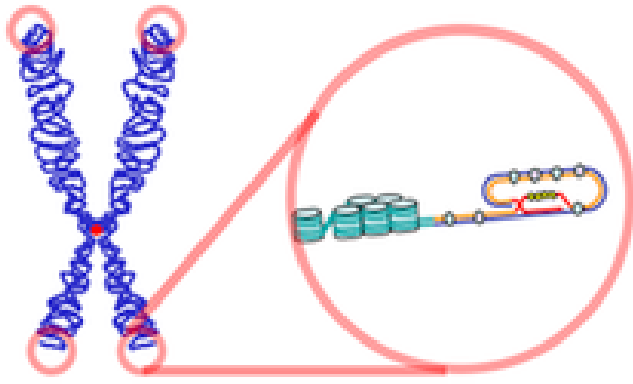


ANÁLISIS BIBLIOMÉTRICO BÁSICO CON BIBLIOMETRIX: EL CASO DE LA LONGITUD DEL TELÓMERO EN NIÑOS

Daniel Prieto-Botella (daniel.prieto@goumh.umh.es) , Desirée Valera-Gran, Paula Fernández-Pires, Paula Peral-Gómez, Miriam Hurtado-Pomares, Alicia Sánchez-Pérez, Iris Juárez-Leal, Cristina Espinosa-Sempere, Eva María Navarrete-Muñoz

Longitud del telómero e infancia



- Secuencias de ADN no codificante
- Protegen al genoma durante la replicación celular
- Afectado por los estilos de vida
- Edad Biológica

➤ [Nutrition](#). 2015 Feb;31(2):331-6. doi: 10.1016/j.nut.2014.08.005. Epub 2014 Sep 2.

Plasma micronutrient levels and telomere length in children

Elizabeth Milne ¹, Nathan O'Callaghan ², Padmaja Ramankutty ³, Nicholas H de Klerk ³, Kathryn R Greenop ³, Bruce K Armstrong ⁴, Margaret Miller ⁵, Michael Fenech ²

➤ [Eur J Clin Invest](#). 2019 Dec;49(12):e13178. doi: 10.1111/eci.13178. Epub 2019 Nov 20.

Childhood obesity and leucocyte telomere length

Agaristi Lamprokostopoulou ¹, George Moschonis ², Yannis Manios ³, Elena Critselis ⁴, Nicolas C Nicolaides ^{1 4}, Alketa Stefa ¹, Eleni Koniari ¹, Sarantis Gagos ⁵, Evangelia Charmandari ^{1 4}

➤ [J Pediatr](#). 2017 Aug;187:247-252.e1. doi: 10.1016/j.jpeds.2017.05.014. Epub 2017 Jun 23.

Sleep Duration and Telomere Length in Children

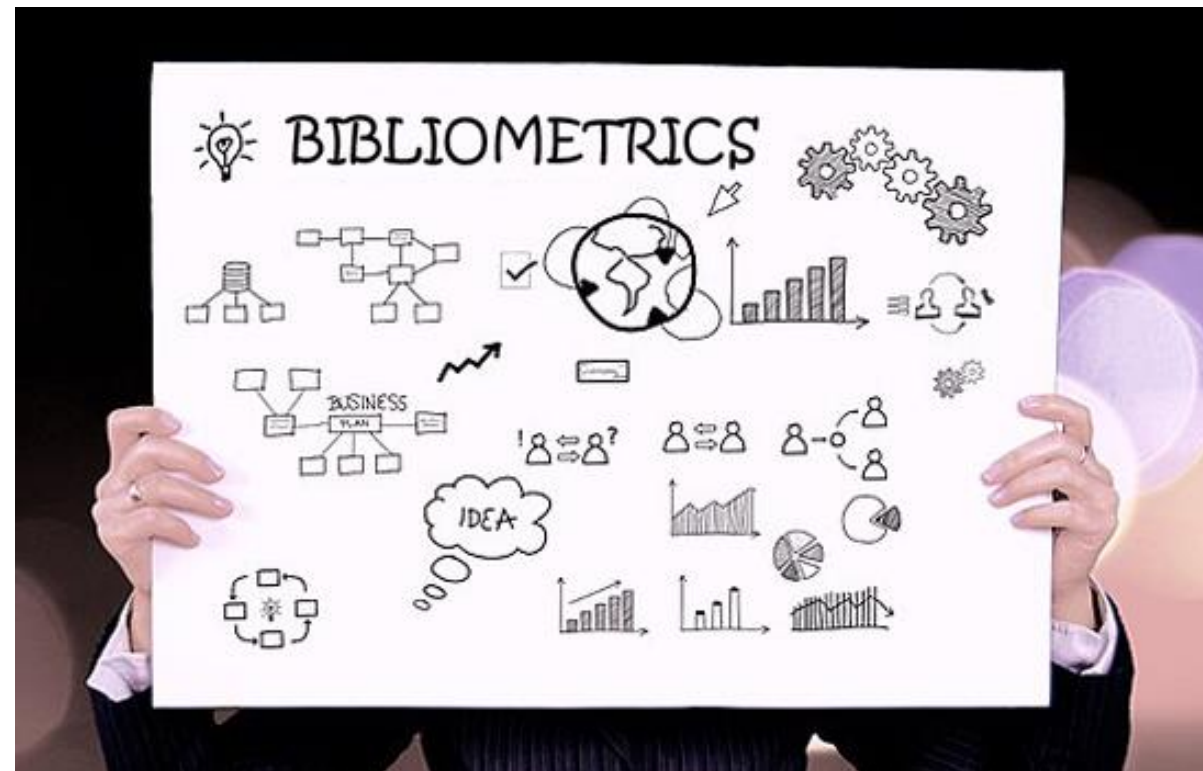
Sarah James ¹, Sara McLanahan ¹, Jeanne Brooks-Gunn ², Colter Mitchell ³, Lisa Schneper ¹, Brandon Wagner ⁴, Daniel A Notterman ⁵

Longitud del telómero e infancia

¿Cuál será el estado actual de la investigación en esta temática?



Longitud del telómero e infancia



- Método matemático y estadístico utilizado para analizar la producción científica.
- Explora indicadores como la colaboración entre países o número de citaciones.
- Utilizada por los investigadores para localizar temas relevantes o vacíos de conocimiento.

Objetivo

Realizar una descripción actual de la investigación sobre la longitud de los telómeros en niños, explorar su tendencia y estimar las posibles líneas de investigación futuras.





Base de datos

WEB OF SCIENCE™



Software (3.6.2)

ANÁLISIS BIBLIOMÉTRICO



Librería
(2.0)



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Journal of Informetrics

journal homepage: www.elsevier.com/locate/joi



Regular article

bibliometrix: An R-tool for comprehensive science mapping analysis



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Bibliographic coupling

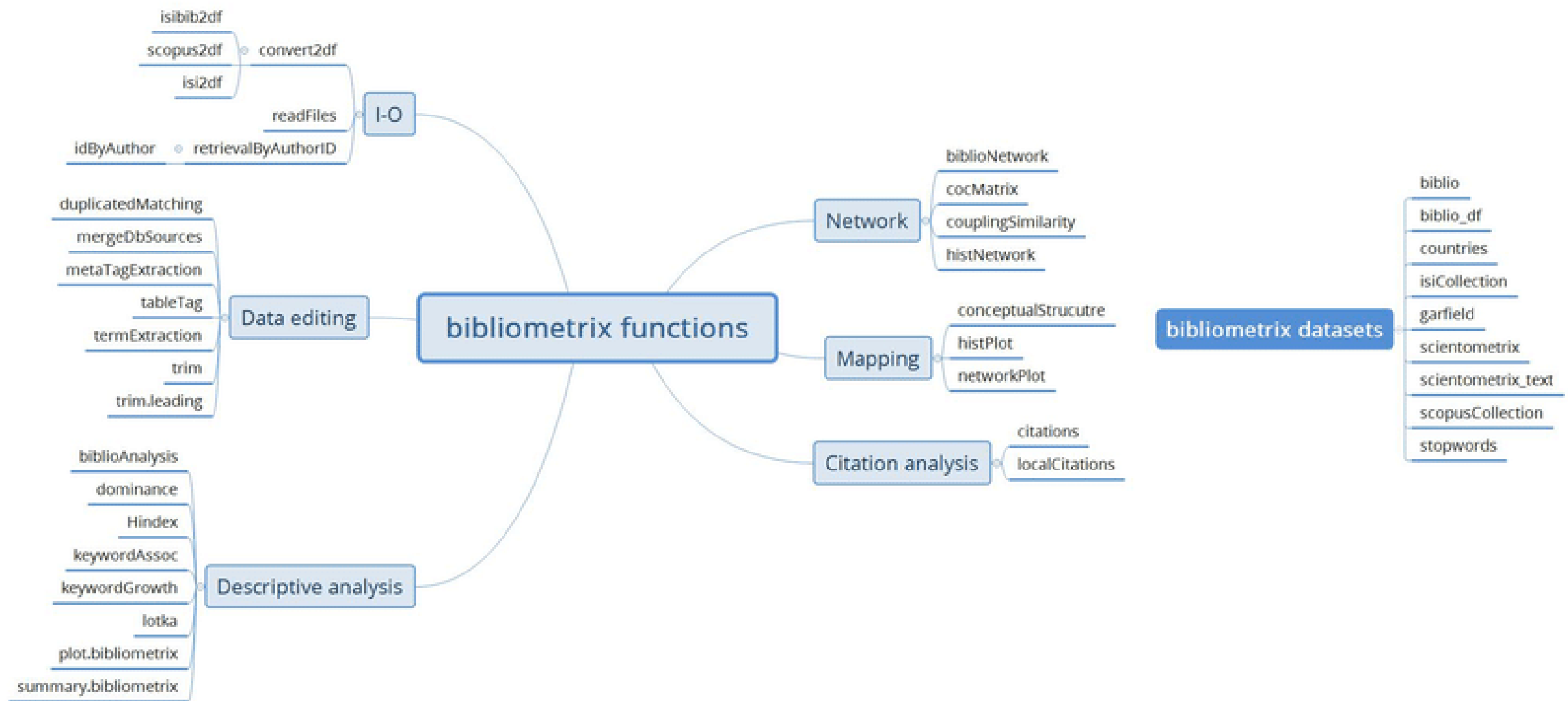
R package

ABSTRACT

The use of bibliometrics is gradually extending to all disciplines. It is particularly suitable for science mapping at a time when the emphasis on empirical contributions is producing voluminous, fragmented, and controversial research streams. Science mapping is complex and unwieldy because it is multi-step and frequently requires numerous and diverse software tools, which are not all necessarily freeware. Although automated workflows that integrate these software tools into an organized data flow are emerging, in this paper we propose a unique open-source tool, designed by the authors, called *bibliometrix*, for performing comprehensive science mapping analysis. *bibliometrix* supports a recommended workflow to perform bibliometric analyses. As it is programmed in R, the proposed tool is flexible and can be rapidly upgraded and integrated with other statistical R-packages. It is therefore useful in a constantly changing science such as bibliometrics.

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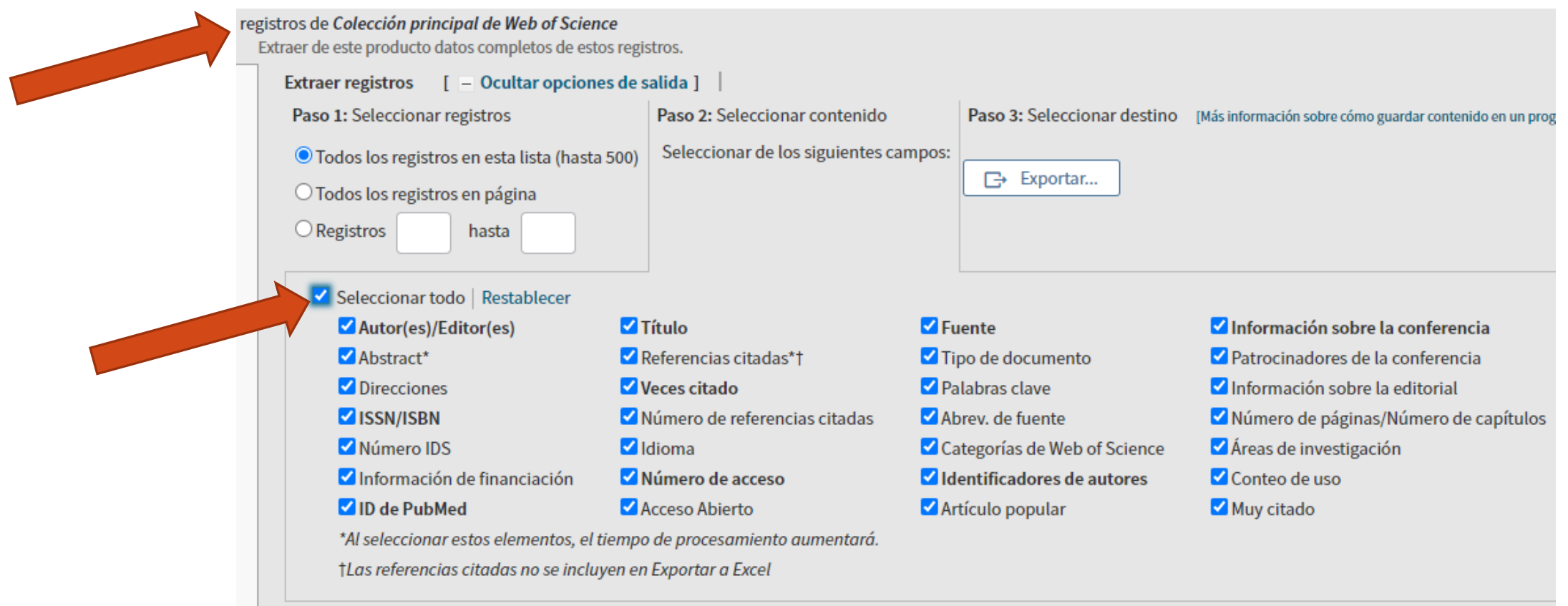
Metodología



Búsqueda bibliográfica y exportación

Búsqueda en WOS mediante la ecuación (“Telomere length” AND “Child”)

Selección de aquellos incluidos en la Colección principal de Web of Science (n=840)



registros de *Colección principal de Web of Science*
Extraer de este producto datos completos de estos registros.

Extraer registros [- Ocultar opciones de salida]

Paso 1: Seleccionar registros

☒ Todos los registros en esta lista (hasta 500)
☐ Todos los registros en página
☐ Registros hasta

☒ Seleccionar todo | Restablecer

☒ Autor(es)/Editor(es)
☒ Abstract*
☒ Direcciones
☒ ISSN/ISBN
☒ Número IDS
☒ Información de financiación
☒ ID de PubMed

☒ Título
☒ Referencias citadas*†
☒ Veces citado
☒ Número de referencias citadas
☒ Idioma
☒ Número de acceso
☒ Acceso Abierto

☒ Fuente
☒ Tipo de documento
☒ Palabras clave
☒ Abrev. de fuente
☒ Categorías de Web of Science
☒ Identificadores de autores
☒ Artículo popular

☒ Información sobre la conferencia
☒ Patrocinadores de la conferencia
☒ Información sobre la editorial
☒ Número de páginas/Número de capítulos
☒ Áreas de investigación
☒ Conteo de uso
☒ Muy citado

*Al seleccionar estos elementos, el tiempo de procesamiento aumentará.
†Las referencias citadas no se incluyen en Exportar a Excel

Paso 2: Seleccionar contenido
Seleccionar de los siguientes campos:

Paso 3: Seleccionar destino [Más información sobre cómo guardar contenido en un prog]

 Exportar...

Búsqueda bibliográfica y exportación

Exportación en formato BibTex

registros de Colección principal de Web of Science
Extraer de este producto datos completos de estos registros.

Extraer registros [- Ocultar opciones de salida] |

Paso 1: Seleccionar registros

☒ Todos los registros en esta lista (hasta 500)
☐ Todos los registros en página
☐ Registros hasta

Paso 2: Seleccionar contenido

Seleccionar de los siguientes campos:

☒ Seleccionar todo | [Restablecer](#)

☒ Autor(es)/Editor(es)	☒ Título	☒ Fuente	☒ Información sobre la conferencia
☒ Abstract*	☒ Referencias citadas*†	☒ Tipo de documento	☒ Patrocinadores de la conferencia
☒ Direcciones	☒ Veces citado	☒ Palabras clave	☒ Información sobre la editorial
☒ ISSN/ISBN	☒ Número de referencias citadas	☒ Abrev. de fuente	☒ Número de páginas/Número de capítulos
☒ Número IDS	☒ Idioma	☒ Categorías de Web of Science	☒ Áreas de investigación
☒ Información de financiación	☒ Número de acceso	☒ Identificadores de autores	☒ Conteo de uso
☒ ID de PubMed	☒ Acceso Abierto	☒ Artículo popular	☒ Muy citado

*Al seleccionar estos elementos, el tiempo de procesamiento aumentará.
†Las referencias citadas no se incluyen en Exportar a Excel

[Exportar...](#)

Formato de archivo

Otro software de referencia

Otro software de referencia

BibTeX

HTML

Texto sin formato

Delimitado por tabulador (Win)

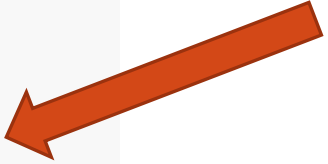
Delimitado por tabulador (Mac)

Formato delimitado por tabulador (Win, UTF-8)



Importación y conversión

```
1 library(bibliometrix)
2 ##### Importamos los dos archivos
3 file <- c("D:/base1telo.bib", "D:/base2telo.bib")
4 ##### Convertir desde vos con formato bibtex
5 M <- convert2df(file, dbsource = "vos", format =  
➤ "bibtex")
```



dbsource= vos, scopus, dimensions, Cochrane, pubmed
format= bibtex, csv, plaintext, excel, endnote, pubmed

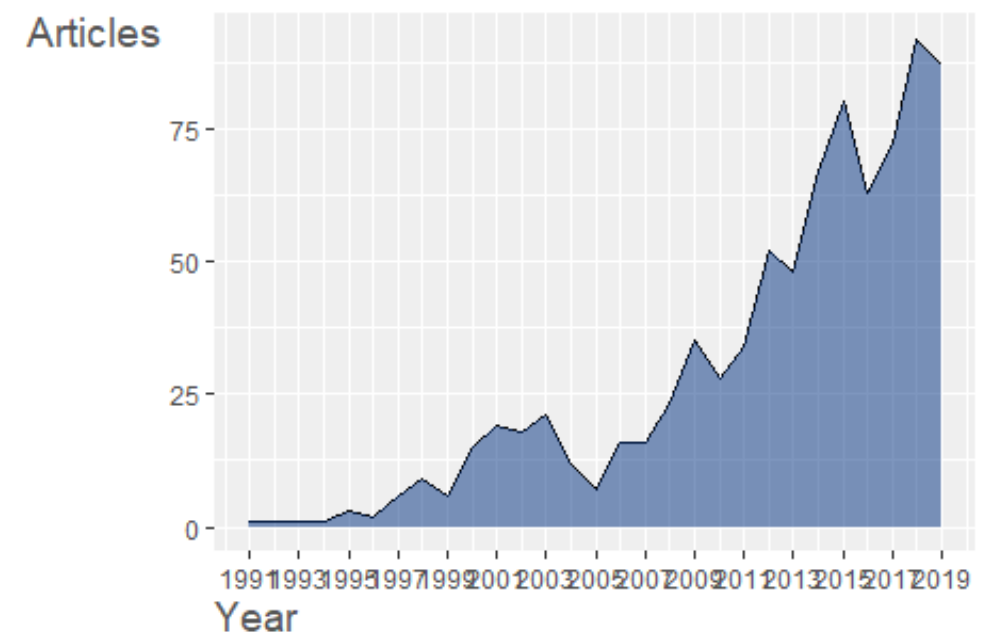
```
Converting your vos collection into a bibliographic dataframe
Done!

Generating affiliation field tag AU_UN from C1: Done!
```

Descriptivo y síntesis de resultados

```
6 ##### Análisis descriptivo
7 results <- biblioAnalysis(M, sep = ";")
8 ##### Resumen de resultados
9 S <- summary(object = results, k = 10, pause =
10 FALSE)
11 ##### Gráficos genéricos
12 plot(x = results, k = 10, pause = FALSE)
```

Annual Scientific Production



Descriptivo y síntesis de resultados

List element	Description
Articles	the total number of manuscripts
Authors	the authors' frequency distribution
AuthorsFrac	the authors' frequency distribution (fractionalized)
FirstAuthors	corresponding author of each manuscript
nAuperPaper	the number of authors per manuscript
Appearances	the number of author appearances
nAuthors	the number of authors
AuMultiAuthoredArt	the number of authors of multi-authored articles
MostCitedPapers	the list of manuscripts sorted by citations
Years	publication year of each manuscript
FirstAffiliation	the affiliation of the corresponding author
Affiliations	the frequency distribution of affiliations (of all co-authors for each paper)
Aff_frac	the fractionalized frequency distribution of affiliations (of all co-authors for each paper)
CO	the affiliation country of the corresponding author
Countries	the affiliation countries' frequency distribution
CountryCollaboration	the intra-country (SCP) and inter-country (MCP) collaboration indices
TotalCitation	the number of times each manuscript has been cited
TCperYear	the yearly average number of times each manuscript has been cited
Sources	the frequency distribution of sources (journals, books, etc.)
DE	the frequency distribution of authors' keywords
ID	the frequency distribution of keywords associated to the manuscript by SCOPUS and Thomson Reuters' ISI Web of Knowledge databases

MAIN INFORMATION ABOUT DATA

Timespan	1991 : 2019
Sources (Journals, Books, etc)	407
Documents	840
Average years from publication	7.55
Average citations per documents	33.6
Average citations per year per doc	3.398
References	21976

DOCUMENT CONTENTS

Keywords Plus (ID)	2279
Author's Keywords (DE)	1500

AUTHORS

Authors	4692
Author Appearances	6305
Authors of single-authored documents	23
Authors of multi-authored documents	4669

AUTHORS COLLABORATION

Single-authored documents	24
Documents per Author	0.179
Authors per Document	5.59
Co-Authors per Documents	7.51
Collaboration Index	5.72

Most Productive Authors

	Authors	Articles	Authors	Articles Fractionalized
1	SAVAGE SA	24	ALTER BP	3.77
2	LIN J	23	SAVAGE SA	3.52
3	ALTER BP	18	EPEL ES	3.33
4	CALADO RT	17	LANDSOP PM	3.27
5	EPEL ES	17	LIN J	2.98
6	LANDSOP PM	17	AVIV A	2.88
7	GIRI N	16	KOJIMA S	2.63
8	AVIV A	15	GIRI N	2.53
9	KOJIMA S	15	DRURY SS	2.49
10	YOUNG NS	14	CALADO RT	2.20



Top 10 prolific countries in publishing papers on telomere length in children.

Countries	Total number of documents	% ^a	SCP	MCP	MCP Ratio ^b
USA	300	35,7	206	94	0,3
Japan	59	7,0	49	10	0,2
United Kingdom	59	7,0	39	20	0,3
Canada	43	5,1	28	15	0,3
Germany	43	5,1	18	25	0,6
China	41	4,9	38	3	0,1
Italy	33	3,9	25	8	0,2
Australia	23	2,7	14	9	0,4
Brazil	23	2,7	13	10	0,4
India	22	2,6	19	3	0,1

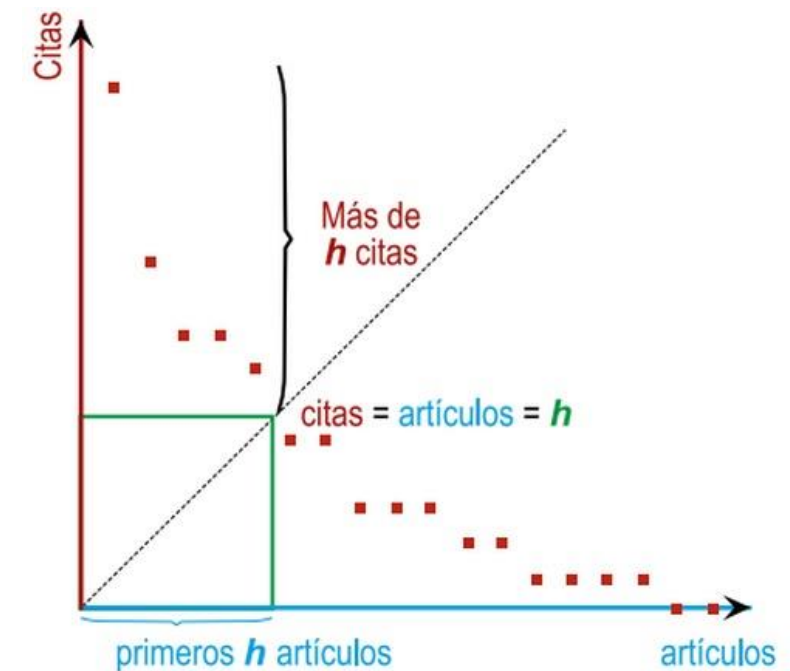
Abbreviations: SCP, single country publications; MCP, multiple country publications.

^a Percentage calculated out of the retrieved 840 documents.

^b Multiple country publication ratio was calculated as MCP divided by the total of published documents per country.

Otros análisis disponibles

```
#### Índice H  
authors=gsub(" ", "", names(results$Authors)[1:5])  
indices <- Hindex(M, field = "author", elements=  
=authors, sep = ";", years = 50)  
indices$H
```



Top 10 most-cited authors publishing on telomere length in children sorted by number of publications.

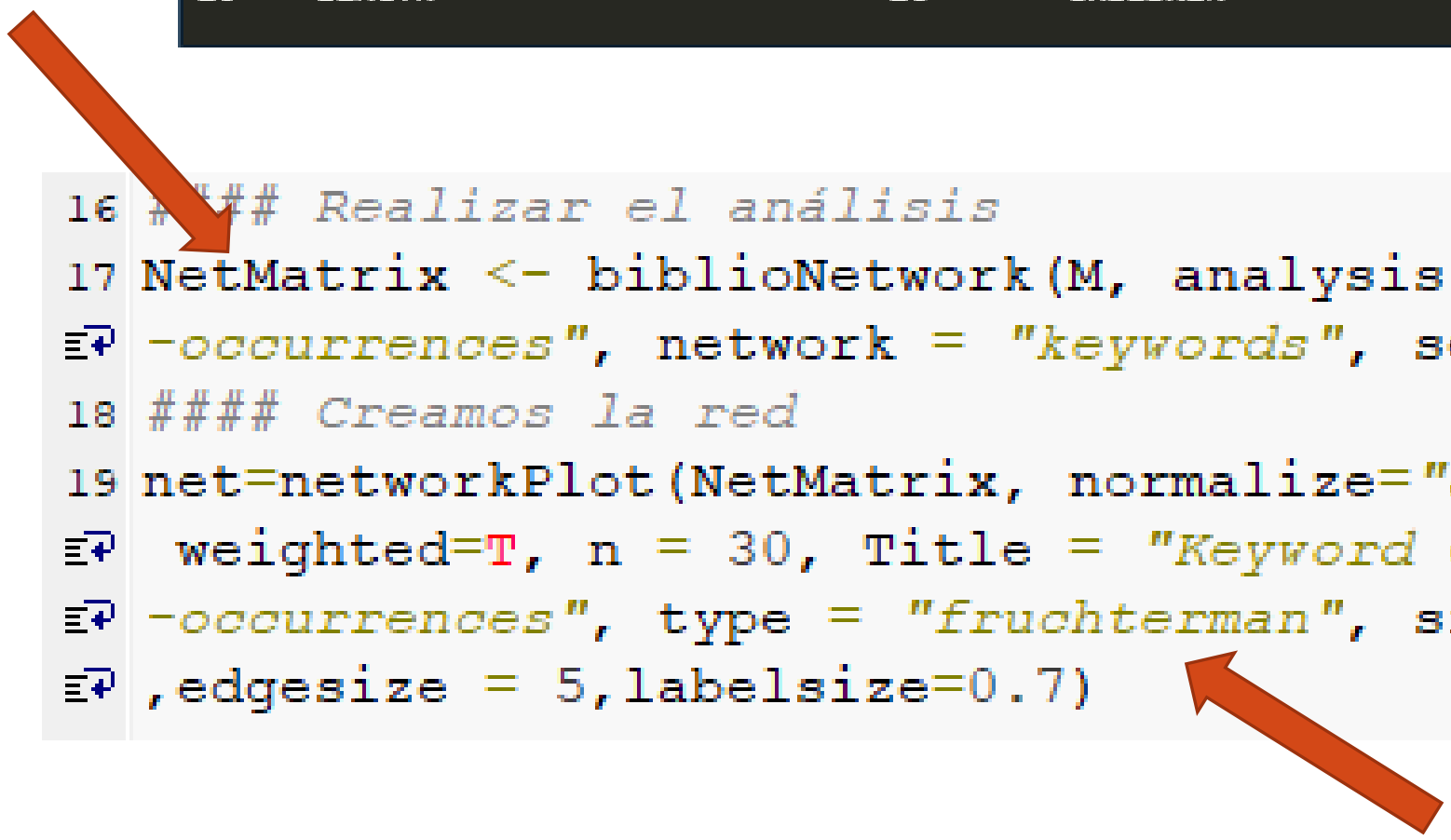
Author	h-index	g-index	m-index	TC	NP	YFP
Savage SA.	13	27	0,9	1120	27	2006
Lin J.	13	26	1,3	1044	26	2011
Lansdorp PM.	16	22	0,7	1791	22	1999
Alter BP.	12	20	0,6	1051	20	2002
Giri N	11	18	0,8	1007	18	2007
Aviv A.	12	17	0,6	837	17	2000
Calado RT.	9	17	0,6	373	17	2006
Epel ES.	11	17	0,9	792	17	2009
Young NS.	9	17	0,4	576	17	2001
Kojima S.	4	9	0,3	94	16	2006

Abbreviations: TC, total citations; NP, number of publications; YFP, year of first indexed publication.

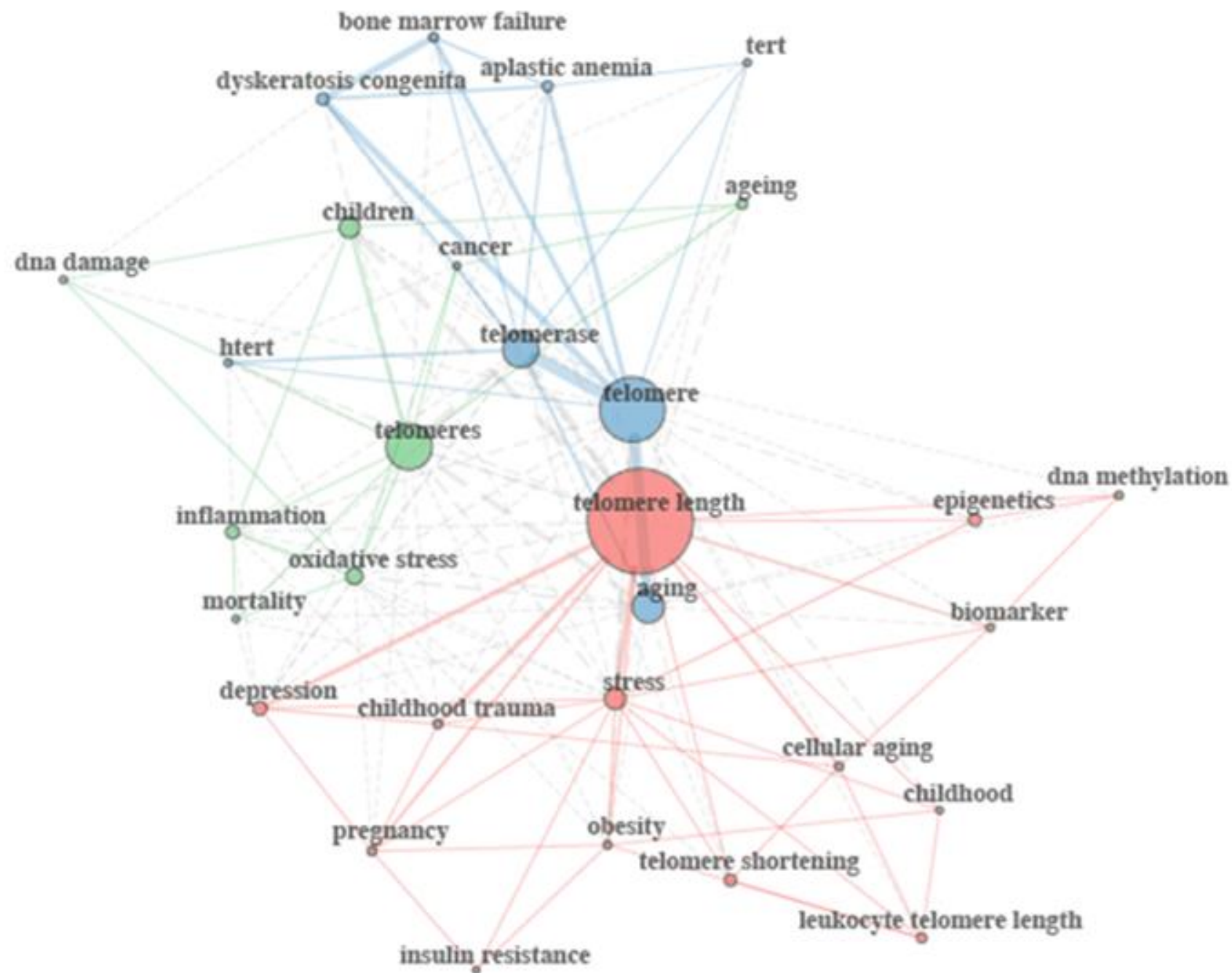
Most Relevant Keywords

	Author Keywords (DE)	Articles	Keywords-Plus (ID)	Articles
1	TELOMERE LENGTH	124	TELOMERE LENGTH	148
2	TELOMERE	115	LENGTH	107
3	TELOMERES	58	CANCER	105
4	AGING	49	ASSOCIATION	102
5	TELOMERASE	49	AGE	88
6	CHILDREN	28	RISK	87
7	STRESS	26	OXIDATIVE STRESS	85
8	DYSKERATOSIS CONGENITA	19	DISEASE	84
9	APLASTIC ANEMIA	16	CELLS	78
10	LENGTH	16	CHILDREN	67

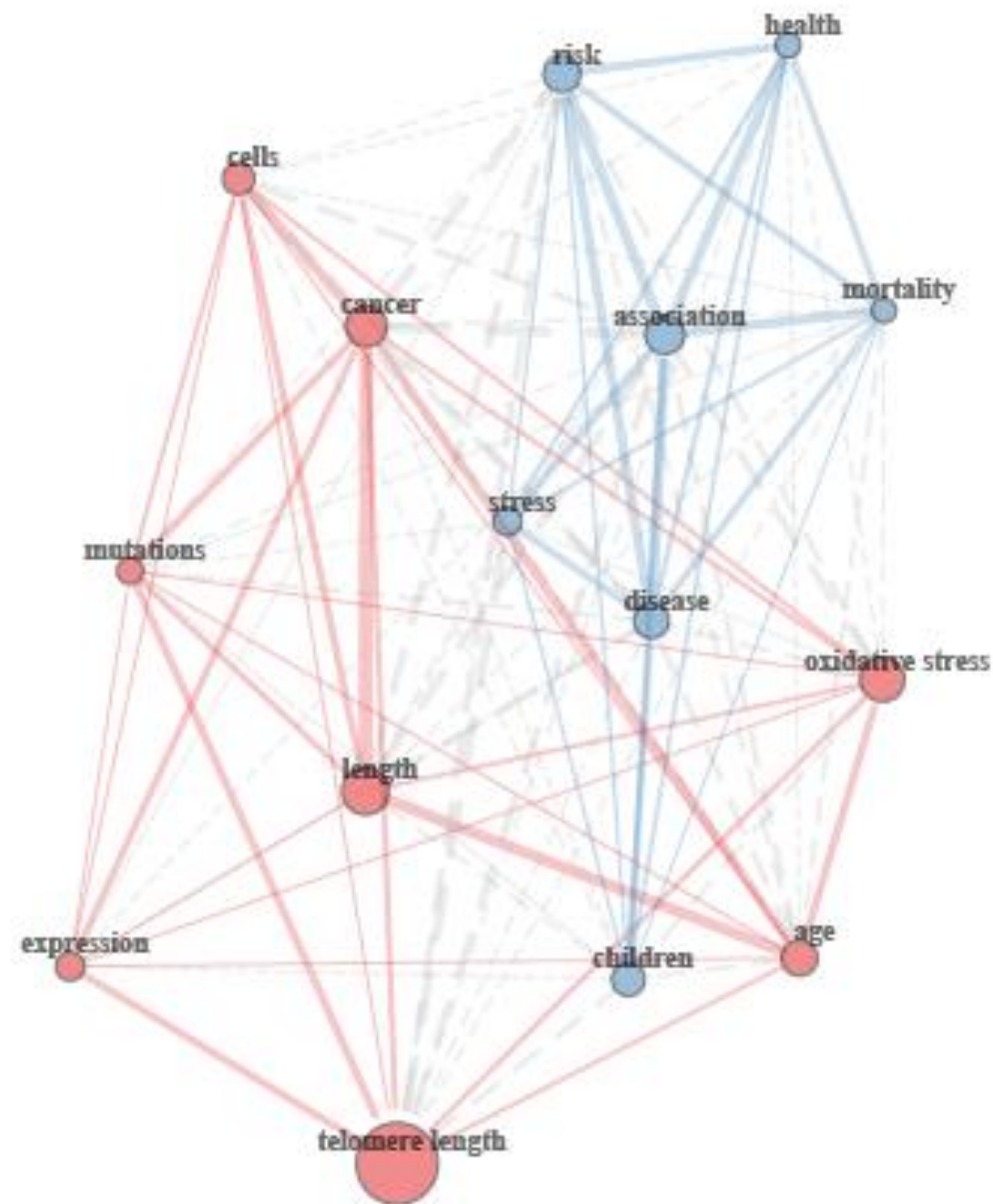
```
16 ##### Realizar el análisis
17 NetMatrix <- biblioNetwork(M, analysis = "co
≡ ↗ -occurrences", network = "keywords", sep = ";")
18 ##### Creamos la red
19 net=networkPlot(NetMatrix, normalize="association",
≡ ↗ weighted=T, n = 30, Title = "Keyword Co
≡ ↗ -occurrences", type = "fruchterman", size=T
≡ ↗ ,edgesize = 5,labelsiz=0.7)
```



Keywords NetMatrix



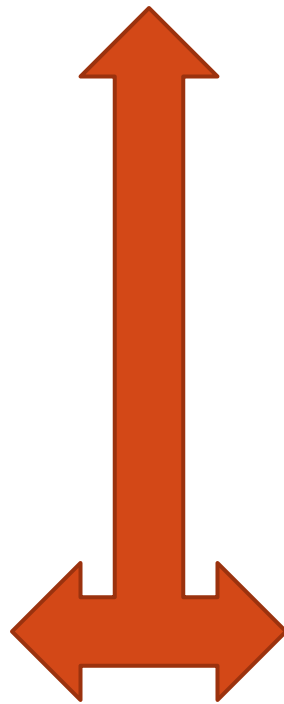
Keywords NetMatrix



N=15

Conclusión del estudio

- La investigación sobre longitud del telómero y niños ha ganado relevancia durante la última década
- Se observa un incremento del número de publicaciones desde 1991
- Se detectan dos principales líneas de investigación





Review

Bibliometric Analysis of Research on Telomere Length in Children: A Review of Scientific Literature

Desirée Valera-Gran ^{1,2,*} , Daniel Prieto-Botella ¹, Paula Peral-Gómez ^{1,2} ,
Miriam Hurtado-Pomares ^{1,2} , Alicia Sánchez-Pérez ^{1,2}  and Eva-María Navarrete-Muñoz ^{1,2,*} 

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Received: 8 May 2020; Accepted: 23 June 2020; Published: 26 June 2020



Abstract: Telomere length in early life has been recently associated with biological aging and development of negative consequences in later adult life. A relevant area of research has emerged to understand the factors that impact telomere length in children. We conducted a bibliometric analysis to track research output and identify global trends and gaps in the knowledge of telomere length in children. Bibliographic data were retrieved from the Web of Science database and then analyzed by using Bibliometrix R package. A total of 840 publications were yielded from 1991 to 2019. The references were prominently published in journals, with 20 high ranked journals contributing to 30% of literature on telomere length in children. The USA was the most productive country (35.7%), followed by Europe (12.1%), and Asia (11.9%). A knowledge map of telomere length in children through keyword analyses revealed that there were two potential main lines of research based on two different approaches: genomic research and epidemiological research. This study shows that telomere length in children is a topic of research that has gained significant relevance in the last decade. This bibliometric study may be helpful in identifying research trends and finding research hot spots and gaps in this research field.

Keywords: telomere; childhood; scientometrics; scientific publication; genomic research; epidemiological research

Bibliometrix es una herramienta útil para realizar análisis bibliométricos que simplifica análisis cuantitativos y permite un ágil manejo de grandes volúmenes de información.



