

World Health Organization: a Webometric Study of its Collaborating Centers

Pamela Lang¹, Fábio C. Gouveia² and Jacqueline Leta³

¹*pamela@fiocruz.br*

Oswaldo Cruz Foundation, Av. Brasil, 4365, Castelo – sala 15,
CEP 21040-360, Rio de Janeiro (Brazil)

²*fgouveia@fiocruz.br*

Oswaldo Cruz Foundation, Av. Brasil, 4365, Museu da Vida,
CEP 21040-360, Rio de Janeiro (Brazil)

³*jleta@bioqmed.ufrj.br*

Federal University of Rio de Janeiro, Av. Brigadeiro Trompowsky s/ nº, Prédio do CCS, Bloco B – sala 39,
CEP 21941-590, Rio de Janeiro (Brazil)

Introduction

Since its foundation the World Health Organization (WHO) took upon the direction and coordination of world's initiatives towards health. During the Second World Health Assembly, it was established that WHO should launch collaboration links and coordinate health research with institutions already set up in different world regions. Due to this policy, WHO collaborating centers (WHO CCs) were created all over the world.

The CCs include private or research institutes, universities or laboratories, sharing or not goals and fields of interest. Accordingly, some of these centers goals include collecting and disseminating information; standardizing terminologies and concepts related to health as well as technologies, diagnostic, therapeutic and prophylactic substances, methods and procedures; developing and applying appropriate technologies; participating in the development of collaborative research under its own leadership; training and coordinating activities performed by various institutions on a theme (WHO, 2008). The present study aims to map relations among websites of WHO CCs from Latin American countries.

Methodology

Information on 71 Latin American CCs was retrieved from WHO's database (734 active CCs) on December 5th, 2008. This list was reduced to 33 after using some filters which have excluded CCs whose websites: (a) were not indicated in WHO's database, (b) were no longer active, or (c) were a subdirectory. All co-link data were retrieved in January 5th, 2009 by using the string "link:URLi link:URLj" in AltaVista search engine, which, since 2003 shares Yahoo!'s database, with 59% coverage of the indexable web (Gulli & Signorin, 2005), and allows complex query searches due to its booleans operators. A symmetric matrix with the results was

then generated and the list of studied CCs was reduced to 21¹ that had a sum of more than 10 co-links within the sample. Cluster analysis was performed and Ward's method was used for amalgamation (Ward, 1963), with 1-Pearson r distance measures. All languages available in the homepage of each of the 21 CCs studied were also identified.

Results and Discussion

The co-link analysis results in 7 clusters (Figure 1). Cluster A is formed by three CCs, being the first two devoted to research on Occupational Health and located in the same country. INHEM's presence may be explained by its strong relation with ISPCH in general links lists indicating WHO CCs.

Cluster B groups three CCs with different research fields. INPRF and INSP, however, share several common aspects – same country, related collaboration themes and linked mostly by the Hospital General de Mexico. As for INTA, its presence is related with its strong co-link relation with INSP.

¹

Asociacion Colombiana de Facultades y Escuelas de Enfermeria (ACOFAEN-CO); Centro de Estudos, Pesquisa e Documentação (CEPEDOC-BR); Centro para el Desarrollo y Evaluación de Políticas y Tecnología en Salud Pública (CEDETES-CO); Escola de Enfermagem de Ribeirão Preto (EERP-BR); Fundação Jorge Duprat Figueiredo de Segurança e Medicina do Trabalho (FUNDACENTRO-BR); Fundação Pro-Sangue-Hemocentro de São Paulo (PROSANGUE-BR); Hospital de Clínicas de Porto Alegre (HCPA-BR); Hospital del Trabajador (ACHS-CH); Instituto de Investigaciones y Desarrollo en Prevención de Violencia y Promoción de la Convivencia Social (CISALVA-CO); Instituto de Nutrición y Tecnología de los Alimentos (INTA-CH); Instituto de Radioproteção e Dosimetria (IRD-BR); Instituto de Salud Pública de Chile (ISPCH-CH); Instituto Evandro Chagas (IEC-BR); Instituto Lauro de Souza Lima (ILSL-BR); Instituto Nacional de Câncer (INCA-BR); Instituto Nacional de Higiene, Epidemiologia y Microbiologia (INHEM-CU); Instituto Nacional de Psiquiatria Ramon de la Fuente Muniz (INPRF-MX); Instituto Nacional de Salud Pública (INSP-MX); Núcleo de Estudos da Violência (NEV-BR); Servicio de Crecimiento y Desarrollo Hospital de Pediatría "Prof. Juan P. Garrahan" (HPED-AR); Serviço Social da Indústria (SESI-BR).

Cluster C consists in three CCs from different countries and collaborating themes; their proximity seem to be institutional related, as all of them develop activities and research in hospital-nursing related institutions. And cluster D consists in two CCs with different collaboration themes, but from the same institution (Universidade del Valle).

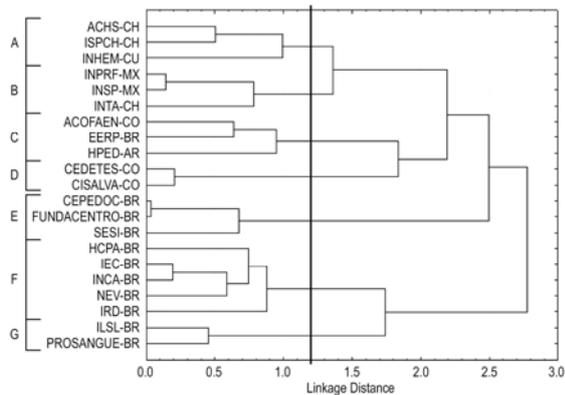


Figure 1: Cluster analysis plot of co-link analysis of the 21 WHO CCs studied

Geographical influences may be conforming cluster E, F and G, with Brazilian CCs being isolated from the rest. CCs in clusters E and F are set apart from cluster F due to related collaboration themes (*urban and worker's health* research field) and a high number of co-links from the same website (Health Secretary of São Paulo), respectively.

Linguistic differences may also be contributing to the isolation of Brazilian CCs, as Brazil is the only non-Spanish speaking country included in this study. None of the Spanish-speaking Latin American CCs' websites has a Portuguese version and only four Brazilian CCs present versions in Spanish, which may reduce interactions between them. A similar trend was also found within Latin American museums and science centers (Gouveia & Kurtenbach, 2009).

Conclusion

The co-link analysis indicated a clear distance among Brazilian and other Latin American CCs on the Internet. The lack of connectivity among them seems to be the result of language and geographical influences. Such influences have also been found in other co-link studies (Thelwall, 2002; Vaughan & Thelwall, 2005; Vaughan, Kipp & Gao, 2007). Further investigation, however, is required to better understand the visibility and relation among renowned Latin American research institutions.

Acknowledgments

We thank the support from CNPq and FAPERJ.

References

- Gouveia, F.C. & Kurtenbach, E. (2009). Mapping the web relations of science centres and museums from Latin America. *Scientometrics*. Preprint.
- Gulli, A., & Signorini, A. (2005), The Indexable Web is More than 11.5 billion pages, International World Wide Web Conference, 902.903. Retrieved September 05, 2008 from: <http://www.cs.uiowa.edu/~asignori/web-size/size-indexable-web.pdf>
- Thelwall, M. (2002). Evidence for the existence of geographic trends in university web site interlinking. *Journal of Documentation*, 58 (5), 563-574.
- Vaughan, L. & Thelwall, M. (2005). A modeling approach to uncover hyperlink patterns: the case of Canadian universities. *Information Processing and Management*, 41, 347-359.
- Vaughan, L., Kipp, M. & Gao, Y. (2007), Why are Websites co-linked? The case of Canadian universities, *Scientometrics*, 72 (1): 81.92.
- Ward, J. (1963). Hierarchical Grouping to optimize an objective function. *Journal of American Statistical Association*, 58 (301), 236-244.
- World Health Organization (2008). Retrieved December 10, 2008 from: <http://www.who.int>