I worked on a dataset with 43778 rows & 7 columns, below is a sample (first 10 rows).

Animal	Age	Temperature	Symptom 1	Symptom 2	Symptom 3	Disease
Cow	3	103.1	Depression	Painless lumps	Loss of appetite	Pneumonia
Buffalo	13	104.5	Painless lumps	Loss of appetite	Depression	Lumpy virus
Sheep	1	100.5	Depression	Painless lumps	Loss of appetite	Lumpy virus
Cow	14	100.3	Loss of appetite	Swelling in limb	Crackling sound	Blackleg
Sheep	2	103.6	Painless lumps	Loss of appetite	Depression	Pneumonia
Goat	10	101.2	Loss of appetite	Blisters on gums	Difficulty walking	Foot and mou
Sheep	6	103.3	Loss of appetite	Depression	Painless lumps	Lumpy virus
Goat	6	101.7	Difficulty walking	Blisters on tongue	Loss of appetite	Foot and mou
Buffalo	9	102.5	Depression	Painless lumps	Loss of appetite	Lumpy virus
Goat	3	102.7	Lameness	Blisters on mouth	Loss of appetite	Foot and mou

Four distinct Animal types

Total number of cows: 11254

Total number of buffalo: 11238

Total number of sheep: 10658

Total number of goat: 10628

Cows Dataset Information:

Total number of cow entries: 11254

Types of Diseases in the Dataset:

1. Pneumonia
2. blackleg
3. lumpy virus
4. anthrax
5. foot and mouth Disease

Network Statistics:

(Number of nodes (symptoms): 24 Number of edges (co-occurrences): 300 Average node degree: 25.00 Network density: 1.087 Top 5 Strongest Symptom Connections: loss of appetite - depression: 41918525 co-occurrences loss of appetite - loss of appetite: 30611400 co-occurrences loss of appetite - painless lumps: 30274925 co-occurrences depression - painless lumps: 20726233 co-occurrences loss of appetite - difficulty walking: 15399600 co-occurrences)

Network Statistics Explained

Number of nodes (symptoms): 24

The network has 24 nodes, each representing a specific symptom.

Example symptoms might include "loss of appetite," "depression," "painless lumps," etc.

Number of edges (co-occurrences): 300

There are 300 edges in the network, each representing a co-occurrence relationship between two symptoms.

This means that the symptoms have been observed together in some context (e.g., patient records, medical studies).

Average node degree: 25.00

The average degree of a node is 25, meaning each symptom is connected to 25 other symptoms on average.

This indicates a highly interconnected network, where most symptoms co-occur with many others.

Network density: 1.087

Network density measures how interconnected the network is, calculated as the ratio of actual edges to possible edges.

A density of 1.087 suggests the network is very dense, meaning almost every symptom is connected to almost every other symptom.

Top 5 Strongest Symptom Connections

The strongest connections are determined by the number of co-occurrences between pairs of symptoms. Higher co-occurrence values indicate stronger relationships. Here are the top 5:

loss of appetite - depression: 41,918,525 co-occurrences

This is the strongest connection, suggesting that "loss of appetite" and "depression" frequently occur together.

This could reflect a common link in conditions like chronic illness, cancer, or mental health disorders.

loss of appetite - loss of appetite: 30,611,400 co-occurrences

This is a self-loop, indicating that "loss of appetite" often appears repeatedly in the same context (e.g., across multiple patient records or studies).

This might highlight its significance as a recurring symptom in certain conditions.

loss of appetite - painless lumps: 30,274,925 co-occurrences

This strong connection suggests that "loss of appetite" and "painless lumps" often co-occur.

This could point to conditions like cancer, where both symptoms are common.

depression - painless lumps: 20,726,233 co-occurrences

This connection indicates a significant relationship between "depression" and "painless lumps."

This might reflect the psychological impact of discovering lumps (e.g., in cancer patients) or shared underlying causes.

loss of appetite - difficulty walking: 15,399,600 co-occurrences

This connection suggests that "loss of appetite" and "difficulty walking" often occur together.

This could be linked to conditions like advanced cancer, neurological disorders, or severe chronic illnesses.

Interpretation and Insights

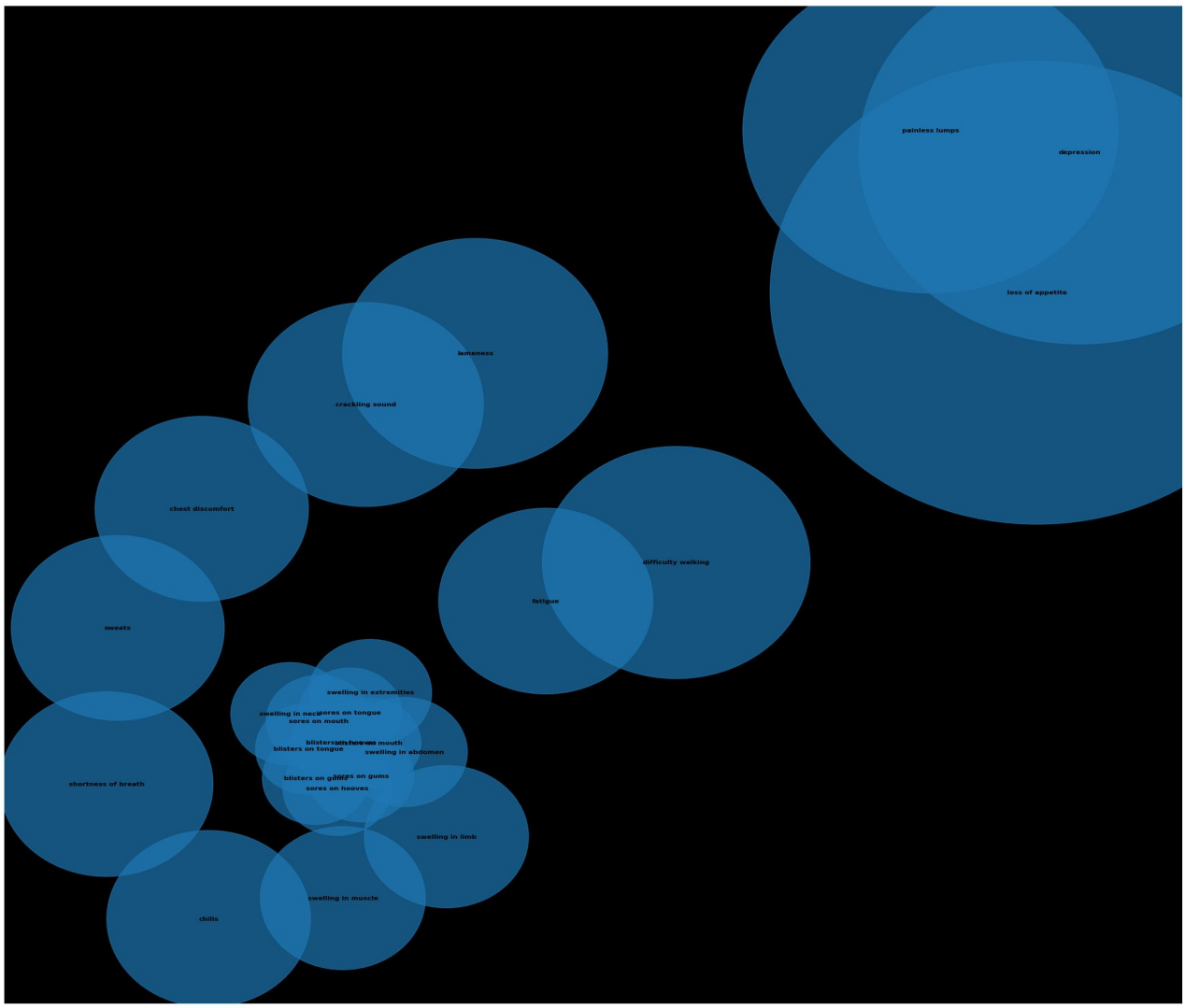
Highly Interconnected Symptoms: The high average node degree and network density indicate that the symptoms in this network are strongly interrelated. This suggests that many of these symptoms may share common underlying causes or occur together in specific diseases or conditions.

Central Role of "Loss of Appetite": "Loss of appetite" appears in all top 5 connections, highlighting its central role in the network. This symptom may be a key indicator of various conditions, particularly those involving chronic illness or cancer.

Psychological and Physical Overlap: The strong connection between "depression" and physical symptoms like "loss of appetite" and "painless lumps" suggests a significant overlap between psychological and physical health in the context of this network.

Potential Applications: This network could be used to identify symptom clusters, predict disease progression, or guide diagnostic processes by highlighting commonly co-occurring symptoms.

Symptom Co-occurrence Network



(please check my github for a clearer picture)