INTRODUCTION

As part of a larger series focusing on assessing or creating filters for health disparities, this Galter Health Sciences Library & Learning Center project focused on immigrant health disparities. We identified a need for a comprehensive filter to retrieve literature on health disparities related to immigration.

OBJECTIVE

Our aim was to design and validate a search filter for PubMed MEDLINE, beginning with establishment of a development set and ending with the validation set of articles (the gold standard) used to test the sensitivity, specificity, precision, and accuracy of the immigrant health disparities filter created.

METHODS

The flow-chart below outlines the 5-step method we followed to develop a preliminary filter.

1. DEFINE
   Define “immigrant health” to inform inclusion/exclusion criteria.
   We asked experts on immigrant health disparities to define the topic and identify relevant terms.
   We applied expert feedback to the creation of our inclusion/exclusion criteria.

2. IDENTIFY
   Identify records for a development set.
   We utilized terms for “preventive medicine” to locate a random set of citations to be screened for development set inclusion.
   We screened 3523 records in Rayyan and identified 86 records for inclusion.

3. GENERATE
   Generate a search strategy to capture the development set.
   We each scanned accepted title/abstracts for relevant keywords. We used PubTemeiner to identify applicable MeSH terminology.
   We applied keyword ranking to generate a search filter of keywords and MeSH terminology.

4. ESTABLISH
   Establish a set of records to validate the search strategy.
   We performed title/abstract screening of all 1871 PubMed results from the Journal of Immigrant and Minority Health.
   We applied our inclusion/exclusion criteria and selected a total of 1056 citations for inclusion in our final validation set.

5. TEST
   Test the performance of the validation set against our developed search strategy.
   We assessed the performance of our development set against our validation set to determine the sensitivity, precision, specificity, and accuracy of the filter.

RESULTS

The table below reports the performance measures for the Immigrant Health Disparities filter.

<table>
<thead>
<tr>
<th>Validation Set</th>
<th>References Retrieved</th>
<th>Sensitivity (%)</th>
<th>Specificity (%)</th>
<th>Accuracy (%)</th>
<th>Precision (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>Correct Inclusion</td>
<td>Incorrect Exclusion</td>
<td>Correct Inclusion</td>
<td>Incorrect Exclusion</td>
<td></td>
</tr>
<tr>
<td>1871</td>
<td>1028</td>
<td>391</td>
<td>424</td>
<td>28</td>
<td>97</td>
</tr>
</tbody>
</table>

Accuracy Measurement

Development Set

The search string to retrieve the development set identified 80 of 86 records. Six records from the development set were deemed as “acceptable losses” resulting search strategy produced by the development set having an accuracy of 93%.

NRR 1.38

The number of records that need to be read in order to identify a relevant result. This assesses the filter in the context of the resulting workload.

DISCUSSION

Author Responsibility

“Acceptable loss” records met inclusion criteria, but lacked appropriate terms. A degree of responsibility lies with authors to increase discoverability by using targeted terminology in the title and abstract.

Considerations

- Relevant terminology (e.g. “displaced persons”) not captured by small development set
- Geographic and language-specific terms as qualifiers
- Limited phrase searching and lack of proximity operators in PubMed
- Focused on populations in the United States

Conclusions

The filter requires further development:

- Add terms using expert opinion and topic research
- Explore geographic and language qualifiers
- Improve specificity

REFERENCES

4. Wafford QE, Miller CH, O’Dwyer L. Validating the MEDLINE®/PubMed® Health Disparities and Minority Health Search Strategy-Spotlight: Race and Ethnicity. Poster presented at MLA ’18, the 118th Annual Meeting of the Medical Library Association; 2018 May 18–23; Atlanta, GA.