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The self-esteem of community college students with traumatic brain injury and their use of disabled student services

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THE SELF-ESTEEM OF COMMUNITY COLLEGE STUDENTS WITH
TRAUMATIC BRAIN INJURY AND THEIR USE OF
DISABLED STUDENT SERVICES

A Thesis

Presented to

The Faculty of the College of Education

Division of Special Education and Rehabilitative Services

San Jose State University

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

By

Tal Kapel

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ABSTRACT

THE SELF-ESTEEM OF COMMUNITY COLLEGE STUDENTS

WITH TRAUMATIC BRAIN INJURY AND THEIR USE OF

DISABLED STUDENT SERVICES

by Tal Kapel

This thesis investigated the level of self-esteem of community college students with Traumatic Brain Injury (TBI) and the level of their use of disabled student services. It determined whether there is a significant difference in the level of self-esteem of students who indicated different level of use of the services. The sample consisted of 33 students with TBI from community colleges in Santa Clara County. The level of self-esteem was measured by the Rosenberg Self-Esteem Scale (RSES) and the level of use of the services was determined by using a questionnaire developed by the author.

A significant number of students indicated high and moderate level of self-esteem. The level of use of the services was low. The chi-square (χ^2) test revealed no significant difference in the level of self-esteem of students who indicated different level of use of the services. Implications of the data for practice and further research are discussed.

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Finally, I would especially like to acknowledge the community college students with traumatic brain injury who participated in this study. I appreciate their cooperation and willingness to share their experience.

DEDICATION

This thesis is dedicated to my parents Mr. and Mrs. Nahon for teaching me the value of hard work, to my husband Alon for being there to help me along the way, and to my dear children Liran, Rony, and Gil for showing respect and understanding.

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CHAPTER 1

INTRODUCTION

David was 18 years old, a high school graduate with a plan to go to college to study computer science, when he was involved in an automobile accident. He suffered a severe brain injury resulting in physical impairments, memory loss, behavioral changes, and emotional disorders. David is typical of thousands of young people with Traumatic Brain Injury (TBI) in the U.S. According to the National Head Injury Foundation, Inc. (1993), the total number of traumatic brain injuries in the U.S. is over 2 million per year, with 500,000 severe enough to require hospital admission. Each year, 75,000 to 100,000 Americans die as a result of a TBI. Advances in medical technology make possible the survival of an increasing number of people with TBI who only a few years ago would have died. Approximately 70,000 to 90,000 of those who survive each year are left with disabilities severe enough to preclude a return to a normal life (National Head Injury Foundation, Inc., 1993).

TBI affects mostly young adults in their late teens and early twenties. Males outnumber females by a ratio of more than 2:1 (Twelfth Institute on Rehabilitation Issues, 1985). Motor vehicle accidents cause 50% of all TBI. Falls account for 21% of TBI, assaults and violence for 12%, and sports and recreation for 10% (National Head Injury Foundation, Inc., 1993). Brain injury is a very complex and multi-faceted phenomenon. The injury may disrupt cognitive processing, physical activity, and social functioning of the survivors. Persons with TBI have become a major concern for rehabilitation counselors because the residual disabilities severely interfere with the person's psychosocial adjustment (Lynch, 1983). Thus, the rehabilitation and the re-education of college students with TBI are extremely complicated.

Young adults in their late teens and early twenties are in the process of developing independence, forming intimate relationships, securing identity, planning for their vocational future, and developing a positive feeling of self-worth. This process is much more difficult for young people who sustain TBI since they experience intellectual deficits and emotional turmoil resulting from the injury. Many individuals with TBI experience continued dependence and loss of autonomy in many areas (Bergland & Thomas, 1991). Many of them hold unrealistic vocational expectations since the brain injury itself may cause diminished self-awareness and lowered ability to solve problems and perceive situations correctly (Wehman & Kreutzer, 1990). As a result of their struggle to cope with the social demands, many individuals experience lowered self-esteem (Tyerman & Humphrey, 1984).

Research into the nature and treatment of college students with TBI is in its early stages and further study in this issue is strongly recommended (Cook, Berrol, Harrington, Kanter, Knight, Miller, & Silverman, 1987). Several studies in the research literature investigated the psychosocial adjustment of individuals who sustained brain injury (Bergland & Thomas, 1991; Garske & Thomas, 1992; Johnson & Newton, 1987; Kaplan, 1991). However, no current study that focused on community college students with TBI was found.

Background

Each year, more than 2,500 students with brain injury enter the California community college system. These students represent the fastest growing segment of the disabled population in community colleges (Cook et al., 1987). Students with brain injury entering the community college system are at various stages of rehabilitation and are a very heterogeneous group. Taking classes at a community college may be part of their

reintegration into the community, or their only way of gaining necessary skills for entry into the job force or the college mainstream (Lange, Lange, & Tunstall, 1991). Many of the college students with TBI used educational programs for other reasons besides formal degree matriculation. This educational setting is often used as prevocational preparation, or as an opportunity to participate in a variety of academically and cognitively oriented tasks (Jacobs, 1989).

During the last decades, many efforts have been made to re-integrate individuals with brain injury into the community (Ylvisaker & Gobble, 1987). Landmark changes in public advocacy and human rights legislation paved the way for better community integration for people with disabilities. The Americans with Disabilities Act (ADA) of 1990, as a comprehensive document, covers a number of subjects significant to the rights of individuals with disabilities. The ADA focused more attention on modifications, especially designed to meet the needs of individuals with disabilities and to facilitate their full integration into the society. During the 1980s, Federal and state legislation were passed to promote and enhance services for students with disabilities. The 1983 Amendments to the Education of the Handicapped Act of 1975, section 626, refers to the educational and employment transition difficulties of students with disabilities and authorized grants to improve and strengthen education, training, and related services for this population (Brolin & Gysbers, 1989). Accommodations for students with disabilities can also be provided through another Federal law, Section 504 of the Rehabilitation Act of 1973. This law is enforced by the Office of Civil Rights of the U.S. Department of Education and protects the civil and constitutional rights of individuals with disabilities.

In June 1976, in the state of California, landmark legislation was passed through the Lanterman Act (AB 77). This act provided an array of services for community

colleges. As a result, the majority of California's community college campuses established the Disabled Student Program (DSP). The DSP provides support services and classes for students with physical, communicative, and learning disabilities. These services include academic assistance, cognitive retraining, adaptive physical education, personal and career counseling, and speech language programs.

In 1983, the Chancellor's Office of the California community colleges established the Consortium for the Study of Programs for the Brain Injured. The Consortium consisted of a multidisciplinary team to research and recommend program standards for students with brain injury. A survey completed by the Consortium in the fall of 1985 showed that many academic, cognitive, social, physical, and vocational programs were being implemented within the California community colleges. The survey results also indicated that campuses currently serving students with brain injury were experiencing positive results (Cook et al., 1987). Based on these findings, the major assumption that guided the current study was that using an array of social support services and participating in instructional support classes may address the special needs of students with TBI. As a result, the emotional well-being of students who used these services frequently may be improved. The self-esteem of the students with TBI was investigated in this study as one index of their emotional well-being.

Statement of the Problem

The consequences of traumatic brain injury often cause a secondary handicap of low self-esteem that contributes to poor social adjustment of the survivors (Bergland & Thomas, 1991; Johnson & Newton, 1987; Tyerman & Humphrey, 1984). Research has also indicated that providing adequate services such as counseling, cognitive retraining, and adaptive physical education positively influenced the development of the

self-esteem of persons with brain injury (Cook et al., 1987; Kerner & Acker, 1985; McGuire & Greenwood, 1990). Therefore, it might be possible to find a significant difference in the level of self-esteem between students with TBI who used Disabled Student Program (DSP) services frequently and those who did not. However, there have been no studies to date focusing on the level of self-esteem of community college students with TBI and the level of their use of DSP services and classes.

Purpose of the Study

The purpose of this study was (a) to investigate the level of self-reported self-esteem of students with TBI from community colleges in Santa Clara County, (b) to survey what DSP services and classes those students used and how often, and (c) to determine if there is a difference in the level of self-esteem of students with TBI who indicated different level of use of DSP services and classes.

Major Research Questions

The following research questions guided this investigation:

1. What is the level of self-reported self-esteem of community college students with traumatic brain injury?
2. What kind of DSP services and classes do college students with TBI use and how often?
3. Is there a significant difference in the level of self-esteem of community college students with TBI who reported different level of use of the DSP social support services?
4. Is there a significant difference in the level of self-esteem of community college students with TBI who reported different level of use of the DSP instructional support classes?

Significance of the Study

The self-esteem of college students with TBI was investigated in this study. Self-esteem is one component of emotional well-being and it could significantly affect the student's adjustment to college (Saracoglu, Minden & Wilcheskly, 1989). Based on the premise that using disabled student services has the potential to positively influence the level of students' self-esteem, the present study attempted to determine if there is a significant difference in the level of self-esteem of students who indicated different level of use of DSP services. The study would provide essential descriptive information about community college students with TBI, as well as a useful context for improving intervention strategies for this population. The results of this study could be an aid to coordinators of DSP services in the community colleges and to other rehabilitation professionals who desired to address the academic and personal needs of individuals with traumatic brain injury.

Overview of Methodology

In order to address the questions proposed in this study, the author investigated students with TBI from different community colleges in Santa Clara County. Subjects were asked to complete a questionnaire about their level of self-esteem, demographic characteristics, and the DSP services and classes they used during the last year.

Self-esteem level was measured by using the Rosenberg Self-Esteem Scale (RSES), a 10-item inventory that had been used as a self-report measure of self-esteem (Rosenberg, 1965). Demographic data about the subjects and information regarding their use of DSP services were collected by using a questionnaire developed by the author. The information collected from all sources was statistically analyzed and conclusions were drawn based on the data.

Definitions of Terms

The following definitions explain terms that appear in this investigation:

College Student

An individual who enrolled at a community college and demonstrated progress through the college curriculum.

Community College

An institution of higher education that offers the first two years of college instruction and career education and grants an associate's degree. It is either a separately organized institution or an institution that is a part of a public school system or system of junior colleges. Offerings include transfer, occupational, and/or general studies programs.

Disabled Student Program

Activities in the community college that provide support services, specialized classes, and instructional programs for students who have a physical or mental impairment that substantially limits one or more major life activities.

DSP Instructional Support Classes

The DSP classes include: (a) an adaptive computer laboratory where students use specialized computer software to improve basic skills and cognitive deficits; (b) adaptive physical education classes that provide special exercises for individuals with physical limitations; (c) cognitive retraining classes providing learning strategies and instructional interventions for students with speech, language, and acquired cognitive disorders; and (d) academic assistance courses offering learning strategies for students with learning disabilities or acquired cognitive deficits.

DSP Social Support Services

DSP social support services include: (a) counseling services for students who seek assistance in dealing with a variety of educational, personal and career concerns; (b) support group activities offering group experiences to provide social support and to increase the students awareness of their potential, strengths, and weaknesses; (c) a career development program where students explore individual skills, interests, values, and personality styles as they relate to career choices of individuals with disabilities; (d) an independent living skills program providing day-to-day survival skills and strategies to increase the students' independence and problem-solving abilities; and (e) social clubs providing recreational activities and social events.

Level of Use of DSP Services and Classes

High level of use of DSP services and classes refers to those who used the services or the classes twice a month or more; medium level of use refers to those who used DSP services and classes monthly; and low level of use refers to those who used DSP services and classes less than once a month or did not use them at all.

Self-Esteem

A subjective evaluation indicating that one is a person of worth or value as opposed to the evaluation that one is bad, incompetent, or worthless. Self-esteem is a personal judgment and is expressed in the attitudes the individuals hold toward themselves.

Traumatic Brain Injury

Traumatic Brain Injury (TBI) is defined as an insult to the brain that may produce a diminished or altered state of consciousness which results in impairment of cognitive abilities or physical function. It can also result in the disturbance of behavioral or

emotional functioning. These impairments may be either temporary or permanent and cause partial or total functional disability or psychological maladjustment. Traumatic brain injury is often referred to by a variety of other terms such as head injury, brain injury, brain trauma.

Assumptions

For the purpose of this study, the author assumed the following:

1. Selected community colleges in Santa Clara County would be willing to participate in the study and would provide the researcher access to students with TBI.
2. A reasonable number of students with TBI would be willing to participate in the study and to complete the questionnaires accurately and honestly.
3. The Rosenberg Self-Esteem Scale would provide an accurate measure of individual's self-esteem, and the subjects would respond to it honestly and accurately.
4. Students with TBI who participated in the study would be varied in their level of self-esteem and their level of use of disabled student services.

Limitations

For the purposes of conducting this research, the author accepted the following restrictions:

1. The study used a self-report measurement that could yield useful data. Individuals with TBI who have cognitive deficits and unrealistic self-evaluations may compromise the validity of the measurement.
2. The inherent heterogeneity within the brain-injured population imposed uncontrollable variables that may influence the results of the study.
3. Self-esteem is an ambiguous term and may therefore be difficult to assess.

4. The sample of the study was not random; thus, the sample may not be necessarily representative.

Delimitations

For the purpose of conducting this study, the author encumbered the study with the following restrictions:

1. Only community college students with TBI were investigated in this study. The results may therefore not be generalizable to the entire brain injured population.
2. The study included only community colleges from Santa Clara County and results may not be generalized to other community colleges.
3. The study was limited only to a sample of college students with TBI and no control group for comparison was used.

Summary

There are a significant number of students in community colleges who experience complex physical, psychological, and cognitive impairments as a result of traumatic brain injury. In order to facilitate the integration of these students into the community college and to promote their rehabilitation, the community colleges offered the Disabled Student Program services on behalf of these students. This chapter introduced a study that would investigate the level of self-reported self-esteem of students with TBI in community colleges at Santa Clara County and the level of their use of DSP services and classes.

CHAPTER 2

REVIEW OF THE LITERATURE

“The silent epidemic” is how recent media has referred to brain injury. The population of persons who have sustained Traumatic Brain Injury (TBI) is increasing. Many of those who survive continue to have moderate to severe multiple impairments. A review of the literature indicated that a great deal had been written on TBI and its consequences. However, no direct research on the level of self-esteem of college students with TBI and the their level of use of Disabled Student Program (DSP) services has been found. The research questions of this study addressed (a) the level of self-reported self-esteem of community college students with TBI, (b) the level of use of DSP services and classes of students with TBI, and (c) whether there is a significant difference in the level of self-esteem of students who reported different level of use of the DSP support services and classes. The following chapter discusses the nature of TBI, psychosocial aspects, and current literature related to the major research questions.

Nature of Traumatic Brain Injury

Traumatic Brain Injury (TBI) is an injury to the brain from an external physical force. TBI is an acquired neurological disorder that occurs after the individual has had a reasonably normal development experience. Different from other types of neurological disabilities, TBI is not a degenerative disability, nor the result of a disease process (Falvo, 1991). TBI is not a progressive disease; thus, individuals with TBI have a reasonable life span. There is a spontaneous recovery during the first months after the injury, with continued observable changes over the first year (Lynch, 1983). Recovery is influenced by the site and extent of the injuries, age, and other complications. TBI may occur at any age, but is more common among older adolescents and young adults.

Type of TBI

There are two types of TBI: (a) a closed brain injury, and (b) an open (penetrating) brain injury. Closed brain injury results from a blow to the head or from a violent movement of the head that strikes the brain against the skull. The brain as a whole has been traumatized and the injury may be more diffuse (Falvo, 1991). The injury can be primary, occurring at the time of the injury as a direct result of the force, or it can be secondary, occurring later as a result of hemorrhage, edema, or hematoma. Individuals with closed head injuries usually experience a combination of impairments at varying levels of severity as a result of the primary and secondary damage to the brain (Cook et al., 1987).

In open (penetrating) brain injury, not only is the brain injured from external force, but skull fragments may also injure the brain. The functional impairments experienced with open head injury may be more localized and are usually related to the specific area of the brain affected (Falvo, 1991).

Severity of TBI

Brain injury outcomes can vary from death to only temporary deficits that allow the person to return to pre-injury levels (Falvo, 1991). Usually, brain injury is classified as of mild, moderate, or severe type. The basis for classification is: (a) the length of time the individual was unconscious, or the length of a coma, a state of unconsciousness in which the person cannot be aroused and/or does not respond; and (b) the length of Post Traumatic Amnesia (PTA) period, the time from the accident to the recovery of continuous memory. The longer the period of unconsciousness and PTA, the more severe the injury to the brain and the greater the functional limitations (Torkelson, Jellinek, Malec, & Harvey, 1983). Mild to moderate head injuries are characterized by

loss of consciousness for a period varying from a few minutes to 24 hours after the injury. Severe head injuries are characterized by loss of consciousness for one or more days after the injury (Falvo, 1991).

The Consequences of TBI

The resulting effects of traumatic brain injury on the survivors include physical, communicative, cognitive, and psychosocial impairments. The type and severity of problems will be dependent upon the type of injury, location of the injury, the age at which the injury occurred, the pre-morbid personality of the person receiving the injury, the quality of medical and rehabilitation care, and the support systems for the person with TBI (Cook et al., 1987). Because the circumstances are unique, and it is known that specific areas of the brain control various intellectual and physical functions, each individual with TBI produces a unique set of resulting symptoms and functional deficits (Lynch, 1983). Even if there is an identical lesion within the brains of two people, the manifestation of problems may be entirely different for each of them. Therefore, it is very important to approach every college student and his/her particular circumstances individually (Cook et al., 1987).

Physical impairments.

The physical impairments may include motor deficits such as paralysis, weakness, loss of balance resulting from impairment in muscle coordination, or spasticity of muscles. Some other common physical consequences are visual deficits, hearing deficits, bowel and bladder dysfunction, seizures, and sensory impairments (Falvo, 1991).

Communicative impairments.

Some individuals with TBI suffer from communication disorders, the inability to comprehend and use language. Communication disorders can result from motor difficulties or dysfunction of the language centers in the brain (Falvo, 1991). The individuals experience a breakdown in language abilities like writing, reading, speaking, and listening.

Cognitive impairments.

TBI may alter some cognitive skills. Cognitive deficits that cause numerous psychosocial problems often pose the most stubborn obstacles to the patient's return to satisfying vocational and social lives (Ylvisaker & Gobble, 1987). The literature describes some cognitive impairments that commonly persist among young adults with TBI in different combinations and degrees of severity. The cognitive impairments include: (a) memory impairments such as difficulty in learning and remembering new information, rules, and procedures, inefficient retrieval of old information, and inability to remember personal history or skills that were once very familiar; (b) inflexibility in attending, acting, and thinking; (c) slow and inefficient processing of information; (d) difficulty in concentration; (e) difficulty in processing large amounts of abstract or other information; (f) impaired attention and perception; (g) poorly organized behavior, verbal expression, and problem solving; (h) deficits in spatial reasoning which means inability to interpret, coordinate, and manipulate information related to object, space and constructional relationship; and (i) impaired "executive functions" such as self-awareness of strengths and weaknesses, goal setting, planning and working towards a desired outcome in a flexible manner, diminished self-initiating, self-inhibiting, self-evaluating, and self

monitoring (Ben-Yishay & Diller, 1981; Berrol, Rappaport, Cope & Cervelli, 1982; Ylvisaker & Gobble, 1987).

Behavioral and emotional impairments.

Rehabilitation literature widely noted the behavioral and emotional manifestations as well as personality changes among individuals who sustain brain injury. Current research reported that depression, anxiety, reduced self-esteem, and poor social performance were common among individuals with severe brain injury (Bergland & Thomas, 1991; Garske & Thomas, 1992; Johnson & Newton, 1987; Kaplan, 1991). These individuals exhibited behaviors such as sudden mood swings from happy to sad (with little or no provocation), impulsiveness, behavioral restlessness, social disinhibition, decreased initiative, failure to perform certain tasks or duties, and diminished goal-directed behaviors (Greif & Matarazzo, 1982). Survivors of TBI also show aggressive behavior that may include violent, verbal, or physical acts toward people or objects. (McMahon & Fraser, 1988). These personality changes and emotional difficulties have been recognized as very serious barriers to effective vocational rehabilitation and functional recovery (Garske & Thomas, 1992).

Poor self-awareness among individuals with TBI was also described in the literature (Wehman & Kreutzer, 1990). Individuals may lack insight into the inappropriateness of their behavior and may be unaware of their deficits. The young adults who sustained a brain injury may demonstrate unrealistic expectations or appraisals of their abilities, or they may disagree with others' observations regarding their behavior or performance.

Psychosocial Aspects

The multiple limitations of individuals with severe and moderate brain injury often create a serious barrier to their social adjustment. In general, the quality of life of many persons with TBI is dramatically diminished. The literature indicated adjustment difficulties in the following areas: emotional reactions, return to work, social relationships, and leisure activities.

Emotional Reactions

Emotional reactions such as depression, anxiety, lack of motivation, and low self-esteem are common among a large number of individuals who sustained severe brain injuries (Carlson, 1982; Newcombe, 1982). Usually, it is difficult to discern the extent to which these reactions are the direct result of psychological damage to the brain and the extent to which they are a personal reaction to the losses associated with the disability itself (Falvo, 1991).

Individuals with TBI, like other people with acquired disabilities, may go through several stages of psychological adjustment. Some clinicians suggested that the early stage is characterized by shock and confusion, when the individuals have difficulty viewing their problems as permanent. The next stage is characterized by depression and grieving as a result of understanding their situation. Ideally, the final stage in the psychological adjustment is the ability of the individual to accept the disability as a long-term impairment, to plan accordingly, and to participate more fully in the rehabilitation plan (Livneh, 1982; Schontz, 1975; Vash, 1981). Unfortunately, some individuals with severe TBI experience serious difficulties to achieve this final stage of adjustment because of their poor self-awareness (Wehman & Kreutzer, 1990).

Return to Work

Current studies indicated that a large number of persons with severe and moderate TBI fail to obtain or sustain paid employment in non-sheltered work situations (Ben-Yishay, Silver, Piasetsky, & Rattok, 1987; Wehman & Kreutzer, 1990; Ylvisaker & Gobble, 1987). Ben-Yishay et al. (1987) reviewed the return-to-work literature and concluded that vocational failure following TBI was related to cognitive dysfunction, disinhibition, lack of initiative, poor interpersonal skills, and impaired self-awareness.

Individuals with TBI organically fail to perceive deficits and their implications for vocational and social functioning. As a result, they may resist considering alternatives to pre-traumatic goals, and they do not accept different vocational programs appropriate to their current abilities (Ben-Yishay & Diller, 1981). Those who do have some awareness of what they cannot do may experience sorrow, frustration, and helplessness (Lezak, 1978). The brain injury often places the individual in a marginal position, caught between a role that is desirable but not achievable and a role that is available but not acceptable (Shontz, 1975).

Social Relationships and Leisure Activities

Young people with TBI experience loss of autonomy, responsibilities, and privileges. Much of their time is spent in therapy or consumed by relearning old tasks. Therefore, they miss participation in events, leisure activities, and other rights of passage that are a natural part of their peer group (Bergland & Thomas, 1991). The literature mentioned that individuals with TBI suffer from social isolation as a result of their disabilities. Cognitive and psychosocial disturbances interfere with their ability to establish mutually satisfactory relationships (Ylvisaker & Gobble, 1987). According to Bergland and Thomas (1991), who investigated the psychosocial adjustment of adolescents with

TBI, these adolescents reported that after their injury they could not reestablish old or initiate new friendships and they were less involved with social activities. In addition, the serious cognitive and emotional consequences of TBI are invisible. The invisibility creates circumstances in which the true severity of the person's disability leads people to expect performance beyond his or her true ability. This situation creates more stress to individuals with TBI (Cook et al., 1987).

Traumatic Brain Injury results in a complex interplay of deficits in physical, psychological, and social functioning. Psychosocial difficulties extend beyond physical healing and contribute most to disruption of meaningful life activities. Repeated failure and frustration lead to a secondary damage to the individual's self-esteem (Tyerman, 1984). The purpose of this study was to investigate the level of self-esteem and the level of use of DSP services among college students with TBI. The following literature review is related to the major research questions of the study and is organized accordingly.

Self-Esteem

There have been many attempts to define the term "self-esteem" in the psychological literature. Brewin (1988) defined self-esteem as "the subjective evaluation that one is a person of worth or value as opposed to the evaluation that one is bad, incompetent or worthless" (p.135). According to Coopersmith (1967), self-esteem is a personal judgment of worthiness that is expressed in the attitudes the individuals hold toward themselves. Branden (1969) stated that self-esteem is confidence in a person's ability to think and to cope with the basic challenges of life and to enjoy the fruits of his or her efforts. According to Branden, self-esteem is a powerful force within each individual and it is a very important key to the individual's psychosocial adjustment.

Self-esteem is influenced by many sources. The literature described two main sources. The first is the discrepancy between the actual and ideal self, the gap between what one would like to be and what one thinks one actually is (Pope, McHale, & Craighead, 1988). The second source is the perception of the attitudes of others (Festinger 1954).

Self-Esteem and Individuals with Disabilities

Studies measuring the self-esteem of individuals with acquired disabilities showed that many of those individuals suffer from low self-esteem (Harvey & Greenway, 1984; Henker, 1976; Weinberg-Asher, 1976). In contrast, some other studies reported that the self-esteem of those with physical disabilities was not consistently lower than the self-esteem of the able-bodied (Arnold & Chapman, 1992; Burden & Parish, 1983; Magill & Hurlbut, 1986).

However, disabilities have the potential of creating poor self-esteem. First, individuals with disabilities tend to report lower self-esteem as a result of their inability to accept the limitations imposed by the disability. The inability to accept these limitations may create a discrepancy between the actual and ideal self, which tends to have a negative influence on the self-esteem (Pope et al., 1988). Second, low self-esteem can be a result of a life associated with rejection and being labeled as different (Roessler & Bolton, 1978). Bender (1981) claimed that negative attitudes toward people with disabilities are common in our society, and there is a danger that those with disabilities will themselves absorb these negative views.

Self-Esteem and Individuals with TBI

Low self-esteem was found among individuals with TBI in several recent studies

(Bergland & Thomas, 1991; Garske & Thomas, 1992; Holosko & Huege, 1989; Johnson & Newton, 1987). The consequences of TBI are complex and may severely disturb the self-esteem of the survivors (Tyerman & Humphrey, 1984). Tyerman (1984) suggested that individuals with TBI had difficulties to cope with the social demands for which they are no longer adequately equipped. As a result, these individuals experienced lowered self-esteem and self-assurance. In addition, the high incidence of denial and cognitive deficits of these people damages their ability to build a new image and positive self-esteem (Diller, 1990). Trethowan (1970) emphasized that “self-concept change is especially pertinent for the head injured since an injury to the head, by reason of the very importance of the organ, in which the ego or centre of self-esteem to be located, can be especially threatening” (p. 33).

Measurement of Self-Esteem

The measurement of self-esteem has involved a wide variety of empirical techniques. The most common approach has been the use of standardized self-reports in which the individuals are asked to apply a numerical rating scale to some descriptions of themselves. Other approaches to evaluate the person’s self-esteem are projective techniques, unstructured interviews, or ratings by persons other than the individual (Wells & Marwell, 1976). There is a variety of criticism in the literature regarding the various forms of self-esteem measurement. According to Wells and Marwell, some critics argued that a human process like self-esteem is not inherently measurable in a meaningful way. Crandall (1973) also suggested that self-esteem is an ambiguous term and is therefore difficult to measure. Crandall claimed that “it requires much work to demonstrate that one has a valid measure of a trait, such as self-esteem, which cannot be measured in any completely objective sense” (p. 52). However, the above authors

mentioned that operationalization of the concept was important for empirical research and investigators interested in self-esteem need to be aware of the difficulties in measuring the self-esteem.

Instruments for Measuring Self-Esteem

The literature suggested many self-report inventories that may be used to measure self-esteem. Crandall (1975) recommended some scales that represent the best of the current scales specifically designed to measure self-esteem. The most recommended and widely used scales were (a) the Tennessee Self-Concept Scale (Fitts, 1965), (b) the Piers-Harris Children's Self-Concept Scale (Piers, 1969), and (c) the Janis-Field Feelings of Inadequacy Scale (Eagly, 1967). The next two widely used scales were (a) the Rosenberg Self-Esteem Scale (Rosenberg, 1965) and (b) the Self-Esteem Inventory (Coopersmith, 1965). The Rosenberg Self-Esteem Scale was selected to measure the level of self-esteem of the subjects who participated in this investigation.

The Rosenberg Self-Esteem Scale

The Rosenberg Self-Esteem Scale (RSES) measures the self-perceptions of individuals regarding their self-esteem. The RSES is a short self-report instrument that measures the self-acceptance aspect of self-esteem. The RSES was developed originally for use with high school students, but it is applicable to various ages (Rosenberg, 1965). Rosenberg (1965) reported a reliability coefficient of .92 and a scalability value of .72 for the scale. Wylie (1974) mentioned that it is impressive that this 10-item scale received such a high reliability and has yielded relationships supporting its construct validity. Later reviewers also supported the considerable evidence of the scale's reliability and validity (Chiu, 1988; Simmons, 1987).

RSES is widely used and is considered to be an acceptable measure. Hagborg (1993) mentioned that, based on his conducted computer search, the RSES was included in over 60 published studies within the last five years. Hagborg investigated the relationship of the RSES to a multidimensional scale of self-concept and found that the RSES total score and both its factor scores were strongly related to global self-worth. These findings support Rosenberg's conclusions that his measure is a strong indicator of an adolescent's global self-esteem, and they also support the unidimensional nature of the scale. On the other hand, some negative points about this scale were found in the literature: (a) the RSES measured only one aspect of self-esteem and no other relevant factors, and (b) there was no central repository for information for potential users (Crandall, 1973).

In sum, the RSES is a brief scale and an easy to administer instrument. These characteristics made it a feasible measure for people with cognitive limitations. Moreover, current literature (Garske & Thomas, 1992; Johnson & Newton, 1987; Tyerman, 1984) strongly recommended the use of the RSES instrument by rehabilitation professionals to provide ongoing assessment of the emotional well-being of persons recovering from brain injury.

The Level of Self-Esteem

Rosenberg (1965) distinguished between persons who think that they are "very good" and those who think that they are "good enough." High self-esteem, as reflected in the RSES scale items, expresses the feeling that one is "good enough." Individuals with high self-esteem do not consider themselves better than others, but they recognize their limitations and still accept what they see without regret. These individuals respect themselves and consider themselves worthy. Low self-esteem, according to this scale, is

characterized by self-dissatisfaction, self-contempt, and lack of self-respect. “The self picture of individuals with low self-esteem is disagreeable, and they wish it were otherwise” (Rosenberg, 1965, p.31)

A review of the literature indicated that a high level of self-esteem is assumed to be related to healthy behavior and to be associated with good adjustment, while low self-esteem is more likely to be related to a lack of self-confidence, dependence, and social withdrawal (Wells & Marwell, 1976). High self-esteem influences the tendency of individuals to emphasize their abilities over their disabilities, competencies over limitations, and feelings of worth and dignity over feelings of hopelessness and resignation (Heinemann & Shontz, 1982). Sinnema (1992) argued that self-esteem is a key to psychological well-being and social integration of young people with chronic illness or disabilities. Therefore, Sinnema recommended that interventions for these individuals should include teaching them to use their potential and promoting their possibilities for social and economic participation.

The Disabled Student Program Services

Providing interventions that would positively influence the development of self-esteem of individuals with TBI was strongly recommended (Garske & Thomas, 1992). The Disabled Students Program (DSP) in community colleges provides support services specifically designed to address the special needs of students with disabilities. Garske and Thomas (1992) claimed that if rehabilitation needs of individuals with TBI were satisfied at higher levels, self-esteem levels also tended to be higher. Therefore, addressing the needs of students with TBI may increase their self-esteem and may be critical to their successful integration into the community college (Cook et al. , 1987).

According to Bauer and Titonis (1987), some young adults with brain injury return to college and successfully complete their course of studies. However, many students with brain injury, including those with moderate and mild cognitive and psychosocial implications either fail or drop out. It is clear that these students need special services such as tutorial assistance and tape recorded lectures in order to succeed.

Services for community college students with TBI can be provided through federal and state mandated legislative regulations such as the Americans with Disabilities Act of 1990; Section 504 of the Rehabilitation Act of 1973, and Section 626 of the 1983 Amendments to the Education of the Handicapped Act of 1975. As a result of these recent civil rights laws, community colleges offer a “potpourri of services including general counseling for students with disabilities, specialized courses, programs that help individuals enter mainstream courses, or entirely specialized curriculums” (Jacobs, 1989, p. 289). According to Lange et al. (1991), in recent years, more classes are available to students with disabilities in the California community colleges. Over the past ten years, three programs have been developed through the California Community College Foundation in conjunction with the Department of Rehabilitation to serve students with disabilities. The programs are Independent Living Skills, High Technology Center, and Project Workability. Most of the California community college campuses offer at least one of these programs for students with disabilities.

Cook et al. (1987) suggested a two-year curriculum program specifically designed to help community college students with brain injury develop functional daily skills and possibly attain competitive community employment. The students in this program worked through a series of seven areas: communication, cognition, psychosocial adjustment, academic preparation, psychomotor skills, vocational training, and independent living.

Cook et al. suggested that community college students with TBI will have the opportunity to benefit from the following services: (a) individual instruction; (b) small group instruction; (c) computer- aided instruction that enables students to progress at their own pace; and (d) special classes, such as orientation to brain injury, independent living skills, study skills, communication and interpersonal skills, and specialized learning skills.

Community colleges in Santa Clara County offered a variety of services and programs for students with disabilities, such as personal counseling, support groups, social club, academic assistance, cognitive retraining, adaptive computer services, adaptive physical education, and career development. In Santa Clara County there were no services or programs specifically designed to serve the brain injured population as recommended by Cook et al. (1987). Students with TBI used the services that are offered to all the students with disabilities on each campus.

Self-Esteem and the Use of Disabled Student Program Services

Since a high level of self-esteem is related to better psychosocial adjustment (Branden, 1969), it would seem important to provide interventions that could influence the development of self-esteem. A review of the rehabilitation literature suggested that providing adequate services and interventions to individuals with disabilities increased their level of self-esteem (Links & Frydenberg, 1988; Tutty, Belanger & Gregory, 1993). Some recent studies suggested that interventions provided social support, cognitive retraining, and adaptive physical education were positively related to self-esteem.

Resnick (1986) studied factors influencing self-image among physically disabled adolescents and found that higher self-esteem was related to participation in clubs or any kind of organized group, having a regular hobby, and having a social network.

Rosenberg (1965) also found that an individuals' self-esteem was strongly related to active participation in school activities. The lower amount of participation was related to lower level of self-esteem.

Holosko and Huege (1989) reviewed the social supports and adjustments of Canadian adults with TBI. They found that social support was statistically related to the self-esteem of the study's participants with the more the total support, the greater the self-esteem. The use of a support group to raise self-esteem has evidence in current literature. Yahne and Long (1988) examined counseling intervention that used a structured support group for women clients. They found that women who participated in six group meetings incorporating skills-learning, counseling, and peer support, experienced higher level of self-esteem, compared to a wait-list control group. Pegram (1989) also found that a weekly support group for seven mothers of children with severe disabilities increased the participants' level of self-esteem.

Current studies suggested findings about effective cognitive interventions that increased the level of self-esteem of individuals with traumatic brain injury. McGuire and Greenwood (1990) investigated the effects of a six-week memory rehabilitation program on the self-esteem of 18 patients (aged 19-60) with traumatic brain injury. The rationale behind their study was that an intervention aimed at a residual cognitive deficit, memory impairment, may improve the self-esteem of the clients. They reported that the subjects' self-esteem was found to increase significantly from pre- to post-study. The results of this study also indicated that changes in self-esteem were not related to corresponding changes in memory over the course of the study. It was not clear what caused the improvement in the patients' self-esteem, and the authors assumed that the one-to-one attention during

the intervention may by itself have contributed to the improvement in self-esteem for the brain-injured patients.

In another study (Kerner & Acker, 1985), a group of 24 persons (aged 18-60) who had sustained brain injury resulting in severe to mild memory impairment were assigned to (a) a computer memory retraining group, the treatment group using memory retraining software, (b) a computer control group that used only graphics software, or (c) a no-exposure control group. Results indicated that the treatment group showed enhancement of memory skills as well as positive feelings about themselves and higher motivation for academic and vocational pursuits.

Students with TBI may suffer from physical impairments. Cook et al. (1987) suggested that improvement of physical function may directly enhance brain function. The adaptive physical education program provides activities to redevelop coordination and to increase strength and endurance. Such a psychomotor program can improve the body image of students with TBI as well as their self-esteem.

Hopper and Santomier (1985) mentioned the importance of sports for persons with physical disabilities. They found high self-esteem among spinal paralyzed and amputee wheelchair athletes as compared with other groups of people with physical disabilities. According to Hopper and Santomier, involvement in sports created situations for the development of positive self-esteem.

DSP social support services and instructional support classes such as counseling, support group, cognitive retraining, and adaptive physical education are supposed to address the social, psychological, cognitive, and physical needs of the students with TBI. Consequently, it might be possible that students with multiple disabilities as a result of

TBI, who used an array of services and DSP classes frequently, would indicate a high level of self-esteem.

Summary

A review of the literature and current research found that individuals who sustained TBI have difficulties in psychological, physical, and social areas. TBI mostly occurs among young people in their transition to adulthood. This population tends to experience low self-esteem as much as other people with disabilities. The number of individuals with TBI who enter community colleges has increased, and the colleges have developed varied services and special classes on behalf of this population. There is evidence in the literature that providing adequate interventions has the potential to improve the self-esteem of individuals with disabilities. Based on the literature review, the current study attempted to determine if there is a significant difference in the level of self-esteem of students who used the DSP services very often and those who did not. The next chapter will introduce the methodology used to conduct this study.

CHAPTER 3

METHODOLOGY

A significant number of students with Traumatic Brain Injury (TBI) are entering the community colleges as part of their rehabilitation process. TBI often results in physical, cognitive, social, and vocational consequences. Psychological problems such as depression, anxiety, lack of motivation, and low self-esteem may result from the inability to cope with the disabilities following TBI. Current studies that focused on the self-esteem of community college students with TBI, have not been found. The primary purpose of this study was to explore the level of self-reported self-esteem of community college students with TBI and what Disabled Student Program (DSP) services they use. A secondary purpose was to determine if there is a significant difference in the level of self-esteem of students with TBI who reported different level of use of DSP services and classes.

Description of the Methodology

In order to address the questions proposed in this study, the author identified a sample of four community colleges in Santa Clara County. The subjects were students with TBI from the selected colleges. The author administered to the students the Rosenberg Self-Esteem Scale (Rosenberg, 1965) and a questionnaire designed by the author containing questions about the students' demographics and their use of DSP services and classes. The data collected from the above instruments were statistically analyzed and conclusions were drawn based on the data.

Population and Sample

The subjects were 33 students with TBI from four community colleges in Santa Clara County who were willing to participate in the study. Some of the subjects were working toward academic or vocational curriculum goals offered by the college, while others were taking some DSP classes (like adaptive physical education, cognitive retraining, or working in an adaptive computer laboratory) to promote their rehabilitation process. All the participants suffered from moderate to severe physical, cognitive, and emotional disabilities as a result of the brain injury. All of them were known to the DSP services on each campus, but the level of their use of the DSP services and classes was varied.

The main criteria to select the subjects were (a) whether the person's brain injury was a result of a trauma rather than organic in nature (e.g., strokes, brain tumor, meningitis, etc.); (b) whether the person was currently a community college student; and (c) whether the person agreed to participate in the study. Subjects could identify themselves after they received a cover letter from the author through the DSP staff. Persons who did not meet the above criteria were excluded from the study.

The author had no access to a list of students' names or addresses because of a combination of confidentiality and DSP staff time constraints. Therefore, a simple random sample of college students with TBI was difficult to access. An accidental sample, in which the author chose students who were easily accessible and who were particularly willing to participate, became the most feasible choice for this study.

Instrumentation

Self-Esteem Scale

The Rosenberg Self-Esteem Scale (RSES), a self-report instrument, was used to measure the self-esteem level of the students. The RSES is a 10-item inventory, with 4-point Guttman scales, ranging from strongly agree (4) to strongly disagree (1). This scale is a widely used measure and according to the literature it is considered to be an acceptable instrument (Hagborg, 1993). Rosenberg (1965) reported a reliability coefficient of .92 and a scalability value of .72 for the scale.

The Questionnaire

Each subject, in addition to completing the RSES, completed a multiple choice questionnaire that was developed by the author. The purposes of the questionnaire were to obtain descriptive information about the subjects, to determine their level of use of DSP services and classes, and to examine other variables that may influence the results of the study. The questionnaire included three sections as follows:

1. Fixed-choice response items about the subjects' socio-demographics.
2. Questions that asked about the severity of the disability and type of limitations.

The questions in this section were selected by the author from the Subjective Complaint Scale for Minor Head Injury questionnaire used in the TBI project at Santa Clara Valley Medical Center.

3. A 12-item questionnaire to determine the level of use of DSP services and classes. The questionnaire provided a list of support services and DSP classes. Subjects were asked whether they used the services during the last year, and how often. The author developed the list of the services and classes by using (a) information from counselors who worked in the community college, and (b) literature recommendations

about necessary services for successful integration of students with brain injury (Cook et al., 1987).

The questionnaire was reviewed by expert in the field of rehabilitation of adults with TBI from the community and the counselors from the DSP services at the selected community colleges. They provided the author with useful suggestions to accommodate the questions to the special needs of the students with TBI. Some vocabulary was changed to make the questions clear to the target population. The questionnaire was piloted with three adults with TBI in order to estimate how long it would take to a person with TBI to complete the questionnaire.

Data Collection

In order to collect the data, the author used the following procedures:

1. The author identified all of the six community colleges in Santa Clara County. During September 1994, letters were mailed to the coordinators of the Disabled Student Program at the colleges to ask their willingness to participate in the study. Four community colleges out of six responded positively.
2. A Human Subject Protocol was submitted to San Jose State University for approval (see Appendix A).
3. The author conducted comprehensive interviews with each community college DSP staff in order to discuss appropriate procedures to reach students for the purpose of the study without violating confidentiality.
4. The RSES and the questionnaire were reviewed by the DSP staff in each college. The questionnaire developed by the author was accommodated to the special needs of students with TBI with the assistance of an expert from the field and the DSP staff.

5. The subjects were reached by several means. The DSP staff gave the author access to a few classes that served students with brain injury. During the last weeks of the fall 1994 semester, the author presented an overview of the study in two cognitive retraining classes and students could identify themselves if they were willing to participate. In addition, the author delivered 150 cover letters to all the other students with TBI. The letter informed the students about the purpose of the study and asked for their permission to complete the RSES inventory and the questionnaire. The letters were either mailed to the students through the DSP office with self-stamped envelopes or given to them by the DSP staff, in person, during a regular meeting. The letters were returned to the author with the students' phone number or other alternative ways in which the student could be reached.

6. From November 1994 to January 1995, the author contacted the subjects who returned the cover letter. The author set appointments with the students who met the main criteria to be included in the study in order to administer them the RSES inventory and the questionnaire (see Appendix B).

7. The author administered the RSES inventory and the questionnaire to the students during a personal face to face interview. A few students were administered the questionnaire in a small group of 2-4 students. Each student was asked to read and sign the Consent Form (see Appendix C) prior to completing the questionnaire. The author read the form to the students who were unable to read. The form informed the students fully about their rights and it indicated their agreement to participate in the study.

8. The interviews were held in the DSP offices on the community colleges campuses and during the winter break at a place convenient to the participants. In order to ensure that students understood the questions, and therefore would be able to respond

accurately, individual assistance in reading, writing, or clarifying was given to students who needed or requested help. Attempts were made to assure uniformity in the administration of the questionnaire, but since every student had unique limitations, varied levels of assistance were provided by the author to each individual student.

9. After the study results were analyzed and conclusions were drawn, the author met with the DSP staff in the four community colleges to thank them for their cooperation in permitting the research to be conducted at their campuses and to share the results of the study and its conclusions.

Data Analysis

The data that was collected from the RSES and the questionnaire were statistically analyzed according to the research questions. The procedures for analysis of the data included the following steps:

1. The demographic data was organized by using descriptive statistics such as percentage, mean, and standard deviation. The frequency distributions of gender, family status, ethnic group, cause of injury, length of coma, and type of limitations were presented in percentage form. The age of the subjects, the time since injury, and the age at acquiring the injury were described by calculating the mean and the standard deviation.

2. In order to determine the level of self-esteem, the Rosenberg Self-Esteem Scale was scored for each participant. The sample mean, standard deviation, and frequency distribution were presented.

3. In order to examine the research question of what kind of DSP classes and support services students use and how often, frequency distributions of the use of each DSP service and class were presented. Graphic presentations and tables were used to describe the percentage distributions and the level of use.

4. In order to determine whether or not there is a significant difference in the level of self-esteem of students with different level of use of social support services and DSP classes, the author used the chi-square (χ^2) test which is considered to be the best known statistical significance testing procedure (Miller, 1991). Contingency tables illustrated if there is such a difference.

Summary

The methodology described in this chapter provided the basis for this research to examine the students' level of self-esteem, the level of use of DSP services and classes, and whether there is significant difference in the level of self-esteem of students who indicated different level of use of DSP services. The author described the relevant characteristics of the population and how the sample was identified. The instruments used were described, as well as the relevance of them to the research. The procedures followed in the study to collect and analyze the data were described in detail. The next chapter will present the results of the study.

CHAPTER 4

REPORT OF FINDINGS

The purpose of the current study was to investigate the level of self-esteem of community college students with Traumatic Brain Injury (TBI) and their participation in classes and services offered by the community college Disabled Student Program (DSP).

The major research questions that guided this investigation were:

1. What is the level of self-reported self-esteem of community college students with traumatic brain injury?
2. What kind of DSP services and classes do college students with traumatic brain injury use and how often?
3. Is there a significant difference in the level of self-esteem of community college students with TBI who reported different level of use of the DSP social support services?
4. Is there a significant difference in the level of self-esteem of community college students with TBI who reported different level of use of the DSP instructional support classes?

Descriptive statistics about the subjects' socio-demographics and their impairments will be presented. The author also reports the data collected and the statistics used to address the major research questions.

Socio-Demographic Data

In order to conduct the study, the author distributed 150 cover letters, which inquired about willingness to participate in the study, to students with acquired brain injury from four community colleges in Santa Clara County. Fifty-six students returned the letters. Of the 56 students, only 33 students met the criterion of having a brain injury as a result of a trauma rather than organic in nature.

Participants included 23 males and 10 females. The average age at the time of collecting data (with standard deviations in parentheses) was 38.6 years (SD = 11.5), with a range of 19 to 66 years. The average age at the time of injury was 29 years (SD = 10.5), with a range of 12 to 57 years. The average time since injury was 9.67 years (SD = 6.41), with a range of 1 to 26 years. Eighteen students described their marital status as single, six as married, eight as divorced, and one student reported that she currently lives with a partner. Of the 33 students, 22 students identified themselves as Caucasian Americans, five students identified themselves as Hispanic Americans, three as Native Americans, two as Asian Americans, and one student identified himself as an African American.

The majority of the students who participated in this study sustained TBI as a result of traffic accidents with fewer who sustained it as a result of falls, violence, and sporting accidents. The pie chart in Figure 1 displays the high percentage of students who reported traumatic brain injury as a result of traffic accidents.

Figure 1: Cause of Injury

Length of Coma

Of the 33 students with TBI who participated in this study, 30 students reported that a coma or an alteration of consciousness resulted from their TBI. Three students were unable to remember this kind of experience. Table 1 illustrates the frequency distribution of the subjects' length of coma. As shown in Table 1, the majority of the students reported that they were in coma for more than 24 hours which indicated severe TBI.

Table 1

Length of Coma by Number of Participants

Length of coma	<u>n</u> (%)
Less than one hour	1 (3)
1-24 hours	1 (3)
1-7 days	4 (12)
1-4 weeks	14 (42)
One month or more	10 (30)
Do not remember	3 (10)

Type of Impairments

Concrete questions that were accommodated especially for individuals with TBI were used to determine the kind of impairments the students have experienced since their injury (See Appendix B, part 2, item 8). Positive answers to the questions indicated physical, cognitive-intellectual, emotional, and social impairments. All the subjects

reported that since their brain injury they have experienced some physical, cognitive-intellectual, emotional, and social impairments.

Table 2 shows the frequency of specific cognitive-intellectual impairments. As illustrated in Table 2, a high percentage of the subjects reported that since their injury they had experienced cognitive-intellectual impairments such as decreased information processing ability, memory deficits, and communication disorders.

Table 2

Frequency of Cognitive-Intellectual Impairments Reported by Participants

Impairment	no. (%)
Decreased information processing ability	30 (90)
Memory deficits	27 (81)
Difficulty in learning new information	22 (66)
Communication disorders	20 (60)
Reading and writing difficulties	17 (51)
Spelling difficulties	9 (27)

Note. A communication disorder was indicated by a positive answer to the question:

“Do you have words on the tip of your tongue and just cannot get them out?”

Table 3 shows the type and frequency distribution of physical impairments.

Table 3 illustrates that a significant number of the subjects indicated that they experienced walking difficulties, coordination problems, muscle weaknesses, and vision impairment as a result of their injury.

Table 3

Frequency of Physical Impairments Reported by Participants

Impairment	<u>no.</u> (%)
Walking difficulties	24 (72)
Coordination problems	23 (69)
Muscle weaknesses	21 (63)
Vision impairments	17 (51)
Headache, fatigue, dizziness	15 (45)
Use of a wheelchair or a cane	11 (33)
Hearing impairments	3 (9)

The frequency of specific emotional and social disturbances is illustrated in Table 4. As shown, many of the subjects indicated that they have experienced emotional and social impairments as a result of their injury.

Table 4

Frequency of Emotional-Social Impairments Reported by Participants

Impairment	no. (%)
Emotional consequences (like feelings of upset, frustration, depression, and anxiety)	22 (66)
Less socially involvement	19 (57)
Lose temper easily	18 (54)
Difficulties in keeping the house maintained	16 (48)
Relationship problems	13 (39)

Note. Relationship problems were indicated by positive answers to at least one of the questions (a) “does family, friends, co-workers say you are more irritable?” and (b) “are you having new problems getting along with your spouse, family, friends, or co-workers?”

Question # 1

What is the level of self-reported self-esteem of community college students with traumatic brain injury?

In order to determine the level of self-reported self-esteem of the college students with TBI, the Rosenberg Self-Esteem Scale (RSES) was used. The scale is a 10-item Guttman scale with items answered on a 4-point scale from strongly agree to strongly disagree. The scoring of the items resulted in a 6-point scale ranging from 0-6, with the higher the score the lower the level of self-esteem. A high level of self-esteem refers to those who scored 0-1; a medium level of self-esteem refers to those who scored 2; and a low level of self-esteem refers to those who scored 3-6.

The entire sample mean score of the RSES (with standard deviation in parentheses) was 2.03 (SD = 1.72). This result indicated a medium level of self-esteem. Of the 33 subjects, 23 subjects indicated high and medium level of self-esteem and only 10 subjects indicated a low level of self-esteem. Of the 10 women participated in this study, six women indicated a low level of self-esteem. Table 5 displays the number of participants who indicated high, medium, or low level of self-esteem as scored by the RSES.

Table 5
Frequency Distribution of Self-Esteem

Level of self-esteem	<u>High</u>		<u>Medium</u>		<u>Low</u>		
Score	0	1	2	3	4	5	6
Entire sample (n = 33)	6	10	7	2	4	3	1
Men (n = 23)	3	9	7	1	2	1	--
Women (n = 10)	3	1	--	1	2	2	1

Question # 2

What kind of Disabled Student Program (DSP) services and classes do college students with TBI use and how often?

A list of 12 different services and classes offered by the DSP in the community colleges was provided to the subjects. They mentioned whether during the last year they used them or not and how often. All of those services and classes were used by the subjects. Since some of the services can be provided off campus, subjects had to mention whether the service was provided off campus or on campus.

Figure 2 illustrates the percentage of subjects who used DSP social support services. As shown in Figure 2, about half of the sample indicated that they used counseling services, while only few subjects indicated that they participated in social clubs and independent living programs.

Figure 2: Percentage distribution of 33 subjects used DSP support services such as: counseling (n = 17), support group (n = 14), academic assistance (n = 13), career planning program (n = 10), social club (n = 8), and independent living skills program (n = 4).

Figure 3 illustrates the frequency of use of DSP instructional support classes. As shown in Figure 3, a high percentage of the subjects participated in adaptive physical education classes and in an adaptive computer laboratory.

Figure 3: Percentage distribution of 33 subjects used DSP classes such as: adaptive physical education (n = 20), adaptive computer laboratory (n = 18), auditory processing (n = 13), academic skills class (n = 9), speech communication class (n = 8), and memory class (n = 7).

The level of use of the DSP classes and social support services is illustrated in Table 6. Table 6 displays the number of students who indicated low, medium, and high level of use of DSP services and classes. A high level of use of DSP services and classes refers to those used the services or the classes twice a month or more; a medium level of use refers to those who used them monthly; and a low level of use refers to those who used DSP services and classes less than once a month or did not use them at all. As shown in Table 6, many of the subjects in this sample indicated a low level of use of the DSP social support services and instructional support classes.

Table 6

Number of Subjects Indicating Low, Medium, and High Level of
Use of DSP Services and Classes

	<u>Low</u>		<u>Medium</u>		<u>High</u>
Level of use	0	1	2	3	4
Social support services					
Support group	19	1	1	1	11
Counseling	16	5	0	3	9
Social club	25	0	1	2	5
Academic assistance	20	3	1	1	8
Career planing program	23	2	3	2	3
Independent living program	29	0	0	1	3
Instructional support classes					
Memory class	26	0	0	0	7
Auditory processing	20	0	0	1	12
Speech-communication	25	0	0	0	8
Adaptive computer laboratory	15	1	0	1	16
Adaptive physical education	13	0	0	0	20
Academic skill class	22	0	1	0	8

Note. 0 = no use, 1 = use less than a month, 2 = use monthly, 3 = use twice a month, 4 = use weekly.

In general, a high number of students in the present sample did not use the support services and the DSP classes. However, a significant number of the students reported that during the last year they participated more then twice a month in the

following classes and services: adaptive physical education class, adaptive computer laboratory, support group, and counseling. Only few students reported that they participated in memory class, auditory processing class, career development program, and independent living program. From the students who used services like counseling, support group, social club, and independent living program, there are students who used these services off campus, in other community services rather than the college DSP services.

Question # 3

Is there a significant difference in the level of self-esteem of community college students with TBI who reported different level of use of the DSP social support services?

The difference in the level of self-esteem between students who indicated high, medium or low level of use of social support services was examined. Social support services include counseling, support group, social club, career development and independent living programs. The investigator scored 5-items statements from the questionnaire that asked about using these services. Each item was rated on a 5-point scale ranging from 0 to 4 (0-1 means low level of use; 2 - medium; and 3-4 means high level of use). In order to determine level of use of the social support services, the investigator calculated the average of the ratings given by the subject for the 5-items. The average ranged from 0 to 4. A high level of use refers to those who scored an average of 2.67-4.00; a medium level of use refers to those who scored 1.33-2.66; and a low level of use refers to those who scored 0-1.32.

A statistical significance testing procedure, the chi-square (χ^2) test, was used in order to determine if there is a significant difference in the level of self-esteem between students who indicated high, medium, or low level of use of social support services.

The chi-square (χ^2) test showed no significant difference:

$$\chi^2 (4, N = 33) = 5.406, p > .05, p = .25$$

Table 7 shows how many students with high, moderate, and low level of self-esteem, reported high, medium, or low level of use of the social support services.

Table 7

Self-Esteem of Students with Different Level of Use of Social Support Services

Self-Esteem	Level of Use		
	High	Medium	Low
High	2	6	8
Medium	1	3	3
Low	--	1	9

As shown in Table 7, the majority of the sample reported low level of use of the social support services with only few students indicating a high level of use. There was no difference in the level of self-esteem among students who reported a low level of use of the social support services. Of the 13 students who indicated high and medium level of use of the social support services, there was only one student with a low level of self-esteem while the other 12 students indicated either high or medium level of self-esteem.

Question # 4

Is there a significant difference in the level of self-esteem of community college students with TBI who reported different level of use of the DSP instructional support classes?

The level of use of DSP classes was determined by using the same procedures that were used to determine the level of use of social support services. The investigator scored and calculated the average of 6-items statements from the questionnaire that asked about use of the following classes: memory, auditory processing, speech-communication, adaptive computer laboratory, adaptive physical education, and academic assistance class.

The chi square (χ^2) test was used to determine if there is a significant difference in the level of self-esteem of students who indicated low, medium, and high level of use of DSP classes. The results showed no significant difference:

$$\chi^2 (4, N = 33) = 5.337, p > .05, p = .254.$$

Table 8 shows the number of students with high, medium, and low level of self-esteem, who indicated high, medium, and low level of use of DSP classes.

Table 8

Self-Esteem of Students with Different Level of Use of DSP Instructional Support Classes

Self-esteem	Level of use		
	High	Medium	Low
High	4	1	11
Medium	3	--	4
Low	3	3	4

As shown in Table 8, there was no significant difference in the level of self-esteem between students with high, medium, and low level of use of the DSP classes.

Summary

The results of the study indicated that the majority of the students in the sample suffered from severe brain injury with multiple disabilities. A significant number of the college students with TBI who participated in the study indicated high and medium level of self-esteem, as measured by the self-report Rosenberg Self-Esteem Scale. The level of use of DSP classes and support services was low since a high number of students did not use many of the services and classes very often. No significant difference was found in the level of self-esteem between students who indicated high, medium, and low level of use

of DSP support services and classes. The next chapter will present interpretations of these findings, recommendations, and implications for further research.

CHAPTER 5

DISCUSSION

The focus of this study, based on a sample of 33 community college students with Traumatic Brain Injury (TBI), was to investigate these students' level of self-esteem. The study explored (a) what college services the students used and how often, and (b) whether there is a difference in the level of self-esteem of students who indicated different level of use of these services.

A detailed profile of the sample showed that the participants were generally single, caucasian men, in their mid 30's. They sustained severe TBI, several years ago, mostly as a result of a traffic accidents. The participants' lives were significantly changed due to brain injuries which left them with severe physical, cognitive, and emotional disabilities. As an example, one person who participated in this study was 25 years old when he survived a motorcycle accident. Up until that time he had been a healthy young man, married, and working full time. This person was in coma for four weeks and had a long period of recovery. Several months after his injury, his wife had divorced him, and he had to move into his parent's home. Currently, eight years after his injury, he reported that he had never returned to work since his injury, he had become extremely frustrated and depressed, and he failed to establish relationships with friends.

The study was based on a small sample, since a sample of community college students with TBI was difficult to access. However, some socio-demographic characteristics of this sample (such as male/female ratio, marital status, age, age at time of injury, and reported cause of injury) and some methodological concerns (such as sample size and sampling methods) were similar to other samples studied and noted in the

literature review (Garske & Thomas, 1992; Holosko & Huege, 1989; Tyerman & Humphrey, 1984).

Discussion of the Findings

Self-Esteem

The majority of the sample (70%) indicated high or medium level of self-esteem, as measured by a self-report instrument, the Rosenberg Self-Esteem Scale. This result was different from earlier findings indicating low self-esteem among individuals with TBI by using similar self-report scales (Huege & Sabine, 1989; Johnson & Newton, 1987; Tyerman & Humphrey, 1984).

One explanation of this outcome could be that college students with TBI who participated in this study would not necessarily be similar to the entire population of persons with TBI. Moreover, the sample was composed on a voluntary basis rather than random selection; thus, students with very low self-esteem may not have volunteered.

As Jacobs (1989) suggested, a school- versus day-treatment setting can help to improve the self-esteem of persons with TBI. Therefore, it is possible that attending community college by itself can be an explanation of a relatively high level of self-esteem. Future study that compares the self-esteem of college students with TBI to the self-esteem of non-college students with TBI is recommended.

Another explanation that could be taken into account is that measurement of self-esteem by a self-report inventory is not always accurate. High esteem is a socially desirable trait; therefore, self-report instruments may fail to provide the true esteem of the person. Some people actually feel unworthy but they cannot admit such threatening information (Wells & Marwell, 1976). In addition, it is known that there are fluctuations in the persons' level of self-esteem (Brewin, 1988). Self-esteem of any individual is

expected to vary with his or her circumstances. Therefore, it is difficult to determine whether the current level of the persons' self-esteem is a true esteem, or a temporary response to circumstances.

The result of the study revealed that women scored lower than men on the self-esteem scale. The relationship between gender and self-esteem was not examined in this study but this finding should be given attention in future studies. Lower self-esteem among females compared with males is consistent with other studies explored in the literature review (Hagborg, 1993; Magill & Hurlbut; Yahne & Long, 1988). Thus, it is important to note that women with TBI might need particular intervention to improve their feelings about themselves.

The Use of Disabled Student Program (DSP) Services

In general, the level of use of DSP services and classes was low. There was a discrepancy between the severity of TBI of the majority of this sample and their low level of use of services and classes. These services and classes were specifically developed to address the needs of students with severe disabilities and many students who indicated physical, cognitive, and emotional limitations did not use them frequently. There were many students who indicated that since their injury they have experienced memory deficits and difficulties in processing new information. Many of the subjects reported that since their injury they were less involved in social activities, but only a few of them used the cognitive retraining classes or the social support services.

Some possible factors that were not evaluated in this study, but could be taken into account, might influence this result. The time since injury may affect the level of use of services and classes. The mean time since injury was approximately 10 years, with a range of 1 to 26 years, which is a relatively long period of time. It is possible that the

longer the time since injury, the fewer services the person needs. Individuals who acquired their disability several years ago may learn how to compensate their deficits during the time, or they may have used the services earlier and did not profit by them any more.

The sample was composed of students from four different community colleges. Although all of the colleges offered similar services and classes to students with disabilities, not all of them offered all 12 services and classes that were listed in the questionnaire. Therefore, some students did not use services or classes only because they were not available in the community college they attended.

Self-Esteem and Use of DSP Services and Classes

Of the 10 students with low self-esteem, nine reported that they have not participated in social support services during the last year. This result does not necessarily indicate that a low level of use of social support services related to low self-esteem, but it could be taken into account for further research. Students who indicated high or medium level of self-esteem did not necessarily report a high level of use of these services and classes. Therefore, there is no statistically reliable difference in the level of self-esteem between students who indicated different level of use of the DSP services and classes.

There are some possible explanations why the results of this study did not reveal a statistically reliable difference.

1. The 33 students with TBI who participated in this study represent a very heterogeneous group. There was a diversity in this group regarding time since injury, age, type of limitations, and onset of disability. These factors might also explain a possible difference in the level of self-esteem among students with TBI. Moreover, there

was a diversity in this group regarding the needs for services and classes that would not be taken into account.

2. Many other variables can be related to individuals' level of self-esteem such as gender, family status, ethnic group, family support, and many more. The current study did not investigate their relationship to the level of self-esteem of the participants. The self-esteem of the participants before they acquired their disabilities was not known and it might also have a significant influence on the findings of the study.

3. The level of use of services can also be related to other variables that were not investigated in this study like academic achievement, psychosocial adjustment, coping mechanism, and others.

4. The purpose of the study was to investigate the use of an array of services. Looking at global use may have suppressed the effect of each different class or services. However, the data analysis did not show that the use of any specific class or specific service differentiated between students who indicated different level of self-esteem.

Implications for Further Research

From the strengths and weaknesses of this study some important implications for further research can be drawn:

1. The strategy of this study represents the point of view of the students with TBI, rather than the perceptions of relatives or professional rehabilitation staff. According to the findings of this study, it would seem that severely disabled persons were able to provide valuable information regarding the nature of their disabilities, self-esteem, and what kind of college services and classes they used. Therefore, continuation of the use of this strategy and learning about individuals with TBI from their own point of view is recommended.

2. The data collection was done by using individual face to face interviews.

Although it was time consuming, it was the best way to collect the data from subjects with special and varied needs. Subjects were very cooperative and highly motivated to complete the questionnaires accurately.

3. While measuring the person's self-esteem, it is recommended that self-report instruments and observational methods or projective techniques are used in order to get more accurate picture of the person's self-esteem.

4. In order to determine more accurately whether there is a difference in the level of self-esteem of students who reported different level of use of services, it is recommended that controlled experimental designs are used. Careful selection of subjects in order to control other variables that may influence the results, and measuring the self-esteem before and after the subjects are exposed to intervention, is strongly recommended for further research.

Recommendation for Practice

From the results of this investigation some recommendations can be suggested for rehabilitation professionals:

1. During the face to face interviews, many participants indicated that some of the DSP classes and services were very beneficial and essential to their rehabilitation. As an example, one student reported that as a result of his intensive use of the adaptive physical education class provided by the Disabled Student Program, he gradually reduced his need for the aid of a wheel chair. This person reported that his mobility improvement increased his level of self-esteem and decreased his depression and frustration. Another person reported that he used to work as an engineer but as a result of his injury he was fired. The adaptive computer laboratory and some other cognitive retraining classes helped him cope

with his severe cognitive impairments. These examples illustrated the importance of providing an array of services on behalf of the students with TBI.

2. Many participants reported that since their injury, they have been less involved in social activities. Participants who reported that they have not participated in social support services during the last year indicated low level of self-esteem. Therefore, it is strongly recommended that more support groups and social activities for this population be established.

3. The exploration of the level of use of Disabled Student Program (DSP) services and classes was very important. This exploration could provide vital information for rehabilitation professionals and the DSP staff in each community college. Rehabilitation professionals should teach their clients how to use the services offered by the community college more appropriately.

4. Some students expressed their need for cognitive retraining classes that were not available in their campus. Cooperation between different community colleges within Santa Clara County is strongly recommended. DSP counselors should encourage students with TBI to use DSP services or classes in other community college if they could benefit from them, especially when budget constraints prevent the provision of all of the services in one college.

Summary

In spite of some methodological limitations of the current study, the results indicated the need for further research in the area of self-esteem and social adjustment of persons with TBI. The current study provided useful descriptive information about

college students with TBI. There has been little work done specific to this population and it is this gap which the present study attempted to fill.

In sum, the current study investigated students with TBI who integrated into a community college as part of their full integration into the society. These students indicated a relatively high level of self-esteem compared to some other samples of persons with TBI with similar socio-demographics. Jacobs (1989) suggested that a school- versus a day-treatment setting can help to improve the self-esteem of adults with TBI and to increase their opportunities for socialization. Therefore, the community college, as a community resource, has a potential to enhance the rehabilitation process of individuals with TBI. The community college can be used as a day activity placement, especially for individuals with severe TBI who are not ready to return to work. They can learn new skills, participate in a variety of tasks appropriate to their ability, and increase their opportunities for social involvement that may not exist for them otherwise.

REFERENCES

- Americans with disabilities act handbook. (1991). Washington, DC: U.S. Government Printing Office.
- Arnold, P., & Chapman, M. (1992). Self-esteem, aspirations, and expectations of adolescents with physical disability. Developmental Medicine and Child Neurology, 34, 97-102.
- Bauer, W. R., & Titonis, J. (1987). Management and advocacy. In M. Ylvisaker, & E. M. R. Gobble, (Eds.), Community re-entry for head injured adults. (pp. 403-419). Boston, MA: A College Hill Publication.
- Bender, L. F. (1981). Changing attitudes toward disabled people. Developmental Medicine and Child Neurology, 23, 103-108.
- Ben-Yishay, Y., & Diller, L. (1981). Rehabilitation of cognitive and perceptual defects in people with traumatic brain damage. International Journal of Rehabilitation Research, 4 (2), 208-210.
- Ben -Yishay, Y., Silver, S. M., Piasetsky, E., & Rattok, J. (1987). Relationship between employability and vocational outcome after intensive holistic cognitive rehabilitation. The Journal of Head Trauma Rehabilitation, 2, 35-48.
- Bergland, M. M. & Thomas, K. R. (1991). Psychosocial issues following severe head injury in adolescence: Individual and family perceptions. Rehabilitation Counseling Bulletin, 35 (1), 5-21.
- Berrol, S., Rappaport, M., Cope, D. N., & Cervelli, L. (1982). Head injury rehabilitation project: A final report. Washington, DC: The National Institute for Handicapped Research.
- Branden, N. (1969). The psychology of self-esteem. Los Angeles, CA: Nash.
- Brewin, C. R. (1988). Foundations of clinical psychology. London: Lawrence Erlbaum.
- Brolin, D. N., & Gysbers, N. C. (1989). Career education for students with disabilities. Journal of Counseling & Development, 68, 155-159.
- Burden, P. R., Parish, T. S. (1983). Exceptional and normal children's descriptions of themselves. Education, 104, 204-205.

Carlson, C. E. (1982). Psychosocial aspects of neuralgic disability. Nursing Clinics of North America, 15 (2), 309-320.

Chiu, L. H. (1988). Testing the test: Measures of self-esteem for school-age children. Journal of Counseling and Development, 66, 298-301.

Cook, J., Berrol, S., Harrington, D. H., Kanter, M., Knight, N., Miller, C. & Silverman, L. (1987). The ABI handbook serving students with acquired brain injury in higher education. Glendale, CA: Glendale Community College/ The Consortium for the Study of Programs for the Brain Injured in California Community Colleges.

Coopersmith, S. (1967). The antecedents of self-esteem. San Francisco: W. H. Freeman & Co.

Crandall, R. (1973). The measurement of self-esteem and related concepts. In J. P. Robinson & P. R. Shaver (Eds.), Measures of social psychological attitudes (rev. Ed), (pp. 45-167). Ann Arbor, MI: University of Michigan Press.

Diller, L. (1990). Foreword. In S. Katz & V. Florian (Eds.), Returning the individual with traumatic brain injury to the community: An overview of programs and services in Israel (pp.ix). Durham, NH: The International Exchange of Experts and Information in Rehabilitation.

Eagly, A. H. (1967). Involvement as determinant of response to favorable and unfavorable information. Journal of Personality and Social psychology, 7 (3), 1-15.

Fact on file dictionary of education. (1988). New York: Facts on File.

Falvo, D. R. (1991). Medical and psychosocial aspects of chronic illness and disability. Gaithersburg, Maryland: Aspen Publishers, Inc.

Festinger, L. (1954). A theory of social comparison processes. Human Relations, 7, 117-140.

Fitts, W. (1965). Manual: Tennessee self-concept scale. Nashville, Tenn.: Counselor Recordings and Tests.

Garske, G. G., & Thomas, K. R. (1992). Self reported self-esteem and depression: Indexes of psychosocial adjustment following severe traumatic brain injury. Rehabilitation Counseling Bulletin, 36 (1), 44-52.

Greif, E. & Matarazzo, R. G. (1982). Behavioral approaches to rehabilitation New York: Springer.

Hagborg, W. J. (1993). The Rosenberg self-esteem scale and Harter's self-perception profile for adolescents: A concurrent validity study. Psychology in the Schools, 30, 132-136.

Harvey, D. H. P., & Greenway, A. P. (1984). The self-concept of physically handicapped children and their non-handicapped siblings: An empirical investigation. Journal of Child Psychology and Psychiatry, 25, 273-284.

Heinemann, A. W., & Shontz, F. C. (1982). Acceptance of disability, self-esteem, sex role identify and reading aptitude in deaf adolescents. Rehabilitation Counseling Bulletin, 24, 197-203.

Henker, F. O. (1979). Body-image conflict following trauma and surgery. Psychosomatics, 20, 812-820.

Holosko, M. H. & Huege, S. (1989). Perceived social adjustment and social support among a sample of head injured adults. Canadian Journal of Rehabilitation, 2 (3), 145-154.

Hopper, C. & Santomier, J. (1985). Self-esteem and aspirations of wheelchair athletes. Humboldt Journal of Social Relations, 12 (1), 24-35.

Jacobs, H. E. (1989). Adult community integration. In P. B. Rita (Ed.), Comprehensive neurologic rehabilitation - Volume 2 - Traumatic brain injury (pp. 287 - 315). New York: Demos Publications.

Johnson, D. A., & Newton, A. (1987). Social adjustment and interaction after severe head injury: II. Rationale and bases for intervention. British Journal of Clinical Psychology, 26, 289-298.

Kaplan, S. P., (1991). Psychosocial adjustment three years after traumatic brain injury. The Clinical Neuropsychologist, 5 (4), 360-369.

Kerner, M. J. & Acker, M. (1985). Computer delivery of memory retraining with head injured patients. Cognitive Rehabilitation, 3 (6), 26-31.

Lange, M., Lange, S., & Tunstall, C. (1991). Needs of students with acquired brain injury in the community college. Cognitive Rehabilitation, 9 (1), 22-24.

Lezak, M. D. (1978). Living with the characterologically altered brain injured patient. Journal of Clinical Psychiatry, 39, 592-598.

Links, C., & Frydenberg, H. (1988). Microcomputer skills training program for the physically disabled in long term rehabilitation. Special issue: Promoting quality long term care for older persons. Physical and Occupational Therapy in Geriatrics, 6 (3-4), 133-140.

Livneh, H. (1982). On the origins of negative attitudes toward people with disabilities. Rehabilitation Literature, 43 (11-12), 338-347.

Lynch, R. T. (1983). Traumatic Head Injury: Implication for rehabilitation counseling. Journal of Applied Rehabilitation Counseling, 14 (3), 32-35.

Magill, J., & Hurlbut, N. (1986). The self-esteem of adolescents with cerebral palsy. The American Journal of Occupational Therapy, 40 (6), 402-406.

McGuire, B. E., & Greenwood, R. J. (1990). Effects of an intervention aimed at memory on perceived burden and self-esteem after traumatic head injury. Clinical Rehabilitation, 4 (4), 319-323.

McMahon, B. T., & Fraser, R. T. (1988). Basic issues and trends in head injury rehabilitation. In S. E. Rubin & N. M. Rubin (Eds.), Contemporary challenges to the rehabilitation counseling profession (pp. 197-215). Baltimore, MD: Paul H. Brookes.

Miller, D. C. (1991). Handbook of research design and social measurement. Newbury Park: Sage Publication.

National Head Injury Foundation, Inc. (1993). Facts about traumatic brain injury. Washington DC.

Newcombe, F. (1982). The psychological consequences of closed head injury: Assessment and rehabilitation. Injury: The British Journal of Accident Surgery, 14 (2), 111-136.

Newton, A. & Johnson, D. A. (1985). Social adjustment and interaction after severe head injury. British Journal of Clinical Psychology, 24, 225-234.

Pegram, M. H. (1989). A logotherapeutic support group for mothers of special children. International Forum for Logotherapy, 12 (1), 23-27.

Piers, E. (1969). Manual for the Piers-Harris Children's Self Concept Scale. Nashville, Tenn.: Counselor Recordings and Tests.

Pope, A. W., McHale, S. M., & Craighead, W. E. (1988). Self-esteem enhancement with children and adolescents. Oxford: Pergamon.

Prigatano, G. P. (1989). Bring it up in milieu: Toward effective traumatic brain injury rehabilitation interventions. Rehabilitation Psychology, 34, 135-144.

Resnick, M. D. (1986). Sociological and social psychological factors influencing self-image among physically disabled adolescents. International Symposium on Adolescent Physical Disability (1985, Jerusalem, Israel). International Journal of Adolescent Medicine and Health, 2 (3), 211-221.

Rosenberg, M. (1965). Society and adolescents self-image. Princeton, NJ: Princeton University Press.

Roessler, R. & Bolton, B. (1978). Psychological adjustment to disability. Baltimore: University Park Press.

Saracoglu, B., Minden, H., & Wilchesky, M. (1989). The adjustment of students with learning disabilities to university and its relationship to self-esteem and self-efficacy. Journal of Learning Disabilities, 22 (9), 590-592.

Shontz, F. C. (1975). The psychological aspects of physical illness and disability. New York: Macmillan.

Simmons, R. G. (1987). Self-esteem in adolescence. In T. Honess & K. Yardley (Eds.), Self and identity (pp. 172-192). New York: Routledge and Kegan Paul.

Sinnema, G. (1992). Youth with chronic illness and disability on their way to social and economic participation: A health-care perspective. Journal of Adolescent Health, 13(5), 369-371.

Torkelson, R. M., Jellinek, H. M., Malec, J. F., & Harvey, R. F. (1983). Traumatic brain injury: Psychological and medical factors related to rehabilitation outcome. Rehabilitation Psychology, 28, 169-176.

Trethowan, W. H. (1970). Rehabilitation of the brain injured. The psychiatric angle. Proceedings of the Royal Society of Medicine, 63, 32-36.

Tutty, L. M., Belanger, J. M., & Gregory, B. (1993). An evaluation of redirection through education: A psychosocial rehabilitation program for young adults with psychiatric disability. Psychosocial Rehabilitation Journal, 16 (3), 9-25.

Twelfth Institute on Rehabilitation Issues (1985). Rehabilitation of the traumatic brain injured. Menomonie, WI: University of Wisconsin-Stout, Vocational Rehabilitation Institute, Research and Training Center.

Tyerman, A. D. (1984). The problem of personal identity in neurological rehabilitation. Nursing, 23, 679-681.

Tyerman, A. D. & Humphery, M. (1984). Changes in self concept following severe head injury. International Journal of Rehabilitation Research, 7, 11-23.

Vash, C. L. (1981). The psychology of disability. New York: Springer Publishing Company.

Wehman, P. & Kreutzer, J.S. (1990). Vocational rehabilitation for persons with traumatic brain injury. Rockville, MD: Aspen Publishers Inc.

Weinberg-Asher, N. (1976). The effect of physical disability on self-perception. Rehabilitation Counseling Bulletin, 20, 15-20.

Wells, L. E. & Marwell, G. (1976). Self-esteem : Its conceptualization and measurement. Beverly Hills, CA: Sage Publication.

Wolman, B. B. (1989). Dictionary of behavioral science. Academic Press, Inc.

Wylie, R. C. (1974). The self-concept: A review of methodological considerations and measuring instruments. Vol. 1. Lincoln: University of Nebraska Press.

Yahne, C. E. & Long, V. O. (1988). The use of support group to raise self-esteem for women clients. Journal of American College Health, 37 (2), 79-84.

Ylvisaker, M. & Gobble, E. M. R. (1987). Community re-entry for head injured adults. Boston, MA: College Hill.

APPENDIX A

PROTOCOL FOR REVIEW BY THE HS-IRB

1. The primary purpose of the study is to explore the level of self-reported self-esteem of students with Traumatic Brain Injury (TBI) from community colleges in Santa Clara County. A secondary purpose is to determine if there is a significant relationship between the self-esteem of the students with TBI and their involvement in disabled student services offered by the community college. The results of this study should increase the understanding of the emotional well-being of college students with disabilities resulting from head injury.
2. The following research questions guided this investigation:
 - a) What is the level of self-esteem of community college students with TBI in Santa Clara County?
 - b) What kind of disabled student services do college students with TBI use and how often?
 - c) Is there a significant difference in the level of self-esteem of community college students with TBI who reported different level of use of disabled student services?
3. Methods:
 - a) Community colleges in Santa Clara County will be investigated in this study: De Anza College, Evergreen Valley College, San Jose City College, and West Valley College. All of them suggest services for students with disabilities. The subjects will be community college students with TBI from these campuses, who are working toward academic or vocational curriculum goals offered by the college. All of them suffered from mild, moderate or severe physical, cognitive, or emotional disabilities as a result of the traumatic brain injury and they use Disabled Student Services on campus.
 - b) The subjects will be contacted by counselors from the college disabled student services who review the instruments and then, the researcher will administer them to the subjects on campus.
 - c) The researcher identified a convenience sample of community colleges in Santa Clara County that are easily accessible.
 - d) The results of the study should provide a useful context for improving intervention strategies on behalf of the students with TBI.

f) No compensation be awarded to subjects for participation in the study, beside the importance of their participation to the research.

g) The subjects will not be identified with the data. The subjects would be anonymous to the researcher, in order to show respect for the subjects' confidentiality; and because the researcher believed that anonymity would encourage honest responses.

4. Materials and Devices

a) Self-Esteem Scale - Self-report instrument was selected for use in this study to obtain the self-perceptions of subjects regarding their Self-Esteem. The Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) was used to measure the Self-Esteem level of the students. The RSES is a ten item inventory with 4 point Likert scale (strongly agree = 1; strongly disagree = 4). Items are ordered in the positive direction with a high score indicating high general Self-Esteem. This scale is a widely used measure both generally and with head injured and it consider to be an acceptable measure. Rosenberg (1965) reported reliability coefficient of .92 and a scalability of .72 for the scale.

b) Demographic questionnaire - A demographic questionnaire that was developed by the researcher and included the items: gender, age, family status, ethnic group, times since injury, cause of the head injury, the length of time the individual was unconscious, what are the Disabled Student Services he/she use,(on-campus and off-campus), and how often. This questionnaire was used to describe the subjects and to determine their level of using Disabled Student Services.

c) Interviews- The coordinators and/or counselors from the college disabled services will be interviewed by the researcher in order to get an information about the scope of the services available to students with TBI in each campus, and in order to get their assistance to contact the subjects. The interviews, the RSES, and the demographic questionnaire will be completed during October 1994-January 1995.

5. Procedures- The coordinators of the disabled student services will receive the RSES, and the demographic questionnaires from the researcher, in order to review it and to suggest any appropriate accommodations for the students with TBI. The researcher will add a consent letter to the student in which the student will be informed about the purpose of the study and what will be done with the data that he/she provides. In this letter the student will also be asked for his/her permission to complete the RSES inventory and the demographic questionnaire anonymously. The researcher will administer the inventories to the students with TBI on campus during November 1994-December 1994. After the study results will be analyzed and conclusions will be drawn, the author will meet with coordinators of the community college disabled services to thank them for their cooperation in permitting the research to be conducted at their campus. The results of the study and the conclusions will be shared.

thank them for their cooperation in permitting the research to be conducted at their campus. The results of the study and the conclusions will be shared.

6. Confidentiality

The data collected from the subjects will be used only by the researcher and her academic advisor for the purpose of conducting this study. Anonymity of the subjects will be strictly kept and all the materials will be erased when they are no longer needed for this purpose.

7. Consent Form

A consent form to the subjects is attached.

8. Copies of data collection instruments are attached.

9. Copies of agreements from participating community colleges are attached.

APPENDIX B

Rosenberg Self-Esteem Scale

Below is a list of statements dealing with your general feelings about yourself. If you agree with the statement, circle A. If you strongly agree, circle SA. If you disagree, circle D. If you strongly disagree, circle SD. You should remember that you do not have to mention your name or any other identified information, so please try to answer honestly.

	1 Strongly agree	2 Agree	3 Dis- agree	4 Strongly Disagree
(1) On the whole, I am satisfied with myself.	SA	A	D	SD
(2) At times I think I am no good at all.	SA	A	D	SD
(3) I feel that I have a number of good qualities.	SA	A	D	SD
(4) I am able to do things as well as most other people	SA	A	D	SD
(5) I feel I do not have much to be proud of.	SA	A	D	SD
(6) I certainly feel useless at times.	SA	A	D	SD
(7) I feel that I'm a person of worth, at least on an equal plane with others.	SA	A	D	SD
(8) I wish I could have more respect for myself.	SA	A	D	SD
(9) All in all, I am inclined to feel that I am a failure.	SA	A	D	SD
(10) I take a positive attitude toward myself.	SA	A	D	SD

Part 2

Demographic Questionnaire

PLEASE CIRCLE WHAT APPLY TO YOU,

1. **Gender**

- A. Female
- B. Male

2. **Date of Birth** Month _____ Year _____

3. **Currently Family Status**

- A. Single
- B. Married
- C. Divorced
- D. Separated
- E. Live with a partner

4. **Culture or Ethnic Group with Whom you Identify**

- A. Asian American or Pacific Islander
- B. African American
- C. Hispanic American
- D. Native American
- E. Caucasian American
- F. Filipino
- G. Other, please state, _____

5. **Date of Acquired Brain Injury** Day _____ Month _____ Year _____

6. **Cause of the Head Injury**

- A. Motor Vehicle Accident / crash
- B. Fall
- C. Assaults / Violence
- D. Sports / Recreation
- E. Stroke
- F. Health Related Injury
- G. Other, please state, _____

7. a) Did a loss of consciousness result from Acquired Brain Injury?

Yes_____No_____Do not know _____Do not remember_____

b) Did an alteration of consciousness result from Acquired Brain Injury?

Yes_____No_____Do not know _____Do not remember_____

c) Did a coma result from Acquired Brain Injury?

Yes_____No_____Do not know _____Do not remember_____

How long was the coma / loss of consciousness / alteration of consciousness ?

(Mark one answer)

- A. less than 1 hour
- B. 1-24 hours
- C. 1-7 days
- D. 1-4 weeks
- E. 1 month and more
- F. Do not know

8. Since your brain injury : (circle the right answer)

1. Are you experiencing more headaches? Yes_____ No

Do not remember _____ Do not know _____

2. Do you tire more easily ? Yes_____ No _____

Do not remember _____ Do not know_____

3. Do you experience any new muscle weakness ? Yes_____ No _____

Do not remember _____ Do not know_____

4. Do you experience dizziness ? Yes_____ No _____

Do not remember _____ Do not know_____

5. Do you have ringing in your ears ? Yes_____ No _____

Do not remember _____ Do not know_____

6. Are you having any blurred vision ? Yes _____ No _____
Do not remember _____ Do not know _____
7. Are you having problems with your hearing ? Yes _____ No _____
Do not remember _____ Do not know _____
8. Are you having problems with your coordination like loss of balance , writing, or working with tools ? Yes _____ No _____ Do not remember _____
Do not know _____
9. Have you had any muscle twitching ? Yes _____ No _____
Do not remember _____ Do not know _____
10. Do you have difficulties with your walking ? Yes _____ No _____
Do not remember _____ Do not know _____
11. Do you need the aid of a wheel chair or a cane ? Yes _____ No _____
Do not remember _____ Do not know _____
12. Do you experience any problems with your memory ? Yes _____ No _____
Do not remember _____ Do not know _____
13. Are you having problems learning new information, skills or tasks ?
Yes _____ No _____ Do not remember _____ Do not know _____
14. Does it take you longer to process information, solve a problem, write a paper or letter ? Yes _____ No _____ Do not remember _____ Do not know _____
15. Are you having problems with reading ? Yes _____ No _____ Do not remember _____ Do not know _____
16. Are you having problems with writing ? Yes _____ No _____ Do not remember _____ Do not know _____
17. Are you having problems with spelling ? Yes _____ No _____ Do not remember _____ Do not know _____
18. Do you have words on the tip of your tongue and just cannot get them out ?
Yes _____ No _____ Do not remember _____ Do not know _____
19. Do you become upset or frustrated more easily ? Yes _____ No _____
Do not remember _____ Do not know _____

20. Does family / friends / co-workers say you are more irritable ?
Yes _____ No _____ Do not remember _____ Do not know _____
21. Are you having more difficulty keeping your house and / or yard maintained ?
Yes _____ No _____ Do not remember _____ Do not know _____
22. Are you less involved in social activities ? Yes _____ No _____ Do not remember _____ Do not know _____
23. Are you having new problems getting along with your spouse / family / friends or co-workers ? Yes _____ No _____ Do not remember _____ Do not know _____
24. Have you been depressed ? Yes _____ No _____ Do not remember _____ Do not know _____
25. Do you lose your temper more easily ? Yes _____ No _____ Do not remember _____ Do not know _____
26. Are you more anxious ? Yes _____ No _____ Do not remember _____ Do not know _____

PLEASE MARK THE APPROPRIATE SPACE FOR THE NEXT QUESTIONS:

During the last year have you participated in any of the following student services ?

a) **Support group**

Yes ____ No _____

If "yes" On Campus _____ Off Campus _____

How often ? (circle the one that applies)

1. once a week or more
2. two times a month
3. once a month
4. less than once a month

b) **Counseling** (group counseling or individual counseling)

Yes _____ No _____

If "Yes" On Campus_____ Off Campus_____

How often? (circle the one that applies)

1. once a week or more
2. two times a month
3. once a month
4. less than once a month

c) **Social Club**

Yes _____ No _____

If "Yes" On Campus_____ Off Campus_____

How often? (circle the one that applies)

1. once a week or more
2. two times a month
3. once a month
4. less than once a month

d) **Memory class**

Yes ___ No___

If "Yes" how often? (circle the one that applies)

1. once a week or more
2. two times a month
3. once a month
4. less than once a month

e) **Other classes designed to assist students in developing skills** (like : comprehension, verbal expression, auditory processing.)

Yes _____ No _____

If "Yes" how often? (circle the one that applies)

1. once a week or more
2. two times a month
3. once a month
4. less than once a month

f) **Speech-Language- Communication** (program or class)

Yes ___ No___

If “ Yes “ how often? (circle the one that applies)

1. once a week or more
2. two times a month
3. once a month
4. less than once a month

g) Adaptive Computer Lab

Yes ___ No ___

If “ Yes “ how often? (circle the one that applies)

1. once a week or more
2. two times a month
3. once a month
4. less than once a month

h) Adaptive Physical Education

Yes ___ No ___

If “ Yes “ how often? (circle the one that applies)

1. once a week or more
2. two times a month
3. once a month
4. less than once a month

i) Do you receive any kind of academic assistance like, tutoring, test taking assistance, reader, or, note taking.

Yes ___ No ___

If “ Yes “ how often? (circle the one that applies)

1. once a week or more
2. two times a month
3. once a month
4. less than once a month

j) Do you participate in any class or activity designed to assist students in developing academic skills like, reading, writing, or spelling ?

Yes ___ No ___

If “ Yes “ how often? (circle the one that applies)

1. once a week or more
2. two times a month
3. once a month
4. less than once a month

k) **Career Development** (career counseling, career assessment, career plan class, etc.)

Yes ___ No ___

If “ yes “

On Campus___ Off Campus_____

How often? (circle the one that applies)

1. once a week or more
2. two times a month
3. once a month
4. less than once a month

l) **Independent Living Skills Program**

Yes ___ No ___

If “ yes “

On Campus_____ Off Campus_____

How often? (circle the one that applies)

1. once a week or more
2. two times a month
3. once a month
4. less than once a month

*****END*****

Thanks for spending your precious time and energy to complete this questionnaire.

APPENDIX C

Agreement to Participate in Research

1. I have been asked to participate in a research study investigating the level of self-esteem of community college students with traumatic brain injury (TBI), and its relationship to the level of their use college disabled students services.

2. I will be asked to complete the Rosenberg Self-Esteem Scale and demographic questionnaire which will be completed on campus during the fall 1994 semester and it will last about 15-20 minutes.

3. No risks are anticipated, besides the time it will take to complete the forms. Anonymity will be kept.

4. The result of this study should increase the understanding of the emotional well-being of college students with TBI, and their level of using disabled student services.

5. Since essential information about the re-integration of individuals with TBI in community college can be provided by this study, your participation is very important.

6. The results of this study may be published but no information that could identify you will be included.

7. Questions about the research may be addressed to the investigator, at (408) 733-8126. Complaints about the research may be presented to the respective Department Chair, Dr. Montemurro at, (408) 924-3700. Questions or complaints about research, subjects' rights, or research-related injury may be presented to Serena Stanford, Ph.D., Associate Academic Vice President for Graduate Studies and Research, at (408) 924-2480.

8. You should understand that your participation is voluntary and that choosing not to participate in this study, or in any part of this study, will not affect your relations with San Jose State University.

9. You have received a signed and dated copy of the consent form.

*** Your signature on this document indicates agreement to participate in the study.**

*** The signature of a researcher on this document indicates attestation that the subject has been fully informed of his or her rights.**

Subject's Signature

Date

Investigator's Signature

Date