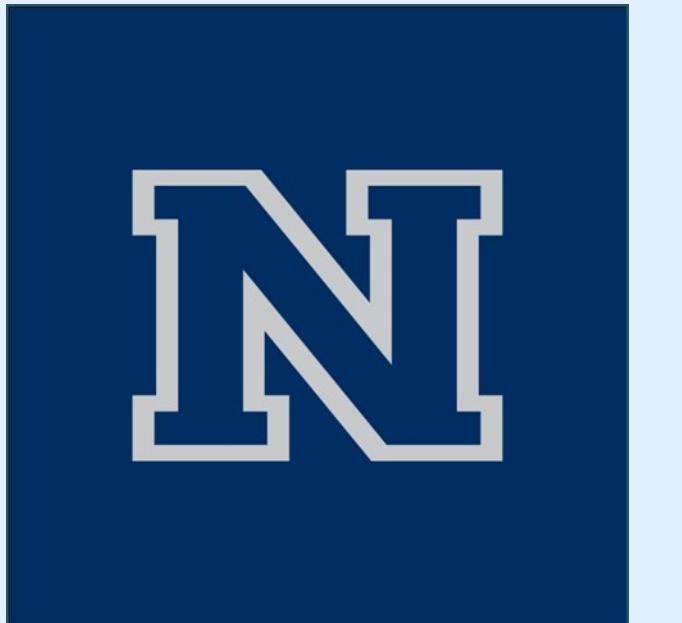




# Singular, Plural, and Possessive: Evaluating Differences in Results Based on Form of Search Term

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## Introduction & Research Purpose

Searchers may be entering different forms of the same term when seeking information. For example, one searcher may enter *Parkinson* while another enters *Parkinson's* and yet another *Parkinsons*. The purpose of this study is to illustrate how keyword searches of singular, plural and possessive forms for the same concept may retrieve different results from PubMed and if so, how the results differ.

## Methodology

Test terms were randomly selected from the MedlinePlus Health Topics list. This is a list of common conditions and health topics. During the selection process, terms which could not be made plural, for example youth violence, were excluded. Terms which were not used in the plural form, for example yellow fever, were excluded. Acronyms and initialisms were also excluded. A total of 203 terms were tested.

Each qualifying term was searched separately in PubMed in at least two ways: as a singular term and a plural term. If the term could be used as a possessive it was also searched in that manner. Determining unique citations was accomplished by using the Boolean operator NOT across sets of results from different forms of the same term. Results were tracked in terms of quantity retrieved, overlap of retrieved citations, and unique citations.

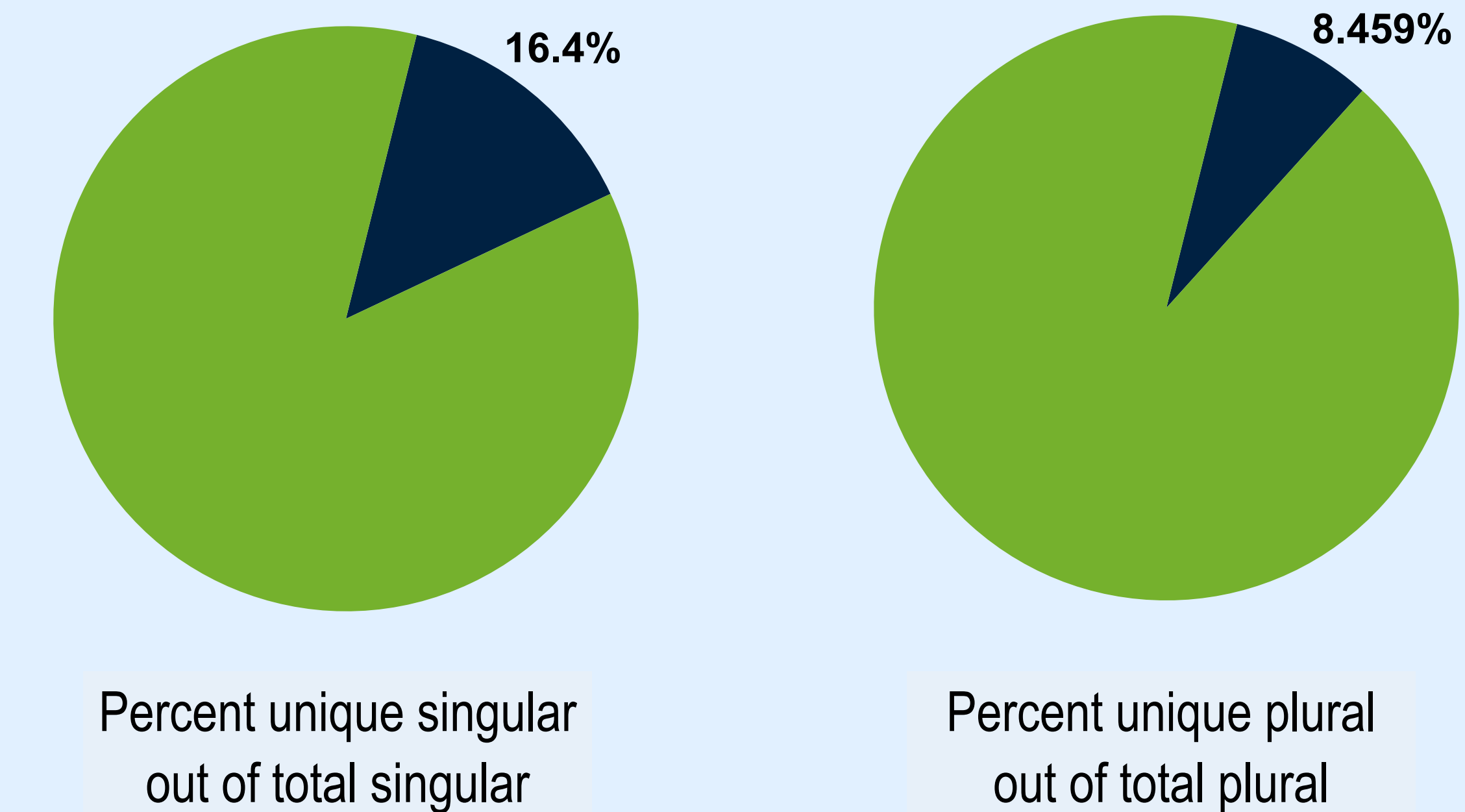
An additional examination was performed on the results of 22 terms to analyze the automatic mapping feature to determine if any reason other than the form variation of the ALL FIELDS search could have accounted for the differences in results, such as inconsistent MeSH Mapping by form of search term.

### Examples

Ventilator = 25,592	Singular NOT Plural = 16,703 (65%)
Ventilators = 9,366	Plural NOT Singular = 477 (5%)
Assistive Device = 9,203	Singular NOT Plural = 314 (3.4%)
Assistive Devices = 9,722	Plural NOT Singular = 833 (8.6%)
Asperger Syndrome = 1,866	Singular NOT Plural = 0
Aspergers Syndrome = 1,871	Plural NOT Singular = 5 (0.27%)
Asperger's Syndrome = 2,063	Possessive NOT Singular = 197 (10%)
	Singular NOT Possessive = 0
	Plural NOT Possessive = 4 (0.2%)

## Results

A total of 203 terms were tested. Keyword searches of singular and plural forms retrieved different total results for all but one of the terms. Of the 203 terms tested, 116 singular term searches retrieved more than plural searches and 86 plural searches retrieved more than singular searches. In total, singular searches retrieved 8.61% more citations than plural searches.



The search details of 22 terms were further analyzed. In all but one term, the Automatic Mapping feature mapped to the same MeSH term across different forms. The only variation was in the automatic ALL FIELDS portion of the search results.

## Discussion/Conclusions

As expected, the singular, plural, and possessive forms of keyword searches in PubMed return different results. While there is overlap in the results, each form often contains unique citations. This makes sense given PubMed's automatic term mapping feature which ORs in the exact search term for an ALL FIELDS search. Even so, it is likely that most searchers and even librarians may not consider the sometimes vast differences in results based on form of term. The PubMed Automatic Mapping performed remarkably well in consistency across different forms of the same term. The variation in results is most often due to the automatic ALL FIELDS search portion of the details. Searchers will likely obtain more comprehensive results through the use of MeSH and/or the \* truncation symbol for terms that can be in different forms.

## Future Research

Further research will be conducted on the results of a subset of terms (22) to analyze unique items retrieved among the singular, plural, and possessive forms. To keep the set manageable, we will limit results to one full year (2012). Analysis will be performed on the citations to determine variations in MeSH assignments. This information will then be compared across the plural, singular, and possessive categories.