

# Investigation of the Effect of Different Stimuli on the Production and Valence of Emotional Words in Patients with Schizophrenia

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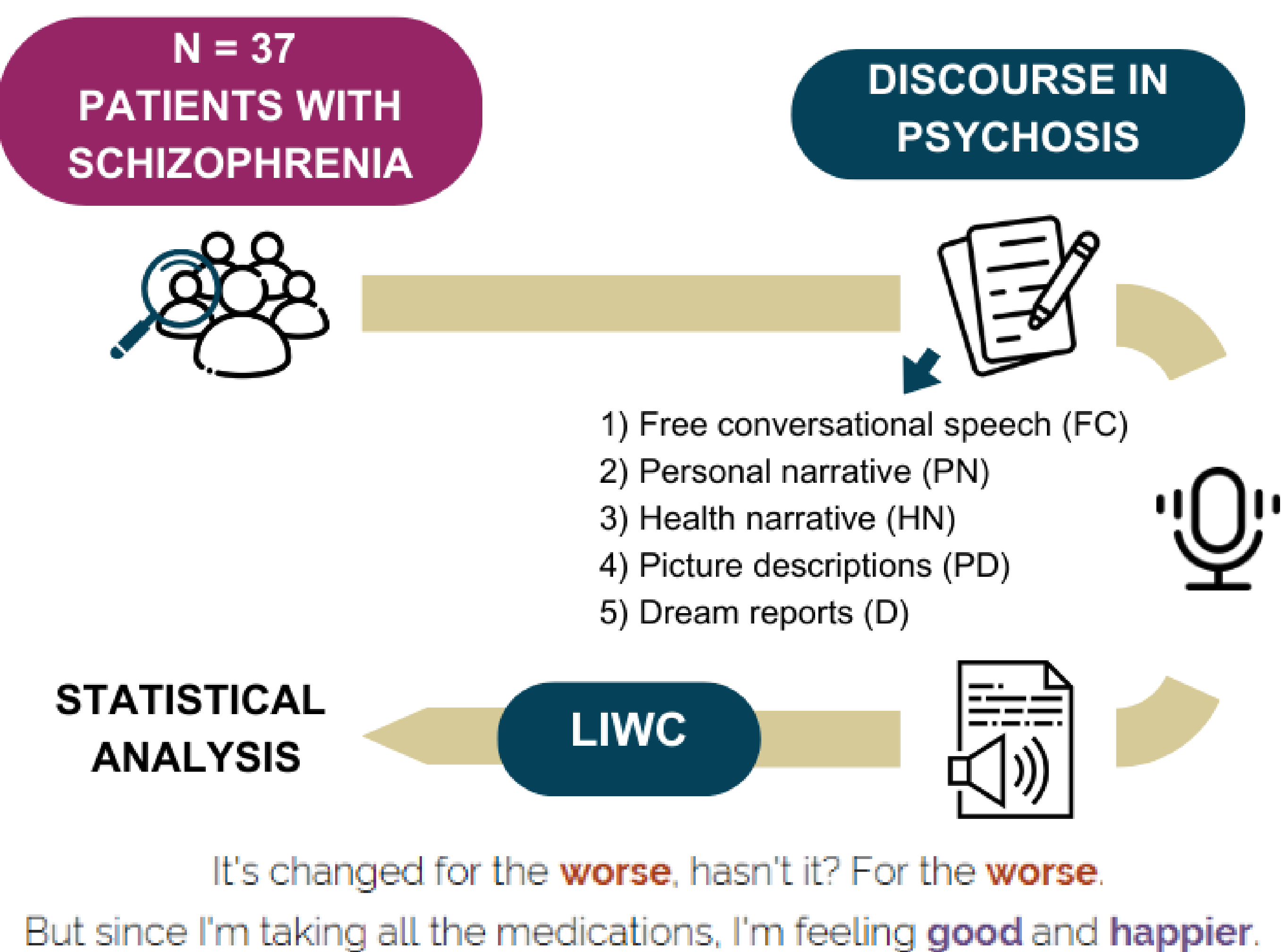
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## Background

- The use of automated methods to analyze the speech of patients with psychiatric disorders is on the rise, allowing unconventional elements to be analyzed during clinical consultation. Speech graphs, which convert speech into visual elements, enable the observation of structural characteristics of speech.
- Emotional, positive, and negative valence words provide valuable insights into a patient's mental state. We aim to assess whether the number and the valence of positive and negative words in speech vary according to the stimulus used.

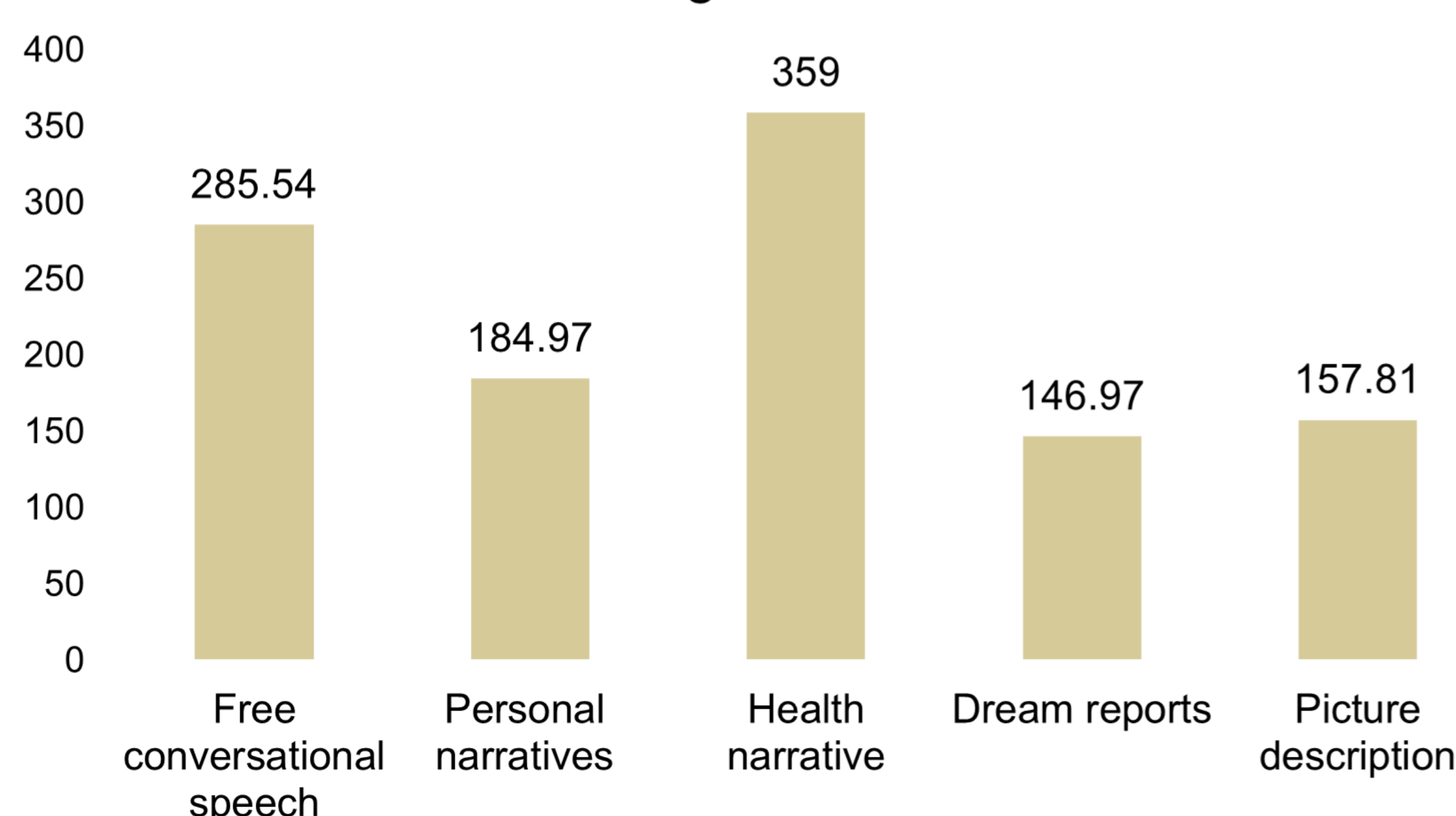
## Method



## Results

The free conversational speech stimulus generated more number of words than the personal narratives ( $Z=-4.195$ ), picture description ( $Z=-4.684$ ) and dream reports ( $Z=-4.677$ ). Meanwhile, the health narrative stimulus generated a more significant number of words than dream reports ( $Z=-4.881$ ) and picture descriptions ( $Z=-5.012$ ).

Comparative analysis of the number of words among different stimuli



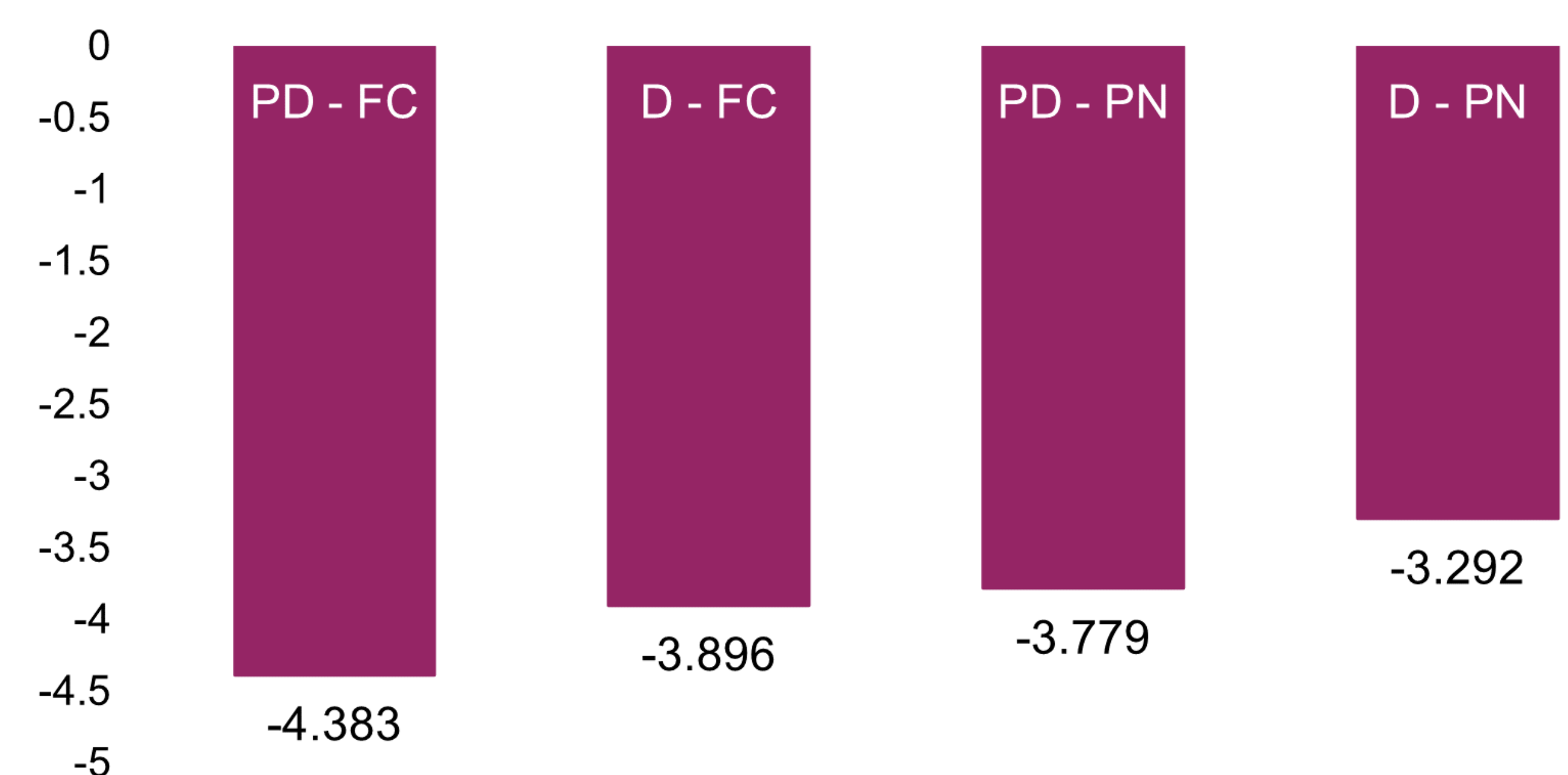
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For positive valence words, the free conversational speech and personal narratives protocols elicited significantly more positive words compared to the picture descriptions ( $Z = -4.383$ ) and dream reports ( $Z = -3.896$ ) protocols.

Comparative analysis of words of positive affectance among stimuli



The health narrative protocol elicited predominantly more negative words than all the other stimuli relating to negative valence words, except for the personal narrative stimulus.

Comparative analysis of words of negative affectance among stimuli



## Conclusion

- The type of stimulus can affect the number and valence of emotional words.
- Participants used more positive words when talking about themselves, their hobbies, and what they like to do.
- They used more negative valence words when reporting on their state of health and life changes after the diagnosis of schizophrenia.
- We suspect bias in the third question of the first stimulus, as asking about favorite activities may encourage more positive speech.

## References

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