



# Exploring the Correlation between Tone and Affect Language and Quality of Life among Patients with Advanced Cancer and their Partners



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## Introduction

### The Psychological Impact of an Advanced Cancer Diagnosis

- An advanced cancer diagnosis can be psychologically devastating for patients and their families
- Individuals diagnosed often grapple with diminished ability to participate in their lives and their intimate relationships, with changes in their relationship dynamics.

### Couples' Communication

- The psychological impacts of the diagnosis can be mitigated by open and effective communication about the cancer diagnosis between partners, but some couples report difficulty with this.
- Thus, this study investigates the quality of couples' communication and its correlation to quality-of-life measures with more objectivity.

### Hypotheses

- Partners with more negative tone and negative affect will have more negative quality of life outcomes.
- Partners with more positive tone and positive affect will have more negative quality of life outcomes.

## Methods

### Participants

- Patients: n = 85 (57.6% female, age range: 32-79, 92% white, 100% non-Hispanic) all with Stage III-IV lung, breast, GI or GU cancer.
- Partners n = 76 (57.7% male, age range: 31-82, 87.22% white, 98% non-Hispanic).

### Procedure

- Participants were recruited from the Duke Cancer Institute based on inclusion criteria: advanced cancer, married or in a committed relationship, at least age 18 and able to speak/read English.
- Surveys measured quality-of-life in patients and partners
- 10-min recording of a conversation about cancer was made and transcribed for analysis with Linguistic Inquiry and Word Count (LIWC).

## Results

### Tone and Affect: Differences by Gender

- No significant differences in positive or negative emotion or tone were found between patients and caregivers based on gender or role (patient or caregiver).

### Tone, Affect, and Quality of life Measures

	Correlation Coefficients: LIWC Variables and Quality of Life Measures						
	R <sup>2</sup> -value						
	P-value						
	tone_pos	tone_neg	emo_pos	emo_neg	emo_anx	emo_anger	emo_sad
positive affect	0.13 0.09	-0.062 0.43	0.04 0.59	-0.09 0.25	-0.02 0.79	-0.03 0.67	-0.02 0.81
negative affect	0.08 0.33	0.04 0.59	0.04 0.56	0.06 0.43	0.07 0.36	0.06 0.42	0.00 0.96
HADS depression scale	0.01 0.46	-0.04 0.63	-0.03 0.70	0.03 0.70	0.00 0.92	-0.05 0.54	<b>-0.16</b> <b>0.05</b>
HADS anxiety scale	0.06 0.46	-0.04 0.63	0.00 0.92	-0.04 0.62	0.00 0.98	-0.3 0.71	-0.06 0.43
Patient QUAL-E preparation scale	-0.01 0.90	0.07 0.52	0.00 0.93	0.06 0.59	0.01 0.91	0.05 0.63	-0.09 0.41
Patient QUAL-E completion scale	0.14 0.22	<b>-0.24</b> <b>0.028</b>	0.11 0.29	<b>-0.28</b> <b>0.01</b>	-0.18 0.097	-0.00 0.97	<b>-0.24</b> <b>0.02</b>
Partner QUAL-E preparation scale	0.04 0.74	-0.03 0.79	-0.06 0.62	0.10 0.39	0.17 0.13	0.11 0.32	-0.12 0.28
Partner QUAL-E completion scale	-0.13 0.27	0.08 0.5	-0.21 0.06	-0.04 0.73	0.08 0.50	0.03 0.79	-0.09 0.41
Relationship Satisfaction	0.07 0.37	-0.00 0.98	0.07 0.40	0.05 0.52	-0.02 0.80	-0.14 0.07	0.08 0.29

## Discussion

### Findings

- The only significant associations found between the tone and emotion variables and the quality-of-life measures were:
  - Between **sad emotion words** and **HADS depression scale** (negative association)
  - Between **sad emotion words** and **Patient QUAL-E scale** (negative association)
  - **Negative Tone, negative emotion, and sad emotion words** each had significant (negative) association with **Patient QUAL-E scores**.

### Limitation:

- LIWC is rudimentary, counting and categorizing words without full cultural meaning, context, or nuance accounted for.

### Future Directions and Significance

- Understanding the mechanisms behind the associations found between words and self reported quality-of-life in this population can lead to better informed psychological interventions for those facing terminal illness and their families.



## References

