

Quality and readability of online information on Keratoconus in Portugal and Brazil

Autores: Celso Costa¹, Renato Souza Oliveira^{1,5}, João Gil¹⁻⁴, Esmeralda Costa¹⁻⁴, Cristina Tavares¹⁻⁴, Andreia Rosa¹⁻⁴, Maria João Quadrado¹⁻⁴, Joaquim Murta¹⁻⁴

Instituições: 1 Centro Hospitalar e Universitário de Coimbra (CHUC), Coimbra, Portugal

2 Clinical Academic Center of Coimbra (CACC), Coimbra, Portugal

3 Faculdade de Medicina da Universidade de Coimbra (FMUC), Coimbra, Portugal

5 Universidade Federal de São Paulo (Unifesp), São Paulo, Brasil

Background and Purpose

- **Keratoconus (KC):** most common primary corneal ectasia
- Nowadays, patients turn to the **Internet** for **answers to their expectations** in Dx, Tx and Px
- However, the **webpages are not filtered or submitted to evaluation** and quality control before getting published
- Aim: **to evaluate the quality and readability of the online information** available for the patients **regarding KC in Portugal and in Brazil.**

Materials and Methods

- 2 independent ophthalmologists and 1 ophthalmologist supervisor **evaluated 30 portuguese and 30 brazilian websites** from a **Google search by order of appearance** with the word **“Queratocone”** and **“Ceratocone”**, respectively
- 2 **quality scores** were used: a quality index of consumer health information (DISCERN) and the Journal of the American Medical Association (JAMA) benchmark
- 3 **Readability scores** were used: FleschKincaid Reading Ease (FRE), FleschKincaid Grade (FKG) and Automated Readability Index (ARI).

Table 1: e.g. of a quality score (JAMA)

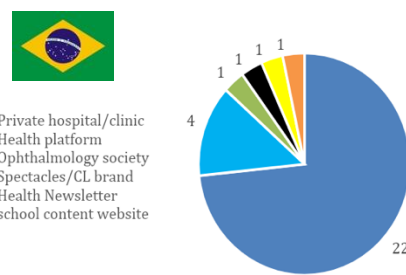
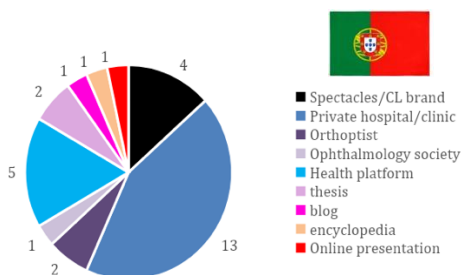
Authorship	Authors and contributors, their affiliations, and relevant credentials should be provided
Attribution	References and sources for all content should be listed clearly, and all relevant copyright information should be noted
Disclosure	Website “ownership” should be prominently and fully disclosed, as should any sponsorship, advertising, underwriting, commercial funding arrangements or support, or potential conflicts of interest
Currency	Dates when content was posted and updated should be indicated

Table 2: e.g. of a readability score (FRE) and the correspondent description of style

0-30	Very difficult
30-50	Difficult
50-60	Fairly difficult
60-70	Standard
70-80	Fairly easy
80-90	Easy
90-100	Very easy

Results

Origin of websites



Comparison between countries

Table 3: Comparison between countries

Domain Accessed	Portugal	Brazil	Comparison
Quality (JAMA) (mean±SD)	1,13±1,18 (0-3)	1,07±1,00 (0-3)	p=0.166
Quality (DISCERN) (mean±SD)	34,07±11,71 (17-60)	38,17±10,51 (22-66)	p=0.817
Readability (FRE) (mean±SD)	33,16±12,61 (-3,5-55,9) “difficult to read”	39,19±5,58 (27,6-51,3) “difficult to read”	p=0,0239
Popularity:			
➢ Correlation with JAMA	r=-0,0910, p=0,632	r=-0,359, p=0,0514	p=0,148
➢ Correlation with DISCERN	r=-0,330, p=0,0749	r=-0,135, p=0,477	p=0,223
➢ Correlation with FRE	r=-0,0488, p=0,801	r=-0,0295, p=0,881	p=0,472

Conclusions

Between countries:

- Websites from **private healthcare** predominated (more emphasis in Brazil)
- **Quality: low in both countries** (slight tendency to better results in Brazil)
- **Readability: significantly better in Brazil**
- **Popularity ranking: not a results’ influencer** in both countries.

Overall:

- **Information on KC** available online to Portuguese-speaking patients: **poor quality and difficult to interpret.**
- **Ophthalmologists have a shared responsibility to tackle this challenge** through multifold efforts
- **Educating our patients on how to find reputable websites** can help them **navigate their life with KC.**