

## Original Research Article

# Demographic and clinical profile of vernal keratoconjunctivitis and testing of health related quality of life in a tertiary hospital in South India

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## ABSTRACT

**Background:** Patient with vernal keratoconjunctivitis faces significant morbidity, which affects quality of life or; moreover, it can lead to vision threatening, corneal complication in severe cases and chronic cases coupled with potential iatrogenic side effects. Aim of this study to assess the demography, clinical features and quality of life of patients with vernal keratoconjunctivitis in a centre in South India.

**Methods:** General objective is to access the health related-quality of life and demographic study of VKC patients in a tertiary eye care hospital in south India. KINDL questionnaire with 30 questions is used for 30 paediatric patients. Percentage analysis for clinical assessment and interpretation method for questionnaire was used as statistical method.

**Results:** In clinical assessment papillary reaction (96.66%), giant papillae (83.34%), Horner Trantas dots (20%), shield ulcer (13.35%), corneal erosions (43.33%), conjunctival congestion (76.68%). In case of vision 36.66% had normal vision, 56.67% had mild vision loss, 6.68% with moderate vision loss.

**Conclusions:** VKC affects the health related quality of life of the patients significantly. The management of VKC should consider this aspect of health related quality of life, in addition to clinical parameters. From the assessment of KINDL questionnaire 30 samples 18 patients had high and 12 patients had average quality of life.

**Keywords:** Giant papillae, Horner Trantas dots, KINDL, Papillary, Shield ulcer, Vernal keratoconjunctivitis

## INTRODUCTION

Vernal keratoconjunctivitis is a chronic, bilateral, asymmetrical, seasonally exacerbated allergic inflammation of the conjunctiva.<sup>1</sup> Also known as spring catarrh.<sup>2</sup> It is an allergic disease affecting the eyes of young children, especially boys. It usually begins before the age of 10 years and often disappears at puberty, though it may change at time into another allergic eye disease known as atopic keratoconjunctivitis.<sup>3</sup> Major complaint of children with VKC are itchy eyes, watering and ropy discharge.<sup>3,4</sup>

Their vision may be blurred and they may be excessively sensitive to light. One characteristic symptom is that they

may have greater difficulty in opening their eyes and distracting effect of the condition may cause severe morbidity, reduction in outdoor activity and may lead to absenteeism of school.<sup>3,5</sup>

All these signs are often asymmetrical in both the eyes.<sup>6,7</sup> These patients may also have keratoconus and/or atopic cataract. The health-related quality of life of patients with VKC can be affected by intense itching and may cause dryness sensation, vision fatigue and even reading difficulties.<sup>4,8</sup>

This can lead to poor scholastic achievements and absenteeism at schools. Different questionnaires have

been developed to explore different aspects of the disease.<sup>9</sup>

## METHODS

In this study 30 patients with VKC, without any other systemic or ocular conditions were included. It was conducted from august 2015 to august 2016 at little flower hospital Angamaly Kerala. The age of the children we took in this study ranged from 5 to 21 years. Statistical analysis for this study was done in two phases.

In the first part of the study, we have analysed patients demographic and clinical features with the help of percentage analysis.

In second section the health related quality of life was analysed by using questionnaire. Here we used KINDL questionnaire with 30 questions. Each of the questions asked related to their lifestyle (Table 1).

In order to understand the extent to which quality of life affected each questions were graded as 0,1,2,3,4. As we move from zero to four the quality of life decreases. By evaluating on patient-by-patient basis how many of 30 patients quality of life have been affected has been understood (Table 2) On the basis of this value, H-QOL has been classified into three groups.

As mentioned bellow. First we have been found the total score and from that average score (Table 1, Table 2).

**Table 1: Question wise analysis of health related quality of life of patients.**

Sr. no.	Questions	Total score	Average score	Level of quality of life
1	You had to use eye drops	76	2.533	Average
2	You rubbed your eyes	70	2.333	Average
3	You had red eyes	61	2.033	Average
4	You had tearing	68	2.266	Average
5	You had, in the morning, Closed and sticky eyes	55	1.833	Average
6	You had itchy eyes	59	1.966	Average
7	You felt burning in your eyes	22	0.733	High
8	You had problems playing with pets	5	0.166	High
9	You had problems in light	43	1.433	Average
10	You had to use tissues	40	1.333	High
11	You had difficulties in reading	41	1.336	Average
12	You had eye secretions	59	1.966	Average
13	You had trouble meeting your friends	19	0.633	High
14	You had problems playing video games and computers	19	0.633	High
15	You felt embarrassed	14	0.466	High
16	You had difficulties in concentrating in homework or other activities	37	1.233	High
17	You had blurred vision	12	0.4	High
18	You had problems at school	38	1.266	High
19	You had trouble playing outdoors	50	1.666	Average
20	You had puffy eyes	32	1.066	High
21	You have eaten little	24	0.8	High
22	You had reduction in eyesight	10	0.333	High
23	You had difficulties in watching TV	41	1.366	Average
24	You cried easily	13	0.43	High
25	You slept badly	32	1.066	High
26	You had problems going to the school	31	1.033	High
27	You had problems falling asleep	20	0.666	High
28	You attended school regularly	32	1.066	High
29	You enjoyed playing with other children	36	1.2	High
30	You had difficulties opening your eyes completely	50	1.666	Average

### Concept of health-related quality of life

A state of complete physical, mental and social well-being and not merely the absence of disease and infirmity.<sup>4</sup>

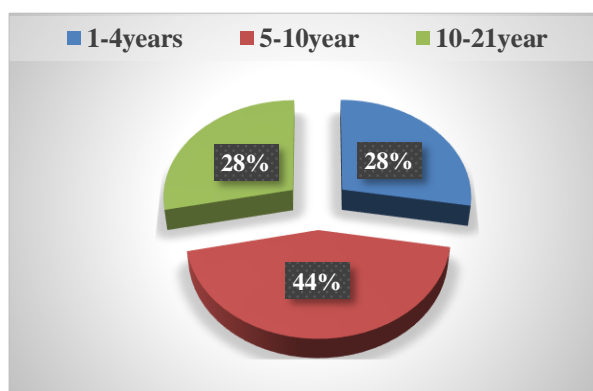
### Levels of quality of life

The bellow mentioned categorization is based on the interpretation method,

- High level quality of life: a score between 0 to 1.333 in the survey results towards the particular variable or total variable is indicate for high quality of life for VKC patients.
- Average level quality of life: A score between 1.334 to 2.666 in the survey results towards a particular variable or total variable is indicate for average quality of life for VKC patients.
- Low level quality of life: A score between 2.667 to 4.

## RESULTS

According to age criteria, 5 to 10-year age group were more affected than bellow 5 and above 10 years of old (Figure 1). In gender wise assessment 63.33% were males and 26.66% were females (Table 3). For assessing educational status of patients they were categorised into pre-schoolers and schoolers. Again schoolers were categorised into two different group (5 to 10-year-old and 10 to 21-year-old). Out of that 29.33% were pre-schoolers and 70.67% were school going patients. In that 40.67% were 5 to 10-year group and 30% were 10 to 21-year group (Table 4).



**Figure 1: Age wise distribution of the patients.**

So more affecting age group is 5 to 10 year age group. In case of grading of visual acuity 36.67% had normal vision with 56.66% and 6.66% had mild and moderately affected vision (Table 5).

In sign wise evaluation papillary reaction (96.67%), giant papillae (83.33%), Horner Trantas dots (20%), shield ulcer (13.33%), corneal erosions (43.33%), conjunctival congestion (76.66%) were present (Table 6).

In patient wise scoring of health related quality of life 20 patients had high level of quality of life and 10 patients had average level of quality of life (Table 2) and in question wise assessment 12 questions show average level of quality of life that is, they find it more difficult to do or face what is stated in question (Table 1).

**Table 2: Patient wise health related quality of life assessment.**

Sr. no.	Patients	Average score	Total score	Level of quality of life
1	PT1	34	1.133	High
2	PT2	58	1.933	Average
3	PT3	37	1.233	High
4	PT4	30	1	High
5	PT5	62	2.066	Average
6	PT6	63	2.1	Average
7	PT7	33	1.1	High
8	PT8	54	1.8	Average
9	PT9	64	2.133	Average
10	PT10	28	0.933	High
11	PT11	53	1.766	Average
12	PT12	29	0.966	High
13	PT13	21	0.7	High
14	PT14	37	1.233	High
15	PT15	72	2.4	Average
16	PT16	35	1.166	High
17	PT17	51	1.7	Average
18	PT18	33	1.1	High
19	PT19	73	2.433	Average
20	PT20	21	0.7	High
21	PT21	14	0.446	High
22	PT22	26	0.866	High
23	PT23	24	0.8	High
24	PT24	13	0.433	High
25	PT25	18	0.6	High
26	PT26	43	1.433	Average
27	PT27	13	0.433	High
28	PT28	22	0.733	High
29	PT29	26	0.866	High
30	PT30	22	0.733	High

**Table 3: Variable wise percentage calculation in gender.**

Gender	Total score	Average
Male	19	63.33%
Female	8	26.66%

**Table 4: Variable wise percentage calculation of preschoolers and schoolers.**

Variables	Average
Pre-schoolers	29.33%
Schoolers (5-10 year old)	46.67%
Schoolers (10-21 year old)	30%

**Table 5: Percentage calculation of vision by grading of visual acuity.**

Grading	Percentage
Normal	36.66%
Mild	56.66%
Moderate	6.66%
Severe	0%

**Table 6: Percentage analysis of clinical features.**

Signs	Percentage
papillary reaction	96.66%
Giant papillae	83.33%
Horner Trantas dots	20%
Shield ulcer	13.33%
Corneal erosions	43.33%
Conjunctival conjuction	76.66%

## DISCUSSION

From this study authors are trying to capture physical, psychological and practical aspects of health related quality of life (HR-QOL) of 30 VKC patients. This is generated and tested according to the score of questionnaire. Authors interpreted the level of quality of life based on scoring. A similar study was done by Dr. Ujwala S Sabo et al. They developed QUICK questionnaire for initial validation. 42 questions asked to 30 children with vernal keratoconjunctivitis in the development phase of QUICK questionnaire. Among 42 questions 33 questions were scored as average level of quality of life and 9 with high level of quality of life.<sup>5</sup> In this study 30 questions were asked to 30 patients. In that 12 questions were scored average quality of life and rest of the 18 questions scored high level quality of life. In patient wise scoring 33% (n=10) patients had average quality of life and 67% (n=20) had high quality of life.

Patients with VKC also experienced disease related limitation in their daily routine of their life and while playing sports and meeting friends.<sup>10</sup> Patients reported limitation in their activities that cause exposure to allergens such as from dusty particles while playing in ground and it may lead to irritation in their eyes and thus disease become more severe. Treatment of VKC should improve not only the children's signs and symptoms, but also their daily life and functioning.

## CONCLUSION:

The clinical pattern of VKC seen in South India is similar to those reported from other tropical countries. In addition to the ocular involvement, VKC affects the health related quality of life of the patients significantly. The management of VKC should consider this aspect of

health related quality of life, in addition to clinical parameters.

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