



**Determiners of Depression among Adults with Traumatic Brain Injury
Research Project 2007-2008
Summary Report**

Background:

Extensive research exists that identify critical factors associated with the onset and re-occurrence of depressive episodes among non-disabled adults. This research has identified a variety of variables that are associated with depression, such as, age, gender, employment and relationship status, family history, substance abuse, and others. Much less research of this kind exists involving adults with acquired brain injury. The purpose of this study was to assess a variety of variables and their relationship to depression in a post-acute population of ABI adults. Based on clinical experience and the prevailing literature the following variables were considered – quality of life, loss of quality of life, friendships, marital status/relationship intimacy, employment status, level of disability, cognitive executive functioning, emotional coping style, religiosity, and pet ownership-attachment.

It was hypothesized that these variables should significantly correlate with depression. The inter-correlation of these variables was examined to identify those with more central importance in predicting depression. No single study in the literature has incorporated all of the factors mentioned above.

Method:

Participants:

Forty-four program participants at Brain Injury Services were recruited to participate in the study. The research was led by Dr. Bruce Linder, clinical director at Brain Injury Services in conjunction with McMaster University undergraduate students from the department of psychology. Out of the 44 participants, 12 were female and 32 were male. The mean age of the participants in the group was 44 years of age with the youngest participant being 22 and the oldest being 61 years of age.

The mean length of Injury (LOI) was 20 years with a low of 4 and high of 46 years. Regarding nature of injury, 48% of the participants tested acquired their brain injury as a

result of a motor vehicle accident while 20% of brain injuries were the result of an assault and 18 % the result of a fall, medical condition or other.

The level of disability of each participant as reported by their staff indicated that 53% of the participants in the study were considered completely independent while 47% required some level of assistance.

Description of Measures:

1. The Beck Depression Inventory-II (BDI-II) is a 21 item multiple choice questionnaire used to assess the existence and severity of symptoms of depression as listed in the DSM-IV. A structured Depression Interview was also given to assess whether or not participants considered themselves depressed and whether the depression was chronic or cyclical.
2. The Loss of Quality of Life Inventory –Modified (LQOLI-M) is a 16 item written assessment used to examine the satisfaction, importance and depth of loss of 16 important areas of life including health, self-esteem, goals and values, money, work, play, learning, creativity, helping, love, friends, children, relatives, home, neighborhood and community. In a second session with the participants, the same assessment administered verbally. An extra subsection was added for each item to assess how the item impacted on the individual's ability to achieve satisfaction with their life.
3. The Adult Self Report (ASR) was used to assess social relationships by using its Friends, Spouse or Partner and Family subscales. This short questionnaire quantifies friendship by number and frequency visited, uses an 8-item questionnaire to assess romantic relationship if any, and assesses quality of relationships with family.
4. The Personal Assessment of Intimacy in Relationship (PAIR) was used to assess intimate relationships in depth. It is a 36-item questionnaire including Emotional, Social, Sexual, Intellectual, Recreational and Conventional subscales.
5. The Disability Rating Scale (DSR) is an 8-item scale used to rate an individual's physical and cognitive functioning. The DSR includes a rating for employability which refers to the overall cognitive and physical ability to be an employee or student.
6. The Functional Assessment of Verbal Reasoning and Executive Functioning Test (FAVRES) is a recently designed test used to assess verbal reasoning and executive functioning making use of "functional" tasks. This assessment is designed to provide results that are more easily translated into predictions about day-to-day activities such as scheduling and planning activities.

7. The Coping Response Inventory (CRI) assesses coping strategies. It asks the subject to think of his or her most significant problem in the past 12 months. Responses are factored into 8 dimensions. Four of these are approach styles of coping and include Logical Analysis, Positive Reappraisal, Seeking Guidance and Support and Problem Solving. The other four are avoidant styles of coping and include Cognitive Avoidance, Seeking Alternative Rewards, Acceptance or Resignation, and Emotional Discharge.
8. The Religiosity Involvement Questionnaire-Combined (RIQ) is adapted from the Spiritual Involvement and Beliefs Scale and the Peters et al. Delusions Inventory. The first assesses overall religiosity with 26 items divided into External/Ritual, Internal/Fluid, Existential/Meditative, and Humility/Personal Application factors. The second was used to determine if too much religiosity would not be a buffer for depression but would cause the individual to be delusional and enhance it.
9. The Attachment to Pets Questionnaire-Combined (APQ) is a compilation of three pet scales. It is adapted from the Lexington Attachment to Pets Scale, Anthropomorphism Scale Interview and the companion Animal Bonding Scales. It was hypothesized that too much attachment to a pet would lead to dysfunctional behaviour and possibly depression. This was measured by the Anthropomorphism scale, a short 10-item questionnaire.

The following table lists the scales used for each of the study variables:

Variable	Measure Used
Depression	Beck Depression Inventory-II (BDI-II)
Quality of life/Loss of quality of life	Loss of Quality of Life Inventory Modified (L-QOLI M), Quality of Life Interview
Friendships	Adult Self Report (ASR)
Marital status/relationship intimacy	The Personal Assessment of Intimacy in Relationship (PAIR), Adult Self Report (ASR)
Employment status	Disability Rating Scale (DSR)
Level of disability	Disability Rating Scale (DSR)
Cognitive executive functioning	Functional Assessment of Verbal Reasoning and Executive Functioning Test (FAVRES).
Emotional coping style	Coping Response Inventory (CRI)
Religiosity	Religiosity Involvement Questionnaire-Combined (RIQ)
Pet ownership-attachment	The Attachment to Pets Questionnaire-Combined (APQ)

Results:

The overall results of the depression interview showed that 35% of participants in the study reported suffering from depression. Fifty percent of these participants reported chronic depression while the other 50% reported their depression to be cyclical. The BDI-II; however, showed that 53% of the participants reported minimal depressive symptoms, 21% reported mild depressive symptoms, 7% reported moderate depressive symptoms and 21% reported severe depressive symptoms.

When examining the variables associated with increased depression in participants, only two factors were strongly correlated as measured by the BDI-II. These were quality of life and coping strategies. Friendships and one item on the religiosity scale had moderate correlations with depression.

Quality of life was strongly negatively correlated, suggesting that individuals with a perceived low quality of life may have higher levels of depression. Additionally, the more satisfied the participant was with his/her quality of life, the less loss was felt.

When examining how the participants coped with daily stressors, Avoidant styles of coping responses rather than approach styles of coping were highly correlated with depression. The styles of coping that resulted in strong correlations were Cognitive Avoidance and Acceptance and Resignation. This suggests that individuals who avoided thinking realistically about their problems and those that reacted to problems by accepting them, tended to have higher levels of depression. A third avoidant strategy, Emotional Discharge was also moderately positively correlated with depression indicating that individuals who have high levels of reducing tension by expressing negative feelings also have higher levels of depression.

The results of the Adult Self-Report (ASR) indicated moderate correlations for friendships. Participants with more friends, better relationships with friends and frequent visits with friends appeared to be less depressed.

When examining the participant's religious beliefs, only one aspect of the delusional subscale of the Religiosity Involvement Questionnaire (RIQ) was significantly correlated with depression. Subjects with a strong belief that their thoughts were alien to them were more likely to be depressed.

Surprisingly, several factors did not correlate with depression. This included: age, gender, level of functioning, length of injury, employment status, relationship status, family relationships, pets and executive functioning skills.

Summary:

The purpose of this study was to assess a variety of variables and their relationship to depression in a post-acute population of ABI adults. The results indicated a strong correlation between level of depression and quality of life and coping strategies. As a

result, individuals with a perceived low quality of life and those with high levels of avoidant coping may be at risk for higher levels of depression.

Future Research:

Future research will be focused on increasing the number of subjects in our study, specifically increasing the overall number of females. A larger population of females may have produced relationships between gender and depression. A larger scale study could also provide a greater understanding of how length of injury, age, relationships, animal companions, religiosity, level of functioning, executive functioning, and employment status affect depression in adults with ABI.

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