

# LDA2Net: Digging under the surface of COVID-19 topics in literature

## Topic 37 companion sheet

G. Minello

C.R.M.A. Santagiustina

M. Warglien

This file contains the following supplementary information for Topic 37 of the manuscript “*LDA2Net: Digging under the surface of COVID-19 topics in scientific literature*”:

- Human label and automatic n-gram label proposals (Table 1)
- Summary measures (Table 2)
- Network of top 25 bigrams (Figure 1)
- Wordclouds of top 25 words by node relevance measure (Figure 2)
- Wordclouds of top 25 bigrams by edge relevance measure (Figure 3)
- Filtered (0.99 percentile) topic network (Figure 4)

Table 1: Human and automatic label proposals. Automatic label candidate for largest word community of the topic. In parenthesis: absolute frequency of the walk out of a sample of size 1000.

Human label	2-gram label	3-gram label	4-gram label
comparative studies	significantly->higher (21.3%)	significantly->higher->rate (8.2%)	significantly->higher->rate->compared (2.7%)

Here follows the set of topic-specific measures that have been used to classify the topic and to analyse its structural properties (see manuscript for details):

Table 2: Summary measures

	JSD	Mean propensity	Variance propensity	Modularity	Barrat Clustering Coeff.
value	0.806891	0.008009	0.000165	0.017058	0.605384
rank	107	48	22	61	96

Based on the aforementioned measures, Topic 37 has been classified as a CROSS-CUTTING topic.

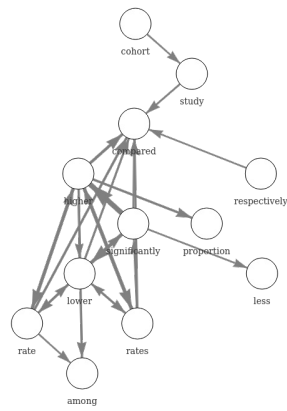


Figure 1: Network of top 25 bigrams (i.e., edges) by weight.

[illegible]

A word cloud of terms related to the study. The most prominent words are 'higher' and 'rate'. Other visible words include 'differences', 'greater', 'similar', 'significantly', 'lower', 'observed', 'overall', 'proportions', 'frequency', 'mean', 'less', 'study', 'total', 'likely', 'difference', 'percentage', 'cohort', 'respectively', 'compared', 'without', 'vs', 'among', and 'study'.

among  
outcomes  
data  
overall  
differences  
retrospective  
less  
significantly  
vs  
higher  
significantly  
lower  
rate  
rates  
cohort  
without  
difference  
similar  
observed  
analyzed  
significant  
study  
times  
greater

A word cloud of terms related to the study. The most prominent words are 'higher' and 'rates'. Other visible words include 'overall', 'differences', 'data', 'prior', 'among', 'outcomes', 'total', 'without', 'lower', 'rate', 'percentage', 'provided', 'proportion', 'similar', 'greater', 'study', 'significantly', 'less', 'likely', 'difference', 'proportions', 'compared', 'rates', and 'vs'.

3

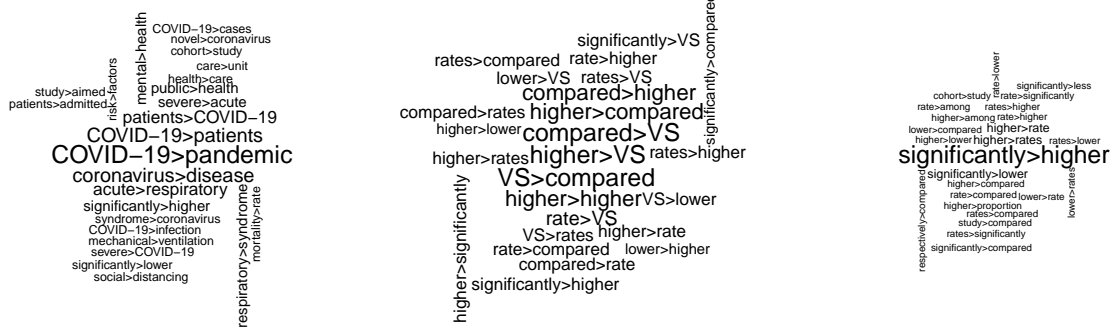


Figure 3: Top 25 bigrams (i.e., edges) by measure.

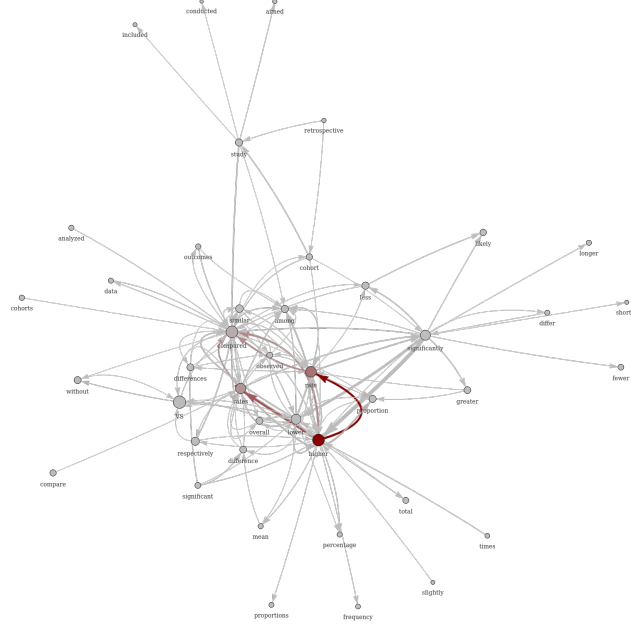


Figure 4: Filtered topic network (by weight). Layout based on Fruchterman-Reingold algorithm. Node size is proportional to topic-specific word probability provided by LDA. Edge width is proportional to topic-specific bigram weight provided by LDA2Net method. Node and edge color represent their betweenness centrality. Isolated nodes have been removed after filtration.