

# An Exploratory Investigation into the Understanding of Keratoconjunctivitis Among Staff Nurses at SCPM Hospital in Gonda

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## Abstract

**Background:** The primary aim of the present research was to evaluate the comprehension of keratoconjunctivitis among SCPM Hospital staff nurses in Gonda. Methodologically, the study was grounded in the general system theory proposed by Ludwig von Bertalanffy in 1968. To fulfill this aim, a non-experimental descriptive research design was utilized. The study included a sample of 40 SCPM Hospital staff nurses in Gonda who met the predefined inclusion criteria. Purposive sampling, a non-probability method, was utilized for participant selection. A structured sociodemographic data, knowledge questionnaire on keratoconjunctivitis were selected on the basis of the objective of the study.

**Result:** The overall score of knowledge among staff nurses were as follows: 19 (47.5%) inadequate knowledge, 14 (35.0%) moderate knowledge, and 7 (17.5%) adequate knowledge. **Conclusion:** The hypothesis was not accepted. The chi-square analysis suggests that there was no statistically significant association between knowledge and the selected sociodemographic factors.

**Keywords:** Keratoconjunctivitis, staff nurses, socio-demographic factors, knowledge score, descriptive research design.

## INTRODUCTION

Conjunctiva is a transparent and thin mucous membrane that envelops the sclera, spanning from the limbus to cover both the bulbar and palpebral regions. Keratoconjunctivitis is an inflammation affecting both the conjunctiva and the cornea, commonly associated with various causes, including viral, bacterial, autoimmune, toxic, and allergic factors. Keratoconjunctivitis sicca, commonly referred to as dry eye syndrome (DES), is identified by irregularities in the precorneal tear film and inflammatory alterations in the ocular surface, encompassing both the conjunctiva and cornea. It is a growing public health concern, with an estimated prevalence of 17% in women and 11% in men in the United States, though these figures may be underreported due to self-treatment without medical consultation. Higher prevalence rates are observed in patients with autoimmune conditions such as Sjogren syndrome, rheumatoid arthritis, systemic lupus erythematosus, sarcoidosis, and scleroderma, particularly in dry climates. Dry eye disease (DED), known by various terms such as dry eye syndrome (DES), keratoconjunctivitis sicca (KCS), and keratitis sicca, is a multifaceted eye surface condition marked by a disruption in the stability of the tear film. This imbalance often leads to ocular symptoms and visual impairment attributed to tear

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film instability, inflammation, and damage to the ocular surface, and abnormalities in nerve sensation [1–3].

Vernal keratoconjunctivitis (VKC) represents a chronic and severe form of allergic conjunctivitis affecting both eyes and significantly impacting daily activities such as school or work. It is considered a severe manifestation of allergies typically observed in warm, dry regions, particularly tropical and sub-tropical areas [4]. In Ethiopia, its prevalence ranges from 5.2% to 7.3%. The prevalence of vernal keratoconjunctivitis was determined to be 5.8% (95% confidence interval [CI]: 4.14, 7.53), with mixed type VKC being the most commonly observed form, accounting for 81.4% (35 out of 43 cases) [5].

After the onset of the coronavirus disease 2019 (COVID-19) in December 2019, several investigations have reported the detection of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in the conjunctival sac of individuals infected with the virus. Additionally, some patients have shown symptoms consistent with viral conjunctivitis. However, comprehensive reports detailing the progression of patients with COVID-19 complicated by recurrent viral conjunctivitis or keratoconjunctivitis remain scarce [6].

## AIM AND OBJECTIVES

The primary objective of this study was to evaluate the knowledge of staff nurses at SCPM Hospital in Gonda regarding keratoconjunctivitis. Specifically, the study aimed to:

1. Assess the knowledge level of staff nurses concerning keratoconjunctivitis in SCPM Hospital at Gonda.
2. Investigate the correlation between the knowledge scores of staff nurses regarding keratoconjunctivitis and their relevant socio-demographic variables.

## MATERIAL AND METHODOLOGY

A non-experimental descriptive research design was applied to assess the level knowledge on keratoconjunctivitis among staff nurses. The study was conducted from August 21, 2023 to September 17, 2023. The study consists of 40 staff nurses who are working SCPM Hospital at Gonda, Uttar Pradesh. The present study included staff nurses who are working casualty, medical and surgical ward and general ward. The subjects meeting the inclusion criteria were selected using purposive sampling. Approval for the study was obtained from the Director of SCPM Hospital, Nursing Superintendent, and Institutional Ethical Committee prior to commencement. Staff nurses participated after providing informed consent. The researchers introduced the knowledge questionnaire on keratoconjunctivitis, and data were collected using sociodemographic information and a structured knowledge questionnaire. Among the staff nurses, 19 exhibited inadequate knowledge, 14 demonstrated moderate knowledge, and 7 showed adequate knowledge levels. The tool exhibited high reliability with a score of  $r = 0.89$ . Data analysis was conducted using descriptive and inferential statistics through SPSS v.20.

### Section 1. Assessment of knowledge on keratoconjunctivitis among staff nurses working in SCPM Hospital at Gonda

Maximum 64.8 mean percentage was found in the knowledge related to terminology, definition, causes, risk factors, signs and symptoms of keratoconjunctivitis with mean  $7.78 \pm 2.63$ ; 58.9 mean percentage was found in the knowledge related to diagnostic measure, prevention, medical and surgical management of keratoconjunctivitis with mean  $4.13 \pm 2.17$ ; and 36.7 mean percentage was found in the knowledge related to complication of keratoconjunctivitis with mean  $1.10 \pm 0.81$ . An overall mean percentage of 65.0 was found with mean  $13.00 \pm 4.76$  (Table 1).

### Section 2. Association between the level of knowledge scores on keratoconjunctivitis among staff nurses with their selected sociodemographic variables.

In terms of age in years, there was no significant correlation observed with knowledge level, as the chi-square value of 3.94 was lower than the critical table value of 7.185 at a 0.05 level of significance.

**Table 1.** Mean, standard deviation (SD), and mean percentage of knowledge scores ( $N = 40$ ).

Knowledge aspects	No. of items	Max. score	Mean	SD	Mean %
Knowledge related to terminology, definition, causes, risk factors, signs and symptoms of keratoconjunctivitis	14	12	7.78	2.63	64.8
Knowledge related to complications of keratoconjunctivitis	3	3	1.10	0.81	36.7
Knowledge related to diagnostic measure, prevention, medical and surgical management of keratoconjunctivitis	7	7	4.13	2.17	58.9
Overall	24	20	13.00	4.76	65.0

**Table 2.** Association between sociodemographic variables and the level of knowledge scores on keratoconjunctivitis among staff nurses ( $N = 40$ ).

Sociodemographic data	<Median	>Median	Total	df	Chi-square	Table value	Inference
<b>1. Age in years</b>							
17–20	0	2	2	3	3.94	7.185	$P > 0.05$ NS
21–24	9	7	16				
25–28	8	5	13				
29 and above	3	6	9				
<b>2. Gender</b>							
Male	9	12	21	1	0.90	3.841	$P > 0.05$ NS
Female	11	8	19				
<b>3. Religion</b>							
Hindu	13	14	27	3	2.13	7.185	$P > 0.05$ NS
Muslim	5	6	11				
Christian	1	0	1				
Sikh	1	0	1				
<b>4. Type of family</b>							
Nuclear	6	6	12	2	0.00	5.991	$P > 0.0$ NS
Joint	13	13	26				
Extended	1	1	2				
<b>5. Educational qualification</b>							
M.Sc. Nursing	2	2	4	3	0.50	7.185	$P > 0.05$ NS
B.Sc. Nursing	8	10	18				
GNM	7	6	13				
ANM	3	2	5				
<b>6. Source of information</b>							
Book	9	12	21	3	3.83	7.185	$P > 0.05$ NS
Peer group	2	1	3				
Newspaper	4	6	10				
Mass media	5	1	6				
<b>7. Marital status</b>							
Married	9	7	16	2	0.63	5.991	$P > 0.05$ NS
Unmarried	10	11	21				
Divorced	1	2	3				
<b>8. Area of hospital</b>							
Urban	10	15	25	1	2.67	3.841	$P > 0.05$ NS
Rural	10	5	15				
<b>9. Family monthly income in rupees</b>							
≤10,000	4	6	10	4	2.77	9.488	$P > 0.05$ NS
10,001–15,000	13	12	25				
15,001–20,000	2	0	2				
>20,000	1	2	3				
<b>10. Area of clinical experience</b>							
Casualty ward	16	14	30	3	2.25	7.185	$P > 0.05$ NS
General ward	13	12	25				
Medical ward	2	0	2				
Surgical ward	1	2	3				

ANM, auxiliary nursing and midwifery; df, degrees of freedom; GNM general nursing and midwifery; NS, not significant.

Similarly, gender showed no significant association with knowledge level, with a chi-square value of 0.90 compared to the critical table value of 3.841. Religion also exhibited no significant relationship with knowledge level, as indicated by a chi-square value of 2.13 lower than the critical table value of 7.185. Type of family did not show a significant association with knowledge level, with a chi-square value of 0.00 lower than the critical table value of 5.991. Educational qualification similarly demonstrated no significant relationship with knowledge level, with a chi-square value of 0.50 lower than the critical table value of 7.185. Additionally, source of information showed no significant association with knowledge level, with a chi-square value of 3.83 lower than the critical table value of 7.185 at a 0.05 level of significance. Concerning marital status, the examination revealed a lack of significant correlation between the knowledge level and socio-demographic variables. This is evidenced by the chi-square value of 0.63, which falls below the critical table value of 5.991 at a 0.05 significance level (Table 2).

In the context of hospital location, the findings revealed a lack of significant association between knowledge levels, with the chi-square value of 2.67 being lower than the critical table value of 3.841 at a 0.05 significance level. Concerning family monthly income in rupees, the study indicated a non-significant association between knowledge levels, as the chi-square value of 2.77 was below the critical table value of 9.488 at a 0.05 significance level. In terms of clinical experience, the analysis suggested no significant correlation between knowledge levels, given that the chi-square value of 2.25 was lower than the critical table value of 7.185 at a 0.05 significance level.

## DISCUSSION

Keratoconjunctivitis refers to an eye condition characterized by inflammation in both the cornea and conjunctiva simultaneously. The primary cause of infectious conjunctivitis is human adenovirus (HAdV), which is responsible for up to 75% of all cases, affecting individuals across various age groups and demographics. Beyond ocular complications, HAdV can lead to systemic infections such as gastroenteritis, respiratory diseases, and dissemination in immunocompromised individuals.

The current research focused on a group of 40 staff nurses with prior experience at SCPM Hospital in Gonda, utilizing a purposive sampling technique for participant selection. Maximum 16 (40.0%) samples' age in years is 21 to 24 years, 13 (32.5%) samples' gender is female, 27 (67.5%) samples' religion is Hindu, 1 (2.5%) samples type of family is nuclear, and the remaining 2 (5.0%) samples type of family is extended. A total of 18 (45.0%) samples' educational qualification is GNM (general nursing and midwifery), 5(12.5%). Overall, 21 (52.5%) samples' marital status is unmarried and 16 (40.0%) samples' marital status is married. A total of 25 (62.5%) samples' area of hospital is urban and the remaining 15 (37.5%) samples' area of hospital is rural. A score of 64.8 mean percentage is found in the knowledge related to terminology, definition, causes, risk factors, signs and symptoms of keratoconjunctivitis with mean  $7.78 \pm 2.63$ ; 58.9 mean percentage is found in the knowledge related to diagnostic measure, prevention, medical and surgical management of keratoconjunctivitis with mean  $4.13 \pm 2.17$ ; and 36.7 mean percentage is found in the knowledge related to complications of keratoconjunctivitis with mean  $1.10 \pm 0.81$ . The overall mean percentage is determined to be 65.0, with a mean of  $13.00 \pm 4.76$ . Among the samples, 19 (47.5%) exhibited inadequate knowledge, 14 (35.0%) possessed moderate knowledge, and 7 (17.5%) demonstrated adequate knowledge.

The chi-square analysis, covering various sociodemographic variables such as age in years, gender, religion, type of family, educational qualification, marital status, family monthly income in rupees, area of hospital, area of clinical experience, and source of information, reveals a lack of significant correlation with the knowledge level.

This conclusion is derived from the chi-square value of 3.94, which is lower than the critical table value of 7.185 at a significance level of 0.05. Consequently, the null hypothesis (H1) is rejected. The study's findings indicate that a significant number of staff nurses have limited knowledge [7–11].

## CONCLUSION

In summary, the findings of the present study reveal that a notable number of staff nurse lacks adequate knowledge concerning keratoconjunctivitis. It is recommended to organize regular clinical teaching sessions conducted by experts to enhance the knowledge of all staff nurses.

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