow-up of the mean 4.82 and SD 0.58, the pre-test to post test of the mean 3.91 and SD 1.52, the pre-test to follow-up of the mean 3.28 and SD 1.47. In attitude parameter, the time points in the case group, the pre-test of the mean 10.18 and SD 1.49, the post-test of the mean 22.42 and SD 1.60, the follow-up of the mean 22.35 and SD 1.43, the pre-test to post test of the mean 12.23 and SD 2.08, the pre-test to follow-up of the mean 12.17 and SD 1.98. The time points in the control group, the pre-test of the mean 10.49 and SD 1.98, the post-test of the mean 11.90 and SD 3.05, the follow-up of the mean 11.75 and SD 2.77, the pre-test to post test of the mean 1.41 and SD 2.72, the pre-test to follow-up of the mean 1.26 and SD 2.69. Where as in Perception parameter, the time points in the case group, the pre-test of the mean 1.56 and SD 1.03, the post-test of the mean 5.60 and SD 0.56, the follow-up of the mean 5.60 and SD 0.56, the pre-test to post test of the mean 4.03 and SD 1.14, the pre-test to follow-up of the mean 4.03 and SD 1.14. The time points in the control group, the pre-test of the mean 1.67 and SD 1.05, the post-test of the mean 4.20 and SD 0.88, the follow-up of the mean 4.20 and SD 0.88, the pre-test to post test of the mean 2.53 and SD 1.23, the pre-test to follow-up of the mean 2.53 and SD 1.23. The p-value (<0.005) among the parameters of knowledge, attitude and perception was found a significant improvement between the case and control groups by using dependent test as shown in the Table 2.

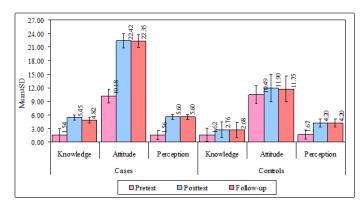


Figure 2: Comparison of pre-test, post-test and follow up scores of knowledge, attitude and perception in cases and controls.

The comparison of pre-test, post-test and follow up scores of KAP in cases and controls using dependent T test summarized in Figure 2.

DISCUSSION

Awareness on topical corticosteroids among the health science students is one of the better implementing education choices which improves the practice in treating common people who abuse the topical corticosteroids. Among all the literature that is currently available, studies on topical steroid usage only include demographic information, are cross-sectional studies, and do not include follow-up studies. Although topical corticosteroids are

Table 2: Comparison of cases and controls with mean pretest, posttest and follow up scores of knowledges, attitude and perception by independent t test.

Parameters	Time points		Cases		Controls		<i>p</i> -value
		Mean	SD	Mean	SD		
Knowledge	Pre-test	1.54	1.41	1.62	1.48	-0.6361	0.5250
	Pos-ttest	5.45	0.62	2.76	1.71	23.8563	0.0001*
	Follow-up	4.82	0.58	2.68	1.64	19.8004	0.0001*
	Pre-test to post-test	3.91	1.52	1.14	2.29	16.3045	0.0001*
	Pre-test to follow-up	3.28	1.47	1.06	2.26	13.2340	0.0001*
Attitude	Pre-test	10.18	1.49	10.49	1.98	-2.0316	0.0427
	Post-test	22.42	1.60	11.90	3.05	49.1801	0.0001*
	Follow-up	22.35	1.43	11.75	2.77	54.8524	0.0001*
	Pre-test to posttest	12.23	2.08	1.41	2.72	50.9951	0.0001*
	Pre-test to follow-up	12.17	1.98	1.26	2.69	52.6696	0.0001*
Perception	Pre-test	1.56	1.03	1.67	1.05	-1.1835	0.2372
	Post-test	5.60	0.56	4.20	0.88	21.5615	0.0001*
	Follow-up	5.60	0.56	4.20	0.88	21.5615	0.0001*
	Pre-test to post-test	4.03	1.14	2.53	1.23	14.4327	0.0001*
	Pre-test to follow-up	4.03	1.14	2.53	1.23	14.4327	0.0001*

*p<0.05

ideal advised for particular illnesses and for particular lengths of time, this regimen is rarely followed. Its overuse and misuse have reached epidemic proportions, as is the situation in India. It will be extremely concerning if the population of health science students, who are an important part of the medical community and who should be strongly opposed to the idea of drug abuse, use topical corticosteroids on themselves for cosmetic reasons. Since not all health science students will become dermatologists and there aren't enough dermatologists to treat everyone, learning about topical steroids should be part of the curriculum.

In a study conducted by Muthukumar and Ganapathy, among the majority of dentistry students concluded that they were knowledgeable with topical corticosteroid formulation, its use, and adverse effects. similarly in our study the health science students of both case and control groups were having pre-test knowledge low awareness in parameters such as application, usage, side effects about the topical corticosteroids but in the post test the knowledge about topical corticosteroids had been improved in case and remains same in control group. In another study conducted by Alsukait *et al.* among the physicians had shown low knowledge as similar to our study in pre-test. In our study the knowledge of the health science students was improved after educating, lack of adequate dermatology instruction in undergraduate curriculum may be to responsible for knowledge gaps regarding topical corticosteroids.

Topical corticosteroids are classified schedule-H pharmaceuticals under the 1945 drugs and Cosmetics Rules, which prohibits the purchase of these medications without a valid prescription from a licensed physician.²¹ In our study the health science students of both case and control groups were having pre-test attitude on schedule-H drugs awareness was less but after educating in the post test attitude case group was improved regarding schedule-H awareness on topical corticosteroids.²² In a survey conducted by Berce et al., on Family medicine providers, pharmacists interns and dermatology residents perception towards topical corticosteroids appears low which was modifiable characterized by significant improvements in overall knowledge and beliefs following participation in an evidence-based instructional session on the proper use of topical corticosteroids.²³ Similarly in our study regarding perception towards topical corticosteroids both case and control groups were having pre-test perception on topical corticosteroids was low but in post test case group got improved and control group remains same.²⁴

According to one of the surveys conducted by Parul Verma, Pathania S *et al.*, there is a significant gap in the knowledge, attitude, and practice of topical corticosteroids among medical graduates. This gap can be filled with appropriate undergraduate training, as our study demonstrates a significant improvement in KAP following instruction using educational tools such as student information leaflets, audio visuals, and seminars.²⁵ In this study, we focused on the students with the objective to find out

about their knowledge, attitudes, and perceptions about topical steroids topical corticosteroids and to make them educated about steroid abuse and misuse.²⁶ In a study conducted by Saxon D Smith et al., concludes there is a significant knowledge gaps about the use and safety of TCS among pharmacists similarly in our study pharmacy students also lacking knowledge gaps about the use and safety of TCS. So, it is our responsibility to educate medical fraternity on safety use of Topical Corticosteroids. Pharmacy students should be educated as they will be future community pharmacists who can educate the patients about TCS safety usage.²⁷⁻²⁹ In a study conducted by Ashley N Millard et al., concludes an interprofessional practice gap found between dermatologists and pharmacists.³⁰ Similarly, in our study the pre-test and post-test shows improvement in knowledge, attitude and perception on topical corticosteroids. The collaborative education and communication between the health science student groups is necessary required about application and adverse effects of topical corticosteroids.30

CONCLUSION

From this study we conclude that pre-test results revealed a significant knowledge, attitude, and perception gap among the population of students studying health sciences. Significant improvement in knowledge, attitude, and perception absorbed in intervention group in compared to control group after seminar and educating them through student information leaflet and audio video visuals. Hence educating students with educational tools, workshops, seminars and role plays conducted will be beneficial.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ABBREVIATIONS

KAP: Knowledge, Attitude and Perception; **TCS:** Topical Corticosteroids; **OTC:** Over the Counter; **IEC:** Institutional Ethical Committee; **MBBS:** Bachelor of Medicine and Bachelor of Surgery; **BDS:** Bachelor of Dental Surgery; **SPSS:** Statistical Package for Social Sciences; **SD:** Standard Deviation.

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