TINNITUS NARRATIVES: ANOTHER SOCIAL MEDIA PERSPECTIVE

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Online forums concentrate hundreds of thousands of spontaneous patients' reports, not biased by the medical interaction.

Machine learning proves to be a handy tool to extract information from these reports.

Comprehensive summaries of the heterogeneity of perceptions to provide insights.
SOCIAL MEDIA DATA AND MEDICAL RESEARCH
- Manchaiah, Londero, Deshpande, Revel, Palacios, Boyd & Ratinaud. **What can we learn about tinnitus from Reddit data.** *Forthcoming*, 2021.
REDIT DATA

➤ Posts from **February 2011 to September 2019**

➤ 101,000 posts created by 12,000 users were retained after data processing

*Medical Interactions Controlled and Filtered*

*Online Anonymity Heterogeneity of perception*
DATA ANALYSIS

Latent Dirichlet Allocation

Representative Sentences

Topic 1 ➔ Summary
Topic 2 ➔ Summary
Topic 3 ➔ Summary

Data ➔ Processed Data ➔ Topic 1 ➔ Summary ➔ Topic 2 ➔ Summary ➔ Topic 3 ➔ Summary ➔ Topic 16 ➔ Summary
LATENT Dirichlet Allocation
Hello I like cats

hello, I ate an orange

Hello! I like cats and dogs
Hello I like cats

Hello! I like cats and dogs

hello, I ate an orange

Corpus

V = \{cat, dogs, hello, orange\}
Choose the topic $T$ of the first word

Given the topic $T$, choose a word $w_1$

Repeat for all the words

$V = \{\text{cat, dogs, hello, orange}\}$
TINNITUS NARRATIVES ON SOCIAL MEDIA
<table>
<thead>
<tr>
<th>C1 - 6.3%</th>
<th>C2 - 4.6%</th>
<th>C3 - 5.3%</th>
<th>C4 - 9%</th>
<th>C5 - 9%</th>
<th>C6 - 3.9%</th>
<th>C7 - 6.8%</th>
<th>C8 - 4.4%</th>
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<tbody>
<tr>
<td>life live feel thing deal learn time depress habitu accept part mind point ignor cope abl hard posit wa year didnt thought start becaus time sinc befor back made wasnt felt rememb couldnt told ago point realli end</td>
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<td>C16 - 7.6%</td>
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<td>sound high pitch sometim head veri tone mine frequenc low chang differ turn someth doe constant louder lower volum usual cure work treatment research studi therapi effect ha trial devic result drug clinic interest money patient current inform base peopi dont becaus lot mani thing someth whi talk person everyon problem reason differ isnt make tri thing wors stress lot anxieti work le doe drink bodi chang good reduc eat medit mind exercis alcohol doctor ent ani medic check effect caus side anyth possibl symptom told recommend noth issu wait suggest hear loss test onli normal ani audiologist veri aid frequenc abl year fine deaf khz rang probabl dont realli wors bad make becaus yeah doesnt fuck mine pretti care worri feel shit bother probabl wont anymor honest hope good read give post tri ill find advic sorri luck pleas great ani question mayb comment guy answer edit</td>
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</table>
Causes
- TMJ
- Brain Damage
- Hearing Loss
- Loud Music

Life's Impact
- Time Perception

Cure and Coping
- Peer Support
  - Experience Sharing
  - Support System
  - Hope
  - Complaints
- State of Research
  - Stress Management
  - Interactions with Doctors
- Sleep Issues
- Depression

Peer Support
- Tinnitus Chronology
- Ever lasting Tinnitus

Benefits of having people that understand
Deception of lack of understanding from the doctors

Identify sources of stress in caffeine, sugar, drugs...
Management with vitamins, natural products (mg)

Teeth and Dental Surgeries
- Neck and shoulder tensions
- Jaw clinching and misalignment
FURTHER RESEARCH
TOPIC DYNAMICS

➤ Leverage the users dynamics to quantify cooccurrence of topics
CONCLUSION

- Tinnitus online data can be a complementary way to interact with the patients symptoms, provided that the large amount data can be digested comprehensively
- There is a lot of room for further collaboration with therapists and practitioners to make the most from these analyses
THANK YOU!

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