



ESCOLA SUPERIOR DE
TECNOLOGIA DA SAÚDE
DE LISBOA

TENDÊNCIAS DE INVESTIGAÇÃO EM ORTÓPTICA: UMA ANÁLISE BIBLIOMÉTRICA

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15 de abril de 2023

XXIII CONGRESSO NACIONAL DE ORTOPTISTAS

INTRODUÇÃO



- Definição do tema: o que é a ortóptica, onde e como se desenvolveu, ...
"A ortóptica é uma ciência que se dedica ao diagnóstico e ao tratamento de distúrbios da visão binocular e dos movimentos oculares."
- Foco em quatro temas específicos: **estrabismo, ambliopia, insuficiência de convergência e tratamento ortóptico**
 - Demonstração da importância de cada um;
 - Relevância do papel do ortoptista nestes casos.

	Estrabismo	Ambliopia	Insuficiência de Convergência
Prevalências globais (%)	1.93	1.00-5.00	2.00-17.00

Fontes: Hashemi H, Pakzad R, Heydarian S, et al. Global and regional prevalence of strabismus: a comprehensive systematic review and meta-analysis. *Strabismus* 2019;27(2):54–65; doi: 10.1080/09273972.2019.1604773.

Hu B, Liu Z, Zhao J, et al. The Global Prevalence of Amblyopia in Children: A Systematic Review and Meta-Analysis. *Front Pediatr* 2022;10; doi: 10.3389/fped.2022.819998.

Trieu LH, Lavrich JB. Current concepts in convergence insufficiency. *Curr Opin Ophthalmol* 2018;29(5):401–406; doi: 10.1097/ICU.0000000000000502.

INTRODUÇÃO



- Introdução à análise bibliométrica

“Devido à influência destas patologias na saúde pública foi desenvolvida uma análise das tendências de desenvolvimento e *hotspots* de investigação em Ortóptica, utilizando a análise bibliométrica de publicações.”

- Breve definição de bibliometria

“...técnica quantitativa para o estudo de padrões de publicações, através de análise estatística...”

INTRODUÇÃO



OBJETIVOS



Analisar do ponto de vista bibliométrico as diferentes tendências de investigação na área da ortóptica



Identificar os autores mais influentes



Entender os temas mais citados e áreas de intervenção da ortóptica



Conhecer o impacto que esta literatura tem na comunidade científica

METODOLOGIA



ESTRATÉGIA DE PESQUISA

PALAVRAS-CHAVE



"amblyopia"

"binocular vision"

"convergence insufficiency"

"esophoria"

"esotropia"

"exophoria"

"exotropia"

"heterophoria"

"heterotropia"

"near point of convergence"

"ocular motility disorders"

"orthoptic treatment"

"orthoptics"

"squint"

"strabismus"

MODIFICADORES BOOLEANOS

AND

OR

""

METODOLOGIA

ESTRATÉGIA DE PESQUISA



A pesquisa dos artigos incluídos neste estudo foi realizada entre 6 de janeiro de 2023 e 8 de abril de 2023

Foram incluídos todos os artigos publicados até 8 abril de 2023

METODOLOGIA



ESTRATÉGIA DE PESQUISA – CRITÉRIOS DE INCLUSÃO/EXCLUSÃO

Critérios de inclusão

Foram tidos em consideração todos os artigos enquadrados nos temas:

- *Estrabismo*
- *Ambliopia*
- *Insuficiência de convergência*
- *Tratamento ortóptico*

Critérios de exclusão

Estudos em animais

Revisões e Meta-análises

Estudos de caso

Artigos clássicos

Cartas

Editoriais

Comentários

Livros e documentos

Artigos em qualquer língua que não Inglês, Português e Espanhol

METODOLOGIA

ESTRATÉGIA DE PESQUISA



Foram utilizadas as ferramentas bibliométricas para a recolha de dados PubMed (NLM, EUA), Scopus (Elsevier, Holanda) e Web of Science (WoS; Clarivate, EUA).



Figuras 1, 2 e 3 – Plataformas PubMed, Scopus e Web of Science, respetivamente

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NIH National Library of Medicine
National Center for Biotechnology Information

2019351@alunos.este...

PubMed Advanced Search Builder

PubMed®
User Guide

Filters applied: Clinical Study, Clinical Trial, Clinical Trial Protocol, Clinical Trial, Phase I, Clinical Trial, Phase II, Clinical Trial, Phase III, Clinical Trial, Phase IV, Comparative Study, Controlled Clinical Trial, Corrected and Republished Article, Evaluation Study, Multicenter Study, Observational Study, Pragmatic Clinical Trial, Randomized Controlled Trial, Technical Report, Validation Study, Humans. [Clear all](#)

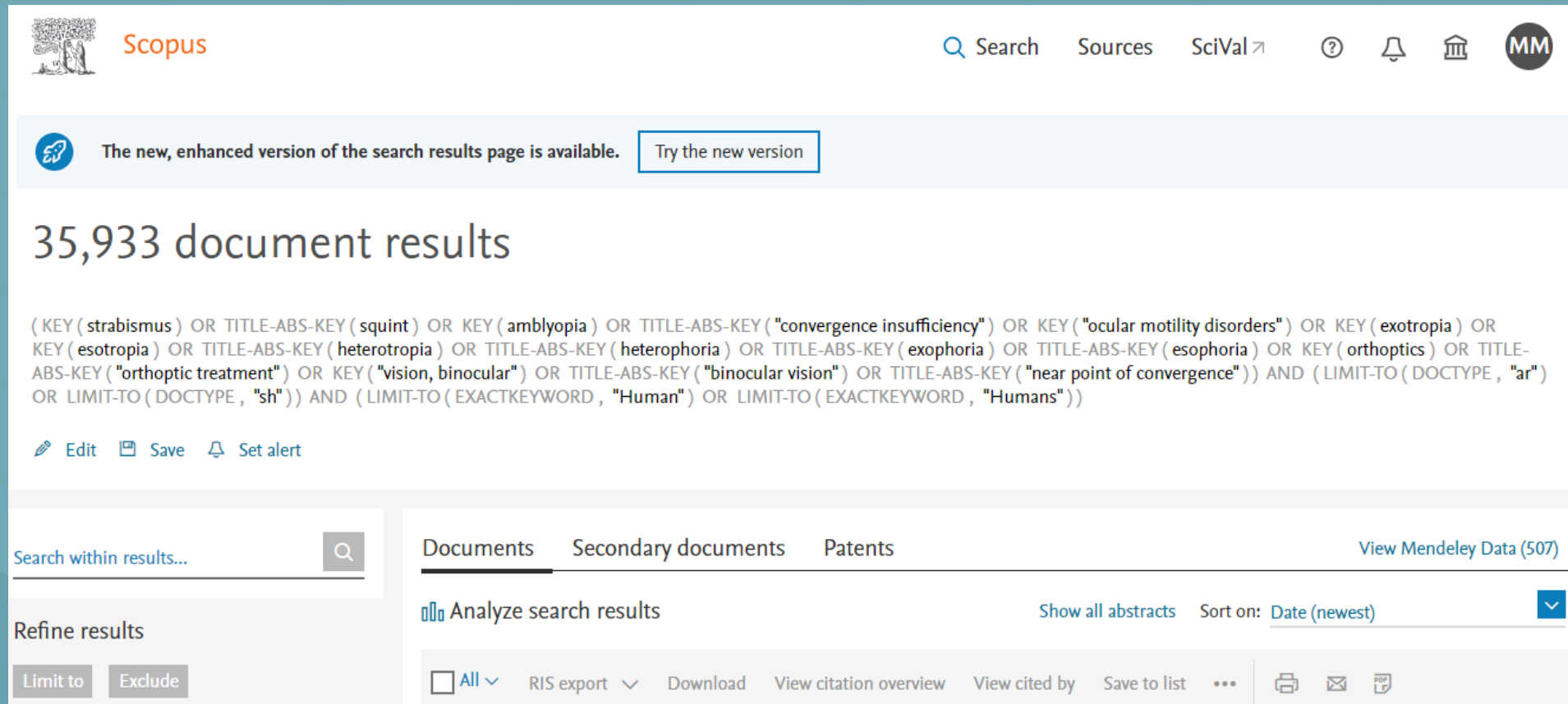
Add terms to the query box

("strabismus"[MeSH Terms] OR "squint"[Title/Abstract] OR "amblyopia"[MeSH Terms] OR "convergence insufficiency"[Title/Abstract] OR "ocular motility disorders"[MeSH Terms] OR "exotropia"[MeSH Terms] OR "esotropia"[MeSH Terms] OR "heterotropia"[Title/Abstract] OR "heterophoria"[Title/Abstract] OR "exophoria"[Title/Abstract] OR "esophoria"[Title/Abstract] OR "orthoptic treatment"[Title/Abstract] OR "orthoptics"[MeSH Terms] OR "vision, binocular"[MeSH Terms] OR "binocular vision"[Title/Abstract] OR "near point of convergence"[Title/Abstract])

Figura 4 - Exemplo de pesquisa na plataforma PubMed, utilizando as palavras-chave e modificadores booleanos referidos

METODOLOGIA

ESTRATÉGIA DE PESQUISA



The screenshot shows the Scopus search results page. At the top left is the Scopus logo. The top right navigation bar includes 'Search', 'Sources', 'SciVal', and user icons. A notification banner states: 'The new, enhanced version of the search results page is available. Try the new version'. The main heading reads '35,933 document results'. Below this is a complex boolean search query: `(KEY (strabismus) OR TITLE-ABS-KEY (squint) OR KEY (amblyopia) OR TITLE-ABS-KEY ("convergence insufficiency") OR KEY ("ocular motility disorders") OR KEY (exotropia) OR KEY (esotropia) OR TITLE-ABS-KEY (heterotropia) OR TITLE-ABS-KEY (heterophoria) OR TITLE-ABS-KEY (exophoria) OR TITLE-ABS-KEY (esophoria) OR KEY (orthoptics) OR TITLE-ABS-KEY ("orthoptic treatment") OR KEY ("vision, binocular") OR TITLE-ABS-KEY ("binocular vision") OR TITLE-ABS-KEY ("near point of convergence")) AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "sh")) AND (LIMIT-TO (EXACTKEYWORD , "Human") OR LIMIT-TO (EXACTKEYWORD , "Humans"))`. Below the query are 'Edit', 'Save', and 'Set alert' options. The results section has tabs for 'Documents', 'Secondary documents', and 'Patents', with a link to 'View Mendeley Data (507)'. There are options to 'Analyze search results', 'Show all abstracts', and 'Sort on: Date (newest)'. At the bottom, there are options to 'Limit to', 'Exclude', and a list of actions: 'All', 'RIS export', 'Download', 'View citation overview', 'View cited by', 'Save to list', and icons for printing, email, and saving.

Figura 5 - Exemplo de pesquisa na plataforma Scopus, utilizando as palavras-chave e modificadores booleanos referidos

METODOLOGIA

ESTRATÉGIA DE PESQUISA



The screenshot displays the Web of Science search interface. At the top, the Clarivate logo is on the left, and 'English' and 'Products' are on the right. Below this, the 'Web of Science' logo and 'Search' text are on the left, and the user's name 'Margarid Barbosa' is on the right. The search results section shows '19,308 results from Web of Science Core Collection for:'. The search query is displayed in a box: `((((((((((((((TS=(strabismus)) OR TS=(amblyopia)) OR TS=("convergence insufficiency")) OR TS=(squint)) OR TS=("ocular motility disorder...)) OR TS=(esotropia)) OR TS=(exotropia)) OR TS=(heterotropia)) OR TS=(esophoria)) OR TS=(exophoria)) OR TS=(heterophoria)) OR TS=("near point of convergence")) OR TS=(orthoptics)) OR TS=("orthoptic treatment")) OR TS=("binocular vision")) OR TS=("vision, binocular")`. Below the query box, there are buttons for 'Analyze Results', 'Citation Report', and 'Create Alert'. A 'Query Preview' section shows the same query with a scroll bar. At the bottom of the preview, there are buttons for '+ Add date range', 'x Clear', and 'Search'.

Figura 6 - Exemplo de pesquisa na plataforma Web of Science, utilizando as palavras-chave e modificadores booleanos referidos

METODOLOGIA



ESTRATÉGIA DE PESQUISA – CRITÉRIOS DE INCLUSÃO/EXCLUSÃO

PUBMED

Filters applied: Clinical Study, Clinical Trial, Clinical Trial Protocol, Clinical Trial, Phase I, Clinical Trial, Phase II, Clinical Trial, Phase III, Clinical Trial, Phase IV, Comparative Study, Controlled Clinical Trial, Corrected and Republished Article, Evaluation Study, Multicenter Study, Observational Study, Pragmatic Clinical Trial, Randomized Controlled Trial, Technical Report, Validation Study, Humans. [Clear all](#)

SCOPUS

AND (LIMIT-TO (EXACTKEYWORD, "Human" OR LIMIT-TO (EXACTKEYWORD, "Humans"))) AND (LIMIT-TO (DOCTYPE, "ar") OR LIMIT-TO (DOCTYPE, "sh"))

WOS

Refined By: Document Types: Article or Early Access or Correction or Discussion or Correction, Addition [Clear all](#)

ELIMINAÇÃO DE ARTIGOS DUPLICADOS

The screenshot displays the Mendeley Desktop application interface. The main window shows a list of documents under the 'All Documents' tab. The list includes columns for Authors, Title, Year, Published In, and Added. One document is highlighted in blue: 'Partial Recovery of Amblyopia After Fellow Eye Ischemic Optic Neuropathy' by Resnick, H H; Bear, M F; Gaier, E D, published in 2023 in the JOURNAL OF NEURO-OPTHALMOLOGY.

On the right side, the 'Details' panel for the selected document is visible. It shows the article title, authors (H. Resnick, M. Bear, E. Gaier), journal information (JOURNAL OF NEURO-OPTHALMOLOGY, Volume 43, Issue 1, Pages 76-81), and a section for 'Abstract:' and 'Tags:'. The 'Citation Key' is listed as 'Resnick2023'.

Authors	Title	Year	Published In	Added
Slepski, N E; Jackson, K M; Mitro, J P; Banaag, A; Madsen, C; Wittenborn, J...	Prevalence of Eye and Vision Disorders in the Military Health System, Fiscal Year 2018		MILITARY MEDICINE	abr 8
Zhu, Q; Zhao, Q; Liang, R; He, X; Gao, M J	Effectiveness of binocular therapy as a complementary treatment of part-time patching in older amblyopic children: a randomized clinical trial		INTERNATIONAL OPHTHALMOLOGY	abr 8
Shen, T; Chen, J C; Kang, Y; Deng, D M; Lin, X M; Wu, H P; Li, J R; Wang, ...	Surgical treatment versus observation in moderate intermittent exotropia (SOMIX): study protocol for a randomized controlled trial	2023	TRIALS	abr 8
Resnick, H H; Bear, M F; Gaier, E D	Partial Recovery of Amblyopia After Fellow Eye Ischemic Optic Neuropathy	2023	JOURNAL OF NEURO-OPTHALMOLOGY	abr 8
Wilson, S; Ctori, I; Shah, R K; Conway, M L; Willis, S J; Suttle, C	An investigation of barriers and enablers to community eye care for children in England: A qualitative descriptive study		OPHTHALMIC AND PHYSIOLOGICAL OPT...	abr 8
He, L P; Huang, C Y; Hu, Q J; Zeng, J S; Wang, H Y	Experimental Investigation on Failure Mechanism of Hot Dry Rock under Microwave Irradiation	2023	INTERNATIONAL JOURNAL OF GEOME...	abr 8
Li, T X; Zuo, X X; Zhang, T; Liu, L; Wang, Z Z; Han, L; Liu, H; Wang, Z J	Patients with Intermittent Exotropia and Exophoria Exhibit Non-aggravated Lens Decentration After Orthokeratology Application: The Nanjing Strabis...		OPHTHALMOLOGY AND THERAPY	abr 8
Maiwald, T; Li, T; Hotopan, G R; Kolb, K; Disch, K; Potschka, J; Haag, A; Di...	Analysis and compensation of frequency offset in co-site adjacent channel interference suppression		PROCEEDINGS OF THE IEEE	abr 8
Heo, H; Lambert, S R	Ocular Motor Nerve Palsy After Traumatic Brain Injury: A Claims Database Study	2023	JOURNAL OF NEURO-OPTHALMOLOGY	abr 8
[Anonymous]	Esotropia and Exotropia Preferred Practice Pattern (R)	2023	OPHTHALMOLOGY	abr 8
Jiang, J J; Zuo, H X; Li, S Y; Cao, D; Li, L	Long-Term Effects of Botulinum Toxin A for Horizontal Concomitant Strabismus in Chinese Children		SEMINARS IN OPHTHALMOLOGY	abr 8
Quaranta-Leoni, F M; Quaranta-Leoni, C; Di Marino, M	Marcus-Gunn jaw winking syndrome: case series study and management algorithm		ORBIT-THE INTERNATIONAL JOU...	abr 8
Guimaraynz, H D; Arroyo, S I; Ibanez, S A; Oliva, D E	A monocular wide-field speed sensor inspired by the crabs' visual system for traffic analysis	2023	BIOINSPIRATION & BIOMIMETICS	abr 8
Modrzejewska, M; Wozniak, P; Bosy-Gasior, W; Kaniewski, A	Disturbances of Ocular Circulation in Color Doppler Imaging, Retinal Changes and Electrophysiological Tests with Neuro-Ophthalmological Clini...	2023	JOURNAL OF CLINICAL MEDICINE	abr 8
Mahalingam, M S; Jency, A R; Ramasamy, P; Ko, S B	Beam-squint rectified balanced antipodal Vivaldi antenna with sliced fins and quarter-wavelength labyrinth director		MICROWAVE AND OPTICAL TECHNOLO...	abr 8
Steib, A; Karcenty, A; Calache, E; Franckhauser, J; Dupeyron, J F; Spe...	Effects of subtenon anesthesia combined with general anesthesia on perioperative analgesic requirements in pediatric strabismus surgery	2005	REGIONAL ANESTHESIA AND PA...	abr 8
Itokawa, T; Matsumoto, T; Matsumura, S; Kawakami, M; Hori, Y	Ocular blood flow evaluation by laser speckle flowgraphy in pediatric patients with anisometropia	2023	FRONTIERS IN PUBLIC HEALTH	abr 8
Liinamaa, M J; Leiviska, I L; Saarela, V O	Prevalence of residual amblyopia in adulthood and its association on educational outcome and quality of life in the Northern Finland Birth Cohort		ACTA OPHTHALMOLOGICA	abr 8
Cao, Y W; Wang, Y; Li, B; Zhu, D H; Sang, T; Du, X Y; Shi, W J; Yang, L	Analysis of risk factors associated with the high incidence of amblyopia in preterm infants at the corrected gestational age of 12 months	2023	BMC PEDIATRICS	abr 8
Rogers, D L; Chheda, L; Ford, C; ...	The effect of surgical preparation technique on the bacterial load of surgical ...	2011	JOURNAL OF AAPOS	abr 8

Figura 10 - Plataforma Mendeley para eliminação de artigos duplicados

ELIMINAÇÃO DE ARTIGOS DUPLICADOS

The screenshot displays the Rayyan platform interface for managing research articles. On the left, there are several panels for filtering and categorizing articles:

- Inclusion decisions:** A list showing the status of 59,253 articles: Undecided (59,253), Maybe (2), Included (8), Excluded (5,239), and Conflict (1).
- Keywords for exclude:** A section to add new keywords for exclusion.
- Exclusion reasons:** A list of reasons for exclusion, such as Case Report (2,757), foreign language (1,362), case report (802), Review (517), Animals (386), Meta analyse (90), Letter (48), Comment (37), Editorial (22), Lecture (7), No Keyword (3), and background article (2).
- Keywords for include:** A list of keywords to include, such as Strabismus (9,079), Amblyopia (6,975), Binocular vision (1,850), randomized (1,157), trial (1,150), compared with (1,081), and Convergence (538).

The main area shows a list of articles with columns for Date, Title, Authors, and Rating. The current view is filtered to show 5 to 10 of 1,050 unique entries. The top article is dated 2022-01-01 with a 93% rating. It is a Case Report titled "A boy with amblyopia and familial exudative vitreoretinopathy harboring a new mutation of LRP5 and OPA1: A case report" by Chen, C.; Guo, S.; Zhao, R.; et al. The article is marked as "Margarida" and "Case Report".

Below the list, there are buttons for "Include", "Maybe", and "Exclude", along with fields for "Reason" and "Label". There are also buttons for "Add Note", "Highlights ON", and "Upload PDF full-texts".

The detailed view of the selected article shows the title "A boy with amblyopia and familial exudative vitreoretinopathy harboring a new mutation of LRP5 and OPA1: A case report" and the authors "Chen, C L; Guo, S T; Zhao, R; Liu, S B; Wu, J J; Xiao, Y Y; Hou, S M; Jiang, L B;". The journal is "FRONTIERS IN GENETICS - Volume 13, Issue 0, pp. - published 2022-01-01". The publication type is "Journal Article" and the topic is "Mutation". The system ID is "462151032" and the search method is "Uploaded References [wosmendeley.ris]". The DOI is "10.3389/fgen.2022.998846".

At the bottom right, there is a "Help" button and a "Margarida" label.

Figuras 11 e 12 – Plataforma Rayyan para eliminação de artigos duplicados e exclusão/inclusão de artigos pretendidos para análise

RESULTADOS



BASE DE DADOS	Nº TOTAL DE ARTIGOS	Nº TOTAL DE ARTIGOS SUPEITOS DE DUPLICADOS
PUBMED	8 975	
SCOPUS	35 819	
WEB OF SCIENCE	19 308	32 208
TOTAL	64 102	

Tabela 1 - Número total de artigos científicos retirados das bases de dados

RESULTADOS - VOSVIEWER

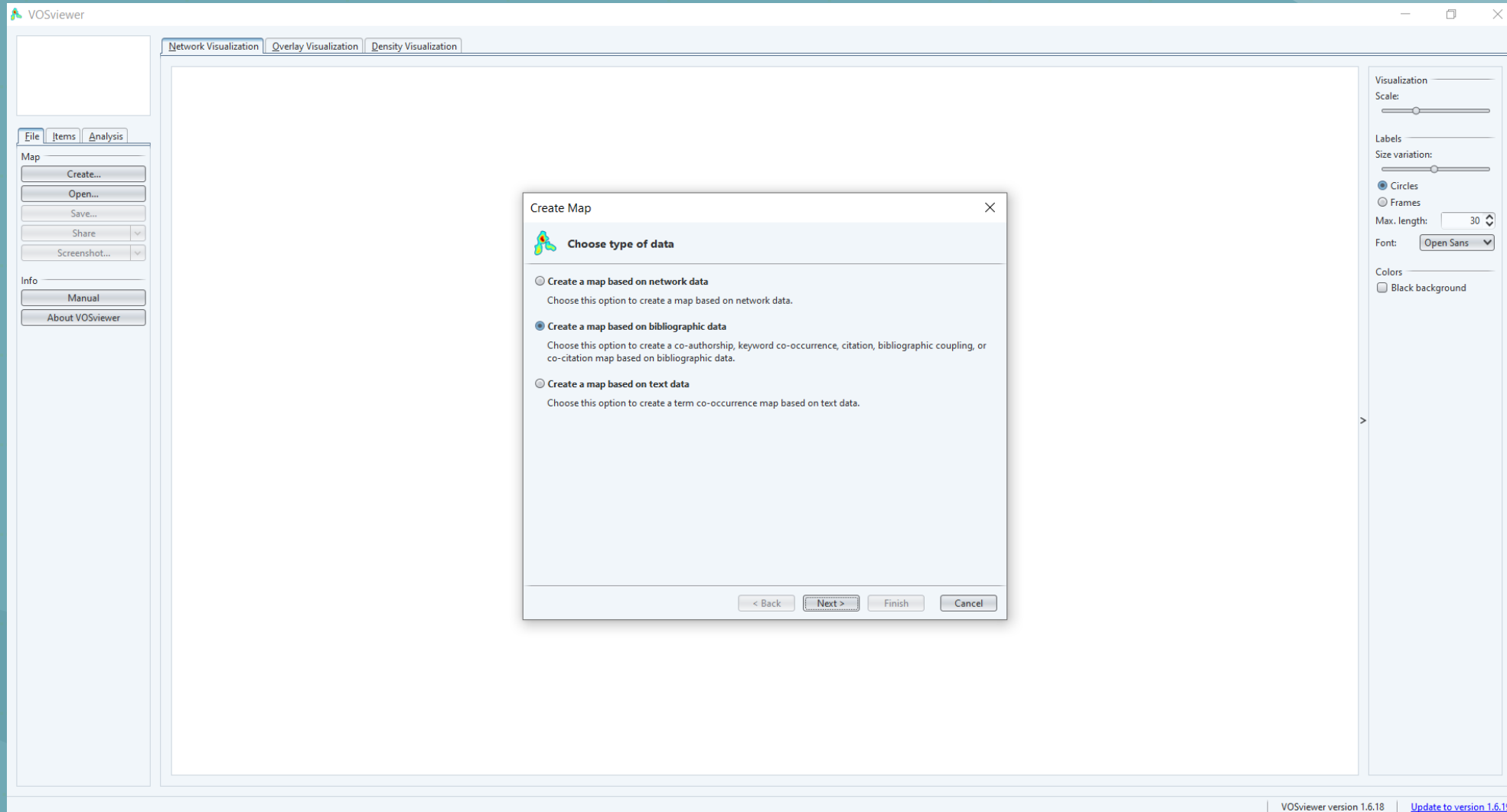
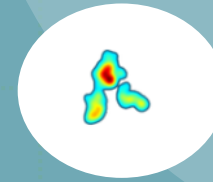


Figura 13 - Plataforma VOSViewer

RESULTADOS



INDICADORES BIBLIOMÉTRICOS - ferramentas que avaliam o desempenho da produção científica



FATOR DE IMPACTO (FI) - Avalia o impacto das revistas, determinando a frequência de citação de uma revista, contabilizando as citações efetuadas, num determinado ano.



CITESCORE (CS) - Número de citações num ano para artigos publicados por uma revista num período de tempo, sobre o número de artigos publicados por essa revista naquele período de tempo. Difere do FI por se basear em documentos publicados nos três anos anteriores.



ÍNDICE H - Combina a produtividade com o impacto das citações das publicações de um investigador. Corresponde ao número de artigos com, pelo menos, o mesmo número de citações de um autor.



Q SCORE - Determina a classificação das revistas científicas com base no seu campo de conhecimento e fator de impacto.

RESULTADOS



Descrição das publicações

Tendências das publicações

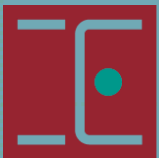
Distribuição dos países

Distribuição dos autores

Distribuição das revistas

Investigação em Ortóptica: palavras-chave e tendência

Investigação em Ortóptica: Redes de citação



OBRIGADA PELA VOSSA ATENÇÃO!

