PRODUCT REVIEW / ÉVALUATION DE PRODUIT

Product: Yale MeSH Analyzer

Purpose: Using PMID numbers, the Analyzer creates table of key MEDLINE metadata for visual comparison and analysis.

URL: http://mesh.med.yale.edu/

Intended audience: MEDLINE searchers of any experience level.

Cost: Free

Bottom line: The Yale MeSH Analyzer helps users to visually compare MEDLINE indexing information to enhance their search strategies.

Purpose

Appraising results of a literature search can be challenging; unexpected results can leave a searcher sifting through a strategy line by line to determine which term caused hundreds of irrelevant citations to appear in their results. Similarly, elusive relevant articles will hover just outside set criteria. Without carefully analyzing indexing and abstract terms, searchers can't be confident in understanding and manipulating their strategies to best balance sensitivity and specificity.

The Yale MeSH Analyzer extracts indexing information from MEDLINE articles to allow users to visually scan and compare key metadata. This allows users to identify and add subject headings and keywords that retrieve relevant results, and which terms are not relevant to their search topic. It can also help users to identify reasons specific articles do or do not appear in a result set.

Product Description

Created in the Cushing/Whitney Medical Library at Yale University, the Yale MeSH Analyzer uses PubMed Identifiers (PMIDs) to create an alphabetical grid of medical subject headings (MeSH) and subheadings, with optional addition of titles, abstracts and author-identified keywords [1]. Users can paste up to 20 PMIDs and select preferred fields to display.

Intended Audience

Both seasoned and new searchers can use this tool. It can serve experienced searchers by providing a quick way to analyze a set of results and enhance a strategy. For novice searchers, it provides a way to visually compare search results, and demonstrates the role pearl growing can play in the search process.

In particular, the tool can be helpful in supporting systematic searches. From the perspective of a librarian conducting searches for scoping reviews and systematic reviews, the Yale MeSH Analyzer has helped to draw links between articles selected by research teams to determine how a search could be best adjusted to reflect their defined topic. Having clear summaries available to explain why errant results were retrieved, and why seemingly on-topic articles were not has been incredibly helpful for communicating with research teams and helping them to better define their research questions.

Special Features

In addition to a web interface, the Yale MeSH Analyzer has a browser plugin called "Analyze MeSH!" that can be used to select citations directly from PubMed search results to analyze.

Compatibility Issues

This web tool has identical functionality in both Internet Explorer and Google Chrome. No additional web browsers were tested.

Usability

The Yale MeSH Analyzer is a simple tool to use. The main search page is clear, and the help file

contains a clear video demonstrating how to use the analyzer. Because the search field will identify PMIDs within other text, it is forgiving with regards to the text users type or paste into it.

Strengths

(1) Creates comparison tables in minutes when manual creation could take hours
(2) Flexible in appearance of certain elements depending on goals; can include/exclude subheadings, titles, journal, abstracts, author keywords and major topics
(3) Output to HTML table or Excel for further manipulation
(4) Browser plugin allows immediate analysis from PubMed results
(5) Flexible input; will scan free text for anything that looks like a PMID and recognizes special characters
(6) Useful if search topic is best suited to MEDLINE or PubMed
(7) Remembers preferred output settings

Weaknesses

(1) Depending on how initial articles were identified, you may be limiting yourself; if your initial search was 1 or 2 subject headings, the scope of your sample articles may not cover indexing terms outside of what is already known
(2) Only uses content with PMIDs, so not all articles will be discoverable
(3) Analyzes up to 20 PMIDs at once; larger sets would have to be manually assembled in Excel
(4) Help video is over 7 minutes long–may deter users from watching
(5) Not useful if search topic is best suited to content outside of MEDLINE or PubMed

Comparison with Similar Products

PubMed PubReminer is comparable to the Yale MeSH Analyzer. PubReminer can analyze indexing information using PMIDs [2]. PubReminer's output is different from the Yale MeSH Analyzer; it populates a ranking of the most common MeSH headings, subheadings and keywords. PubReminer is helpful for creating a count, looking at more than 20 references at once, identifying key journals for a specific topic and demonstrating how adjusting a strategy impacts the outcomes of a search.

The MeSH Analyzer is valuable for providing a more visual comparison, is more capable of extracting PMIDs from text, and has more useful output options. Both tools could be used to enhance a MEDLINE search strategy.

Currency

Developed in 2015; no age-related issues detected.

Cost/ Value

Free.

References

1. Grossetta Nardini HK, Wang L. The Yale MeSH Analyzer [Internet]. New Haven, CT: Cushing/Whitney Medical Library; 2017 [cited 2017 June 21]. Available from: http://mesh.med.yale.edu/.
2. Koster, J. Pubmed PubReminer [Internet]. Amsterdam-Zuidoost, Netherlands: Academic Medical Centre; 2014 [cited 2017 June 21]. Available from: http://hgserver2.amc.nl/cgi-bin/miner/miner2.cgi.

Statement of Competing Interests

No competing interests declared.

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