QUARTERLY REPORT: GOUT

June 10, 2024

GOUT SUPPORT GROUP of America
If It's Over 6, You Need A Fix

TREND Community

The mission of the Gout Support Group of America (GSGA) is to improve the lives of people living with gout through wellness education, empowerment, and community. Members strive to not only be models of how to successfully manage gout but also to help others identify and manage gout in the community.

TREND Community is a community-powered digital analytics company that turns the conversations of rare and chronic disease communities into actionable insights. With the help of our community stakeholders, our AI engine, Krystie™, turns real-world discussions into insights that can spark broader understanding and therapeutic progress.

DATA SOURCES

GROUPS: Gout Support Group of America (private Facebook group), r/gout (public subreddit)

| POSTS ANALYZED:	COMMENTS ANALYZED:	AVERAGE ENGAGEMENT:	TIME RANGE:
17,835	289,486	15.0 comments per post	2011 – 2024

TOPIC ANALYSIS

- Topic analysis involves clustering language that has similar meaning.

- The most frequent topics are presented to the right and include gout pain and uric acid, diet and food, gratitude and positivity, and flare-ups and joint pain.
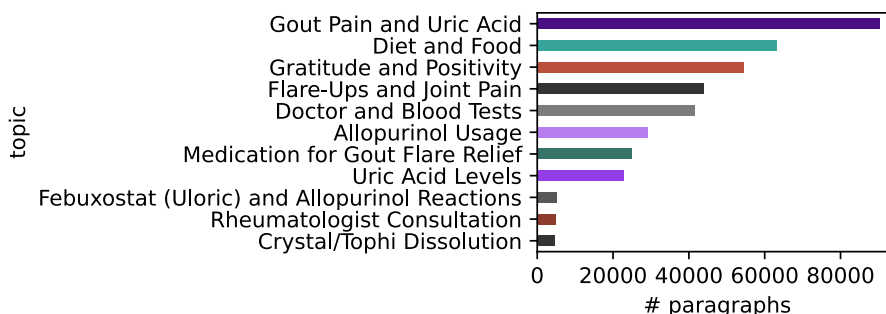
DIET & MEDICATION: The remainder of this analysis compares conversations about diet and those about medication. To that end, paragraphs in the "Diet and Food" topic, and the documents they came from, are considered the **diet** group, while those in the topics "Allopurinol Usage", "Medication for Gout Flare Relief", and "Febuxostat (Uloric) and Allopurinol Reaction" collectively are considered the **med.** group.
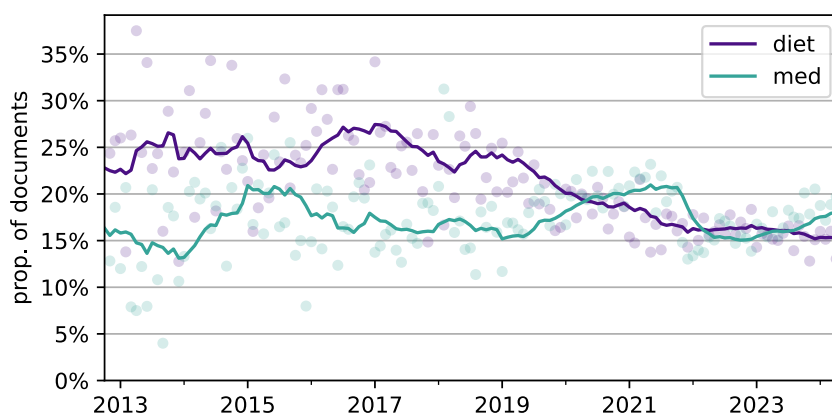
GROUP DOCUMENT COUNTS
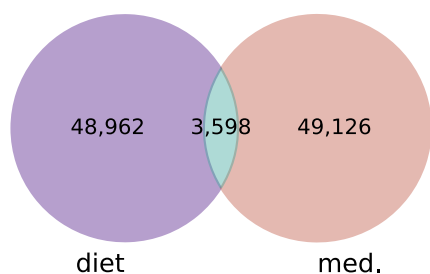
- This shows how many documents (posts or comments) have at least one paragraph in the **diet** group and similarly for the **med.** group.

- A similar number of documents discuss each topic.

- There are not many documents that have a paragraph from both groups.
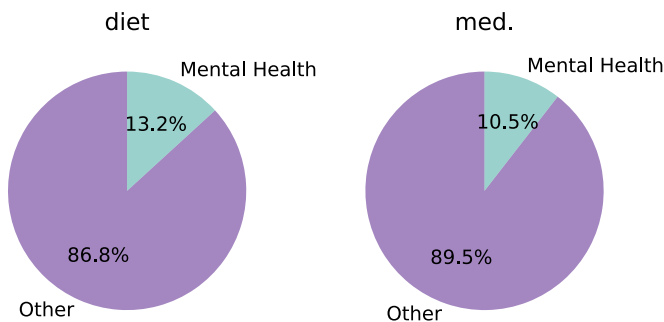
TOPIC PREVELANCE OVER TIME

- The proportion of documents in the **diet** and **med.** group each month are shown below, as well as the proportion over a 12-month window.

- Fewer documents seem to be discussing diet over time, while the proportion discussing medication are relatively steady over the past decade but growing in the last two years.

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MENTAL HEALTH

diet

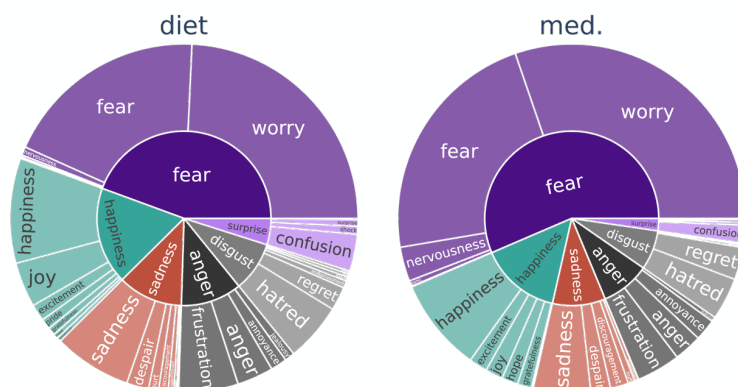Mental Health
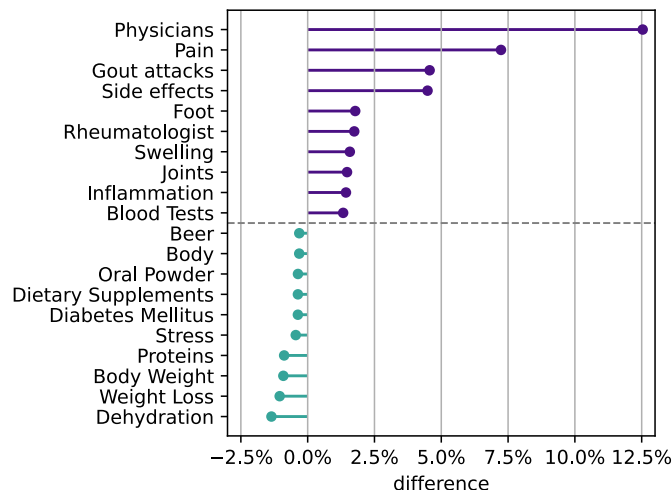13.2%

86.8%
Other

med.

Mental Health
10.5%

89.5%
Other

- Krystie™ analyzes the language of each document it processes and classifies whether or not it discusses mental health.

- A higher proportion of *diet* documents discuss mental health than *med.* documents.

- For reference, the overall proportion of documents that discuss mental health across the entire corpus is 8.3%.

EMOTIONS EXPRESSED

- Emotion mentions in both groups were classified and then binned into six primary emotions (*fear*, *happiness*, *sadness*, *anger*, *disgust*, and *surprise*).

- The most frequent emotions expressed were *worry* and *fear* in both groups.

- Words and phrases most associated with *fear* posts/comments in the **diet** group included *afraid [to] eat, flare*, *drink, beer*, *diet*, and *meat*.

- In the **med.** group, the most associated words and phrases with *fear* included *allopurinol*, *flare, take, colchicine, side effects, doctor, attack,* and *starting*.

diet

med.

ASSOCIATED CLINICAL LANGUAGE

Physicians
Pain
Gout attacks
Side effects
Foot
Rheumatologist
Swelling
Joints
Inflammation
Blood Tests
Beer
Body
Oral Powder
Dietary Supplements
Diabetes Mellitus
Stress
Proteins
Body Weight
Weight Loss
Dehydration

−2.5% 0.0% 2.5% 5.0% 7.5% 10.0% 12.5%
difference

- Krystie™ recognizes and extracts clinical terms and links them to a knowledge base.

- For both groups, the proportion of paragraphs that mention each clinical concept was calculated, and the difference between the proportions was taken.

- The 10 greatest differences on each side are shown. *(Medication concepts are excluded.)*

- The greatest difference was with *Physicians*, which were mentioned 12.5 percentage points more in the **med.** group than the **diet** group.

- The clinical concept with the greatest difference in the **diet** direction was *Dehydration*.

- Overall, differences were lopsided in the direction of the **diet** group.

CONCLUSION

Both diet and medication are discussed frequently in the online gout communities. However, the proportion of documents discussing diet has steadily decreased from around ~25% to ~15% over the past 8 years indicating diet is becoming less of a focus of conversation. While the rate of mental health discussions in both groups are larger than the baseline in the corpus overall, it is higher in the diet group than the med. group, suggesting diet is more associated with mental health than medication in the gout community. We shed some light on the reasons for this by considering the words associated with *fear* – the most frequently mentioned emotion in both groups – as well as the clinical concepts associated more with each group.

In the diet group, mentions of fear are associated with flares and fears about eating certain foods. Combined with the associated clinical concepts like Weight Loss and Body Weight, this suggests community members are discussing the way their diets and weight can impact the occurrence of their flares. On the other hand, when discussing medication, community members seem to be more concerned about side effects.