Using Emotional Valence to Analyze Elicited Stories about an Important Event Told by Individuals with TBI in TBIBank

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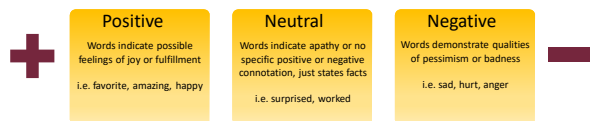*Department of Communication Sciences and Disorders, Central Michigan University*

Background

Introduction

Traumatic Brain Injury (TBI) is a leading cause of long-term disability in the United States. A TBI can be "caused by a bump, blow, or jolt to the head that disrupts the normal function of the brain."[1] Traffic accidents, falls, and work related injuries are among the most common etiologies of TBI.[2] It is estimated 3.2-5.3 million people in the U.S. are living with a TBI-related disability.[3] The resulting physical, cognitive, and emotional limitations can be devastating and impact overall wellbeing and everyday life. Following a TBI, majority people experience multiple forms of loss including loss of autonomy and relationships.[4] These post-injury changes can also impact how a person conceptualizes their own identity. Narratives are one means to explore changes in identity. Through narrative processes individuals are able to integrate a diverse range of life experiences within their identity.[5]

Emotional Valence

The valence of one's story is a crucial part of understanding identity post-injury. Emotional valence can be used to reveal the underlying attitudes and feelings of how people with TBI may view their impairments. Personal narratives can elicit positive, neutral, or negative emotional valence.[6]

Positive	Neutral	Negative
Words indicate possible feelings of joy or fulfillment	Words indicate apathy or no specific positive or negative connotation, just states facts	Words demonstrate qualities of pessimism or badness
i.e. favorite, amazing, happy	i.e. surprised, worked	i.e. sad, hurt, anger

Research Aims

What is the emotional valence of a story about an important event told by person with TBI?
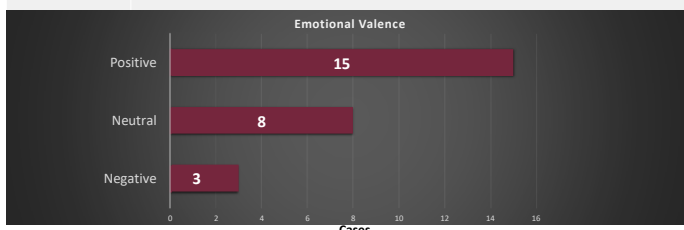
Methods

Data Source
- This project used secondary data obtained from the TBIBank. database.
- A total of 39 important event stories told by people with a TBI were available for analysis.

Procedures
- All stories were coded by a group of four trained reviewers.
- A discrete scale was used to code the 39 stories as having a valence of positive, neutral, or negative.
- Only 26 of the stories followed the prompted protocol and contained all variables needed for analysis.

Analysis
- CLAN software was used to analyze participant responses.
- The four trained reviewers individually coded a selected amount of stories which were then cross-referenced. Any discrepancies were brought to all reviewers for consensus.
- The codes for valence were entered into SPSS to analyze for descriptive statistics.

Results

Participant Characteristics (n=26)

Age	<25 (6), 26-45 (17), >46 (3)
Severity	Severe (18), Moderate (3), Mild (4)
Sex	Male (23), Female (3)
Years of Education	8-11 years (7), 12 years (3), 13-14 years (4), 15-17 years (10), 18-20 years (2)

Emotional Valence

Cases	
Positive	15
Neutral	8
Negative	3

Emotional Valence and Severity

Severity		Severe	Moderate	Mild	Total
Valence	Positive	10	3	2	15
	Neutral	6	0	2	8
	Negative	3	0	0	3
Total		19	3	4	26

Emotional Valence and Sex

Sex		Male	Female	Total
Valence	Positive	14	1	15
	Neutral	8	0	8
	Negative	1	2	3
Total		23	3	26

Emotional Valence and Age

Age		<25	26-45	>46	Total
Valence	Positive	3	11	1	15
	Neutral	3	4	1	8
	Negative	0	2	1	3
Total		6	17	3	26

Emotional Valence and Years of Education

Years		8-11	12	13-14	15-17	18-20	Total
Valence	Positive	3	1	2	7	2	15
	Neutral	4	0	1	3	0	8
	Negative	0	2	1	0	0	3
Total		7	3	4	10	2	26

Discussion

Key Findings

Over half of the cases were coded as having positive emotional valence.

Clinical Implications

Stories are a powerful means for conveying how a person feels about themselves or their identity. Listening to stories that clients tell and tuning in to the emotional valence of such stories may have an impact on the relationship between the client and clinician.

Limitations

This study had a limited amount of cases. Additionally, important event stories in some cases were uncodable or did not include all variables for analysis and therefore were not included in the final sample size. This limited the amount of statistical analysis that could be completed on this sample to determine if factors such as age, TBI severity, sex, and years of education have an impact on the emotional valance of stories told by persons with TBI.

Future Research

Future research could explore the influence of the relationship between the client and clinician in what type of story content is shared during rehabilitation sessions. An expanded sample could allow for exploration of factors such as age, TBI severity, sex, and years of education influence the emotional valance of a story.

Acknowledgements

References

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