

# Self-Awareness Language after Traumatic Brain Injury

## Introduction

This project focused on individuals with TBI (traumatic brain injury) and language used when self-awareness of an injury has increased. Research has shown that self-awareness of one's impairments improves with time as one adjusts to the disability. The current methods for studying and measuring self-awareness in TBI patients are subjective rating scales and self-report questionnaires, where an individual's ratings of his or her own disability is compared to a family member's ratings. In this scenario, the examiner assumes the family member is absolutely accurate in their assessment of the individual. Since this is almost never the case, these measurements are suspect. This project attempted a different method that examined the use of 'self-awareness' language..

## Objective

Sun and Nippold (2012) studied typically-developing adolescents whose use of metacognitive verbs (MCVs) and abstract nouns (ABNs) increased with advancement in abstract thinking, organization of information, ability to deal with complex issues and understanding others' beliefs. It was believed that these features of language could be used as a more objective measurement of self-awareness, replacing the more subjective rating scales.

## Methods

The first step to this project was to find an agreement among published research involving MCVs and ABNs where an accurate definition for these terms could be identified.

- ABNs are different from concrete nouns, which call to mind visual, auditory, tactile, or olfactory images that contribute to the noun's meaning (i.e. humility, misfortune, wisdom).
- MCVs are words that describe mental processes such as discover, experience or reflect.

During this first step it was discovered that there were metacognitive verbs and metalinguistic verbs (MLVs). It was then decided that both terms should be used in our evaluation.

- MLVs are words that describe speech processes.

## Interviews

The interviews that were used for this project came from the *College Survey for Students with Brain Injury* (CSS-BI, Kennedy & Krause, 2009) where self-awareness of individuals who attended college after TBI was determined by the number of challenges individuals reported on the survey. These interviews had already been transcribed with the students after they had completed the survey. The two sections of the survey discussed in the interview that were used for this project involved the student's experience as a college student after brain injury and the life changes experienced after brain injury.

## Methods – cont.

The next step was to examine the use of MCVs, MLVs, and ABNs in the interviews and to determine whether the use of more MCVs, MLVs, and ABNs increased in individuals who had lived with their injury longer than others.

It was during this process that it was realized coding for MCVs, MLVs, and ABNs for both the interviewer and the participant would need to be done due to the strong influence the interviewer has on the patient and speech production. Upon this decision it was also decided to stop coding for ABN's because it was believed an increase or decrease in ABNs would not have any significant correlation with self awareness.

After compiling lists of all verbs used by the interviewer and the participant for all fifteen interviews, the lists were coded a "0" for neither MCV nor MLV and a "1" for MCV or MLV in respective columns. Following this a reliability check was conducted and results showed a 92% agreement between coders.

## Methods – cont.

From this point words were coded a zero for the verbs participants used that were also used by the interviewer and that were also included in the survey. This was done to ensure that the unique verbs the interviewer used would not be calculated in the total of unique verbs the participant used, assuring that the verbs calculated for the participant were uninfluenced by the interviewer and the *College Survey for Students with Brain Injury*. The next step was to sum the number of total verbs, MCVs, MLVs and verbs removed due to the interviewer and the survey. After this, these totals were evaluated along with the time post-injury, calculated in months.

## Results

Through this project there was hope to discover that MCVs and MLVs were influenced by time-post injury due to the increase in self-awareness by the patient. However after calculating the correlation between months post-injury and MCVs and MLVs for each patient, it was discovered only the correlation between post-injury and MLVs approached statistical significance while all other correlations were insignificant.

Researchers hope to continue work with this data by comparing these verb totals with the patients' vocabulary. It is hypothesized that this will determine whether vocabulary may have an influence on the total number of MCVs and MLVs instead of time post-injury and self awareness. The correlation with the patients' vocabulary will be evaluated using the Fluency/Language Measurements (Verbal IQ, National Adult Reading Test (NART) and D-KEFS Verbal Fluency) that were used to test the patients whose interviews were used for this project.