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### Bow Analysis Python Code
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import re
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```
from collections import defaultdict
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```
c11 = ['I first started restricting my food intake because I wanted control over something in my life. Everything felt chaotic—school, friendships, my family—so controlling what I ate made me feel powerful. But soon, it wasn't about control anymore; it was about fear. I became terrified of gaining weight, and even when my body felt weak, even when my stomach ached from hunger, I pushed through. The dizziness, the hair loss, the exhaustion—I ignored it all because the fear of eating was stronger. I relate to that fear, but for me, it comes in cycles. I binge when I feel overwhelmed, like I'm drowning in emotions I can't process. Eating becomes a way to numb myself, to fill some emptiness inside me. But afterward, the guilt is unbearable. That's when the purging starts. At first, throwing up felt like a release, like I was undoing the damage. But it became an addiction—I'd feel relief for a moment, and then the shame would creep back in, making me want to do it all over again.
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That cycle is so familiar. I never thought I'd develop an eating disorder because I used to see food as comfort. But over time, it became a punishment. I'd binge until I was in pain, until I felt disgusted with myself. Purging didn't just get rid of the food—it felt like I was getting rid of the shame. But the damage it did to my body was undeniable. My throat would burn, my teeth become sensitive, and sometimes, I'd pass out from dehydration. And yet, the next binge would come, and I'd do it all over again.
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The physical symptoms are brutal, but the emotional ones are just as bad. I'd lie awake at night thinking about food, about how many calories I'd consumed, about whether I'd eaten too much. My body was always cold, my heart would race randomly, and yet, I still felt like I wasn't "sick enough" to stop. That's the worst part—no matter how much damage I did to myself, it never felt like it was enough.
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That "never enough" feeling kept me stuck for years. I thought purging would help me stay in control, but it only made me feel more out of control. My body was constantly exhausted, my face would swell from the vomiting, and my hands developed scars from where my teeth would dig in when I purged. And emotionally, I was just... empty. I avoided social situations because I was either too ashamed to eat in front of people or too afraid they'd notice my behaviors.
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I feel that too—the isolation, the exhaustion, the endless guilt. I used to think if I just lost a little more weight, or if I just got better at hiding it, then I'd finally feel okay. But I never did. The more I gave in to my eating disorder, the more it took from me. My body, my relationships, my happiness—it all faded. And even though I'm trying to recover now, that voice in my head still whispers that I'll never be enough.

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''']
```

```
vocab = defaultdict(int)
for sentence in c11:
    words = re.findall(r"\b\w+\b", sentence.lower())
    for word in words:
        vocab[word] += 1

sorted_vocab = dict(sorted(vocab.items(), key=lambda x: x[1],
reverse=True))
print("Vocabulary with Frequencies:", sorted_vocab)
```

```
### BoW_a: How would you answer the research question at this point?
### Answer: Physical and emotional symptoms of participants include:
exhaustion, guilt, shame, terrified, ached, hunger, dizziness, hair loss,
ignored, overwhelmed,
# drowning, numb, emptiness, unbearable, throwing up, addiction, pain,
dehydration, sick, swell, vomiting, scars, isolation in the BoW Analysis
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### BoW_b: Reflect critically on BoW analysis. What is the process by
which you generated results (explain the employed function, methodological
decisions you made)?
### Answer: Word Frequency Counting with tokenization and normalization
processing.
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### BoW_c: What decisions have been made for you that enabled you to
perform this analysis? List at least 3 methodological decisions that were
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imposed on you in the analytical process (by virtue of the chosen package and/or the data, task itself).

### Answer:

### BoW\_d: What are the assets and limitations of BoW analysis?

### Assets: Simple and Efficient; Effective for Short Texts; Interpretable

### Limitations: Ignores Word Order and Context; High Dimensionality; Does Not Capture Polysemy or Synonymy

### BoW\_e: What constitutes a "bag" in this analysis? How would you go about changing this (conceptually)?

### Answer: The bag is constructed from all unique words in the corpus. However instead of single words (unigrams), use bigrams, trigrams, or higher-order n-grams.

# This captures more context by including short sequences of words. Deleting unwanted adverbs, verbs and even some adjectives.

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### Sentiment Analysis Python Code
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from transformers import pipeline
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```
sentiment_pipeline = pipeline(model =
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'lxyuan/distilbert-base-multilingual-cased-sentiments-student')
```

```
sentiment_pipeline(filtered_text_data)
```

SA\_d: What are the assets and limitations of SA?

Combining Two Approaches Increases Accuracy

TextBlob provides polarity and subjectivity, while Vader refines negative, positive, and neutral intensities.

Handles Different Text Lengths

TextBlob works well for longer texts, and Vader is better for short-form emotions (e.g., Twitter, focus group discussions).

Allows for Sentiment Comparisons

The compound scores enable session comparisons to track emotional intensity across discussions.

Limitations:

Fails to Capture Nuanced Psychological Expressions

Eating disorder-related phrases often include irony, self-justification, or internal conflict, which standard sentiment models do not recognize.

SA\_e: What constitutes a positive, negative, neutral sentiment? How would you go about changing this (conceptually)?

In the current sentiment models:

Positive Sentiment → Words related to happiness, satisfaction, control (e.g., "awesome", "perfect", "I finally feel in control").

Negative Sentiment → Words related to pain, sadness, guilt (e.g., "terrible", "ashamed", "I felt disgusted with myself").

Neutral Sentiment → Statements that are factual or ambiguous (e.g., "The pizza was okay.", "Skipping meals is something I do.").

How to Improve This?

Use Emotion-Specific Sentiment Models

Instead of just positive/negative, use fine-grained categories like shame, anxiety, sadness, fear for mental health discussions.

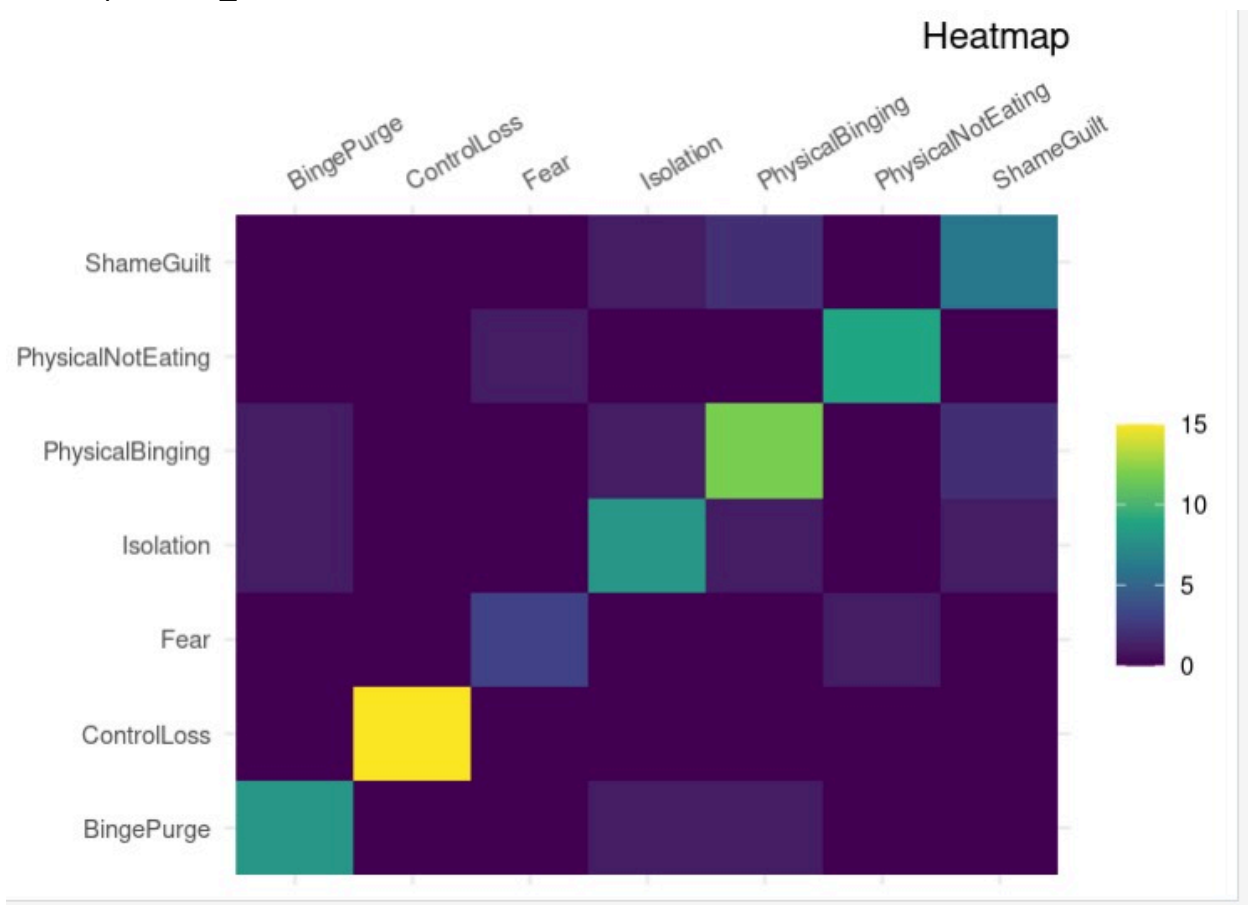
Modify Vader's sentiment lexicon to re-weight certain words based on their clinical significance (e.g., "control", "empty stomach", "powerful", which may seem positive but indicate disordered thinking).

Use Context-Based Sentiment Parsing

Implement context-aware models that analyze sentences in relation to each other, reducing misclassification of harmful behaviors as positive.

This dual-method sentiment analysis (TextBlob + VaderSentiment) improves accuracy and detail compared to single-model approaches. However, it still struggles with context, clinical terminology, and irony, meaning manual validation remains essential.

Heatmap for the \_Sentences files



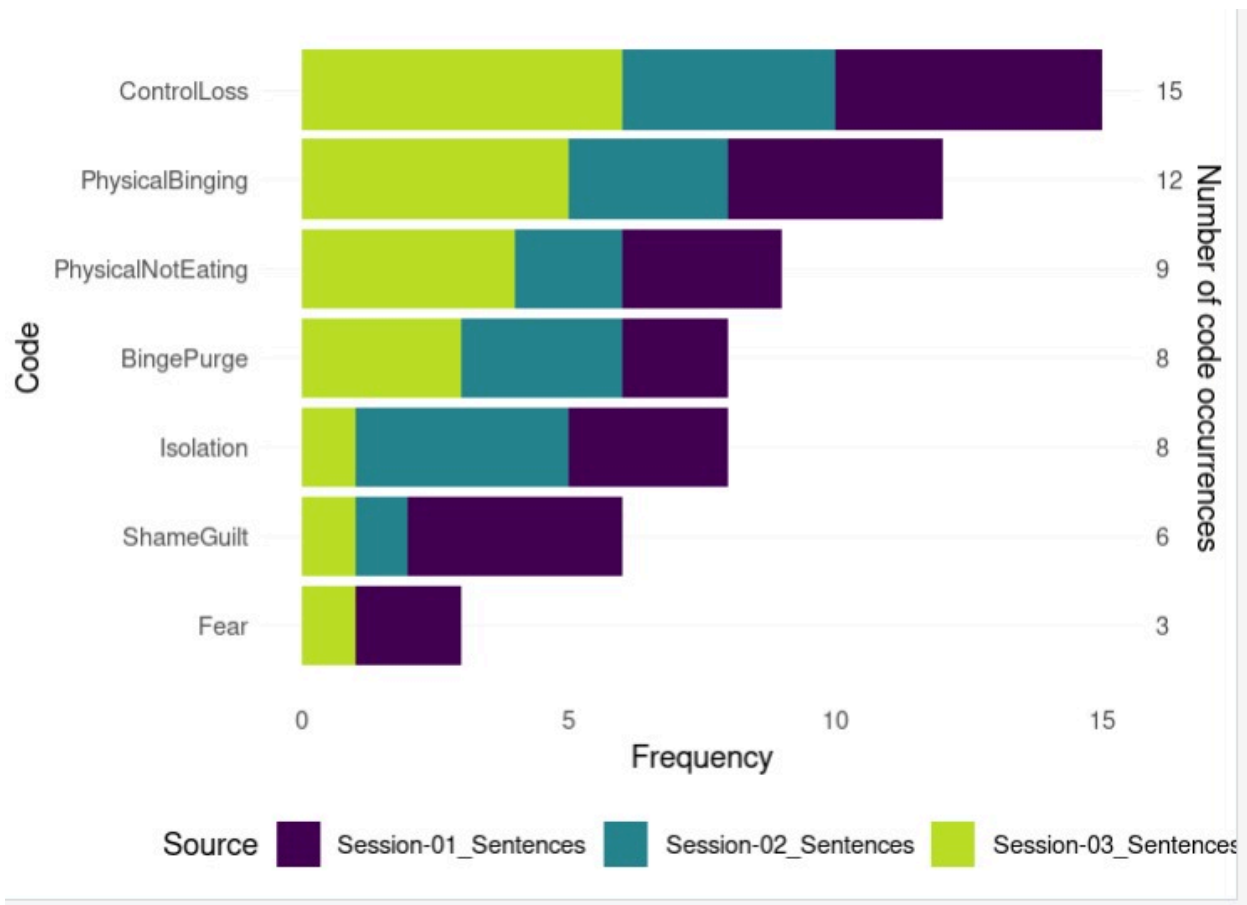
Darker shades (purple) indicate low or no co-occurrence, while lighter shades (green to yellow) indicate higher co-occurrence.

The strongest co-occurrence (low purple) is between "ShameGuilt" and "PhysicalBinging", meaning these two themes appear together in the few cases.

Other notable co-occurrences:

- "Bingepurge" and "PhysicalBinging"
- "Fear" and "PhysicalNotEating"

Codes such as "Fear" and "ShameGuilt" have minimal co-occurrence with other codes.



"ControlLoss" is the most frequently occurring code, appearing 15 times, followed by "PhysicalBinging" (12 times).

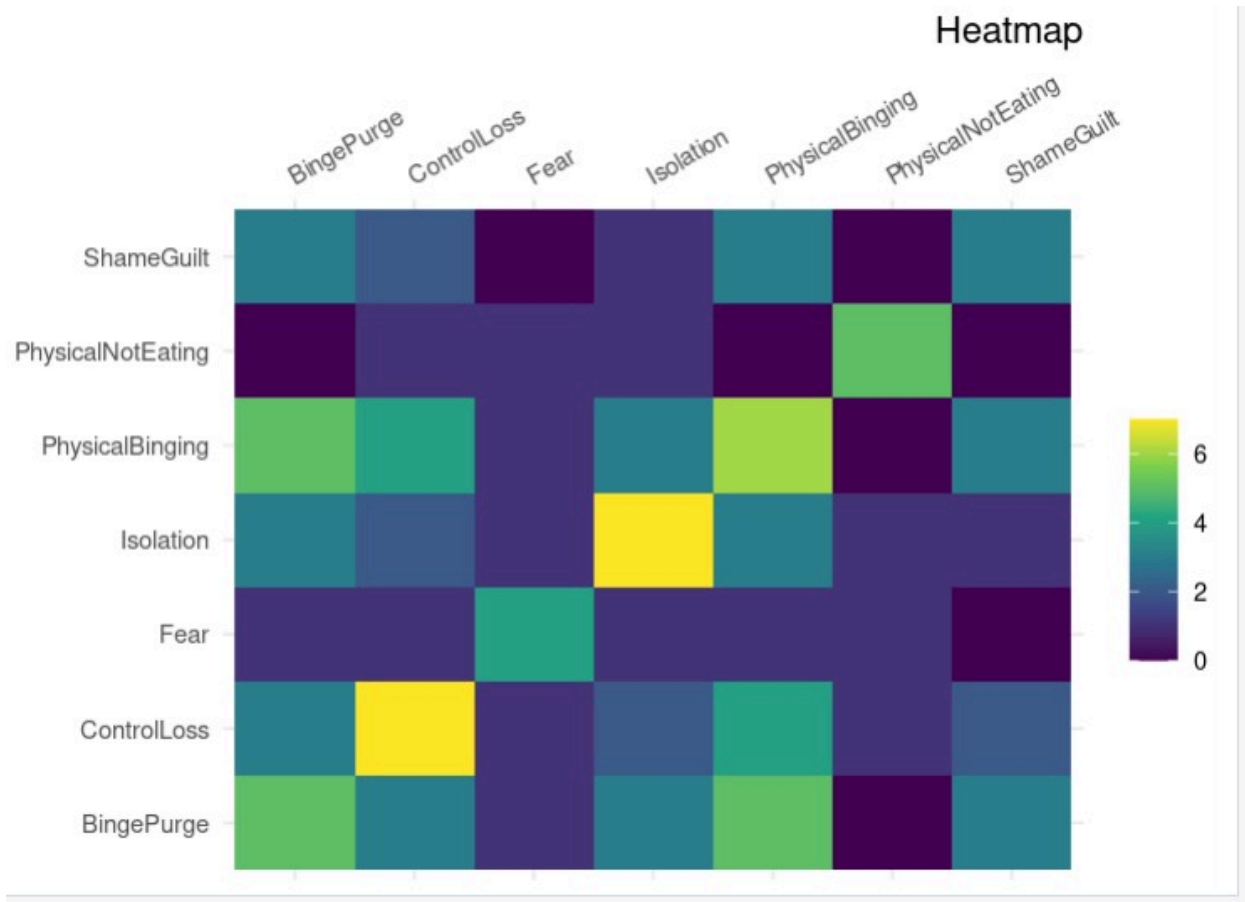
"Fear" is the least frequent code, appearing in less than 5 instances.

The bars are color-coded by session:

- "Session-01\_Sentences" (purple)
- "Session-02\_Sentences" (teal)
- "Session-03\_Sentences" (lime green)

Some codes (e.g., "PhysicalBinging" and "PhysicalNotEating") appear relatively evenly across sessions, while others (e.g., "ControlLoss") have a dominant session.

Heatmap for \_ToT files

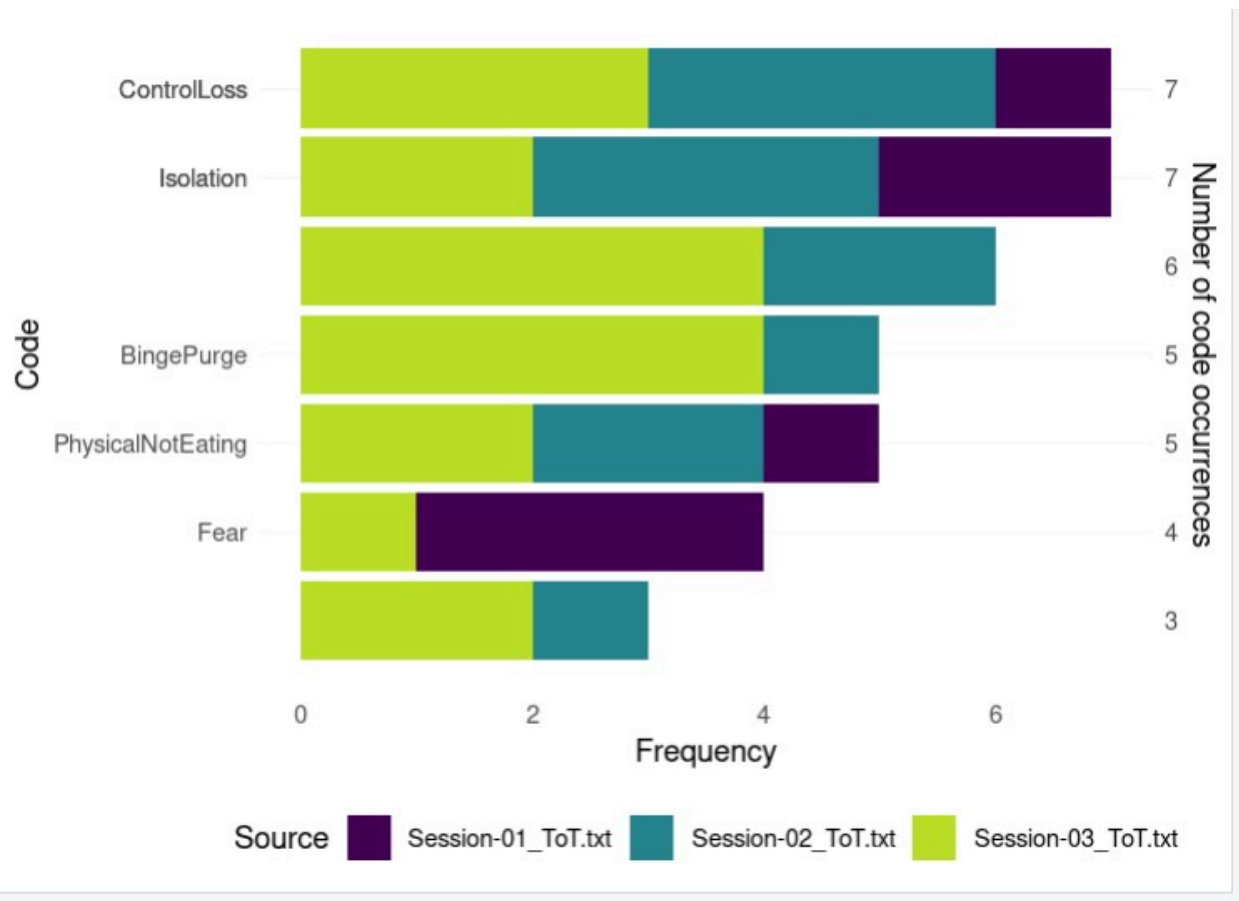


The strongest co-occurrence (grass green) is between "PhysicalBinging" and "BingePurge", meaning these two themes frequently appear together.

Other notable co-occurrences:

- PhysicalBinging and ControlLoss (being more significant)
- ShameGuilt and PhysicalBinging
- ShameGuilt and BingePurge
- BingePurge and ControlLoss

The code Fear has minimal co-occurrence within the heatmap.



"ControlLoss" is one of the most frequently occurring code, appearing 7 times, followed by "Isolation" (7 times). Physical Binging being the least frequently occurring code, having only 3 times appeared.

ShameGuilt and BingePurge is the dominant code of 2 of the 3 responses, they are not mentioned commonly. While ControlLoss and Isolation have a relatively even distribution.