Dance/Movement Therapy as an Approach to
The Integration of Body Image with
Individuals Sustaining
Traumatic Brain Injury:
A Synthesis of Literature

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ABSTRACT

With advances in acute and post-acute care, the number of survivors of traumatic brain injury (TBI) are on the rise. This thesis reviews and synthesizes the literature on TBI, body image and its role in the process of rehabilitation, and support for dance/movement therapy as a tool for integration of self through the body with individuals surviving TBI. It is this author's conclusion that existing literature is supportive of the use of dance/movement therapy as a tool for integration of both the past and presently held sense of self through the body with the TBI patient.

Research indicates that the survivors must adapt to cognitive, physical, and emotional changes in the self due to losses experienced as a result of the injury. The literature reveals that recovery appears to be somewhat developmental in nature and seems best facilitated by a multi-modal approach.

This author observed that clients frequently describe the integration of previous and presently held body image through body referenced statements, either verbal or non-verbal (as loss of verbal articulation to express feelings is common with these individuals).

The body is a universal reference point for the sensory experience and understanding of "self." The brain helps to
organize and make meaning of body level experiences on both conscious and unconscious levels. It appears that a psychological experience occurs in harmony with physical and cognitive processes. It is with this event that emotions become connected to the formation of one's sense of self in the world. While fragmentation in the experience, understanding of, and/or emotional attachment to the body/self is true for everyone, it is particularly important for TBI clients because of the loss of body/self.

The literature reveals that dance/movement therapy is a form of psychotherapy in which the many facets of an individual (cognitive, physical, and emotional) can be reformed into a meaningful whole. Due to the diffuse nature of brain injury, research has been difficult and limited research exists with this population. To this date little research has been done specifically connecting dance/movement therapy as an approach in the integration of self with this population.
DEDICATION

This thesis is dedicated to the survivors of head injury and other individuals involved in the struggle to experience, understand, and invest in a cohesive sense of self.
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INTRODUCTION

Many individuals are surviving TBI injuries. Recently, focus with these individuals has been placed on rehabilitation. This aspect of treatment continues to be of major importance in the success or failure of the recovery process. As is known, survivors of TBI suffer damage in cognitive, physical, and emotional areas. There is a need for integration of these three areas as they encompass the whole person (Wise, 1981). It is also important that the individual who has experienced TBI and the changes that occur begin to form a more stable sense of body image by integrating both the previous and the present understanding of body image. Development of body image appears to be an ongoing process (Mahler, 1975). An issue which is often highlighted by patients is the adjustment to body image with a sometimes greatly altered body.

Developmentally, the body is the first reference point for interaction and understanding of that interaction in the world (Freud, 1911, Piaget, in Ginsberg and Opper, 1988; Kestenburg, 1975). A realistic sense of self, first experienced through body, appears to be necessary in relationships (Mahler, 1975). The body is the primary tool in dance/movement therapy. The body is involved in the experience
of moving and is also the vehicle by which the individual can reestablish a cohesive sense of self from which to interact with the world (Bartenieff, 1980; Kaiser, 1990; Best, 1990).

It is this author's hypothesis that through a review of existing literature in TBI, body image and movement therapy, that Dance/movement therapy may prove to be an approach in which the body image of TBI patients is reintegrated.

According to Berrol and Katz (1985), a greatly changed person emerges from the experiences of traumatic injury to both brain and body. The person may be altered physically, cognitively, and/or emotionally. Physical limitations may limit voluntary movement. This greatly affects the individual's sense of control over his body and the environment. Endrigian (1989), states that physical losses affect one's ability to experience the world in a way that makes sense. Although physical losses may be few, cognitive deficits (for example, understanding and retention of physical experience) make awareness and interaction limited due to decrease in thought processes, memory, and other problems (Fisher, 1985).

Of the many losses, emotional concomitants of TBI are probably the most frequently neglected by professionals and family members involved in the process of rehabilitation, especially in the case of less severe injuries. Issues may include grieving and separation over loss of the known body/self (Bowlby, 1977, Kubler-Ross, 1969, Best, 1990). The
losses affect the individual's ability to form stable relationships with others as well as with oneself. Prigatano (1984, 1988) has done extensive research in the area of neuropsychology and the emotional and behavioral effects of TBI. Jeannette and Teasdale (1981) have also researched the psychological aspects of TBI. Eames (1988) asserts that the individual is no longer capable of functioning at previous levels of interaction. An emotional issue which is of great importance to patients is that of an altered sense of body image.

As mentioned earlier, all aspects of self can be affected when a TBI is sustained. The sense of self as was previously known to the individual no longer exists as a whole. While parts of the self may remain intact, others have been permanently changed. The individual is now faced with the task of organizing and integrating both past and presently held sense of self. In clinical treatment experiences, body image is often the vehicle by which this integration occurs (Berrol and Katz, 1985).

Body image research includes both normal and abnormal populations. The concept of body image is often described as "the picture of our body which we form in our mind, that is to say the way in which our body appears to ourselves" (Schilder, 1935). This definition has been expanded to by including the body as a psychological experience (Fisher and
Cleveland, 1968), and an emotional one (Kolb, 1959). Van der Velde (1985) has stated one's body image is crucial in the development of one's self-concept and that it affects one's social interactions. In defining body image it is clear that physical, cognitive and emotional components combine to form body image as it is the forerunner and foundation for one's sense of self in the world.

How does normal development of body image occur? The infant is born. The body is explored by touching and being touched. The body is the first object in object relations. It is also the subject. Mahler (1975) has studied the phenomenon of separation and individuation of the human infant and describes this process as natural in human development. Her studies have been a major contribution in the area of body image research. Schilder (1920) also discusses how movement affects a change in body image. This includes the movement of a body in response to touch or withdrawal of touch. The infant begins to have a love relationship with its own body based on its perceptions of physical sensations, both internal and external. Cognitive awareness and retention of sensations enable the infant to begin to differentiate himself from other objects and individuals in the environment. The infant begins to become aware of its body parts and the relationship of those parts to each other and in space and gradually gains physical control over those
parts in order to explore and manipulate the environment (Ginsberg and Opper, 1988).

Piaget has done extensive work in observation and research in how the infant gradually gains physical control over the world through the body. He appears to agree with the idea that the body provides the experience of movement and is the reference point from which the infant learns about himself and his relationship with the world (Ginsberg and Opper, 1988). White and Kalish (1965) discuss the connection between investment in the body and its relationship to self image.

Although body image is developmental in nature, it is never permanently fixed. Body image remains relatively stable unless insult or injury to the body or perception of that body through the brain occurs. Bruch (1962) speaks about the concept of body image changes with populations other than TBI. Fischer and Cleveland have also done research addressing the ability to adapt to stress and to fixed body images. The literature indicates that head injured individuals have the need to reintegrate a stable body image and that this process is crucial to rehabilitation (Best, 1990, Wise, 1981, Kaiser, 1990).

Freud (1923) believed that the first sense of self or ego was developed on a body level. Mahler (Kestenburg, 1975) also agreed that the self was first experienced on a body
level as the separation/individuation process occurred.

The official definition of dance therapy according to the American Dance Therapy Association (ADTA) is, in part:

Dance therapy is the psychotherapeutic use of movement as a process which furthers the emotional and physical integration of the individual. (1974)

Dance/movement therapy provides an opportunity for the individual to work on a body level with physical, cognitive, and emotional support given by the therapist on nonverbal and verbal levels. Individuals sustaining TBI must integrate past and present understanding of self through the body. It seems that dance/movement therapy would be the ideal tool for the reintegration of body image as it can approach the individual on physical, cognitive, and emotional levels. Leventhal (1974) supports this idea and terms it a "second chance" in which body image can be stabilized. Although body image is never permanently fixed (as it is developmental in nature), it remains relatively stable unless insult or injury to the body or perception of that body through the brain occurs.

The objectives of this research include bringing to awareness the need to include body image work as a part of the rehabilitation process. The literature is supportive that the body is strongly linked to a sense of self. In the healing process, it is vital that therapists recognize the importance and emotional investment which the body/self
carries. Measurements, techniques for treatment and the therapist's role in the healing process will also be synthesized in body image issues with this population. As there are more survivors of TBI, focus needs to be placed on the survivor as a whole person. This paper proposes dance/movement therapy as a modality in which the individual surviving TBI can help to mend a fragmented self into a meaningful whole.
HEAD TRAUMA

DEFINITION AND STATISTICS

The brain is the key to the central nervous system.
It controls our thoughts, feelings and movements.
It is the computer of the body.

Rubin and Barrar (1986)

According to Jennett et al (1977), head trauma can be defined as a history of a blow to the head, laceration of the scalp or forehead, and an altered state of consciousness, no matter how brief. Types of TBI and their effects will be discussed at a later point in this thesis. To obtain a clearer scope of the problem, it is helpful to first review some statistics regarding the population.

As a result of advances in neurosurgical techniques, mortality rates have dropped from 50 to 32 per cent according to a survey by Clifton (1985). Jennett and Teasedale (1981) found that about 100,000 people are admitted to hospitals in Great Britain and the United States with head injuries each year. It is also estimated that those not admitted outnumber admissions at a rate of 5 to 1 (Klonoff and Thompson, 1969; Strang, MacMillan and Jennett, 1978). These estimates appear
to indicate that TBI is a frequent occurrence. In a 1981 survey by the U.S. Department of Education, it was estimated that about 500,000 Americans per year are hospitalized following a TBI. Of that number about 30,000 to 50,000 individuals sustain injuries which leave them unable to return to previous levels of functioning. The National Head Injury Foundation (N.H.I.F.) in 1982 supported these findings and but added that between 50,000 and 90,000 per year are victims. Leibman (1986) cites 750,000 per year in the U.S. Of these staggering figures, N.H.I.F. (1983) estimates that about 100,000 of these are fatal.

Rimel (1983) found that males between the ages of 15 and 24 are most likely to be involved. These individuals tend to come from a broad range of educational, vocational, and socioeconomic backgrounds. Common causes of TBI include: automobile involved, work related, home, sports, and violence (blows, bullet and knife wounds). Automobile related injuries are the most frequent cause as reported by Kalsbeck (1980) and Leibman (1986).

According to results from a National Head Injury and Spinal Cord Injury survey, Kalsbeck et al. (1981) estimated that spinal cord injuries occur at a rate of about 5 per 100,000 and TBI at a rate of about 200 per 100,000 persons each year. It appears that for every spinal cord injury in the U.S. about 40 head injuries occur. Chance (1986)
discussed the need for increased support and services. Although residential treatment centers have increased from 50 in 1980 to 400 in the U.S. today, it appears that only 15,000 of about 300,000 receive the individualized treatment needed for rehabilitation. Krause (1984) gives a chart including: numbers injured, causes, and final costs for rehabilitation. Clearly TBI is an extensive and expensive problem which requires rehabilitation including psychotherapy (Butler and Satz, 1988).

EFFECTS OF TBI

Each TBI produces its own set of deficits due to specific locations of brain injury. It is important to understand both anatomy and physiology of the brain as well as physical, social/emotional, behavioral, and cognitive deficits which accompany injury. Often deficits impact an individual's total sense of self as experienced through body image. N.H.I.F.'s motto states that life for the individual experiencing TBI "... will never be the same again" (Chance, 1986).

Rosenthal (Teasedale and Mendalow, 1984) states that there are two major types of TBI (see figure 1):

1. penetrating open injury - brain damage follows the path of the missile through the brain. Damage is referred to
as "focal."

2. closed head injury - acceleration/deceleration forces cause rotation of the brain within the skull and exert pressure on the frontal and temporal regions resulting in diffuse axonal shearing and extensive white matter damage.
Figure 1 (based on Gilman & Newman, 1987)

**MOTOR CORTEX**
- body
- movement

**SENSORY CORTEX**
- body
- sensations

**FRONTAL LOBE**
- behavior
- personality
- decision-making

**PARietAL LOBE**
- motor
- planning

**OCCIPITAL LOBE**
- vision

**BROCA'S AREA**
- motor component
  of speech

**WERNICKE'S AREA**
- receptive
  component of
  language

**TEMPORAL LOBE**
- intellectual,
  emotional,
  and sexual
  activities

**BRAIN STEM**
- involuntary
  movements

**CEREBELLUM**
- coordination of
  voluntary
  movement
As stated, the effects of TBI manifest themselves in physical, cognitive, and emotional spheres. The physical disorders include the following:

a) Disorders of movement and posture such as spasticity, abnormal tone, ataxia, apraxia, rigidity, paresis, plegia, tremors, and contractures;

b) Sensory motor deficits such as body schema, unilateral body neglect, laterality, ability to cross midline, spatial perception and orientation, concepts of space, object constancy, motor planning, gross motor coordination, fine motor dexterity, strength, and response lag;

c) Sensory integration deficits such as reemergence of primitive responses, pathological reflexes, and balance problems;

d) Perceptual motor deficits such as reduced speed, poor eye-hand coordination, poor depth perception, spatial disorientation, poor figure-ground discrimination, auditory perception, apraxia, sensory neglect, and visual field cuts.
Physical deficits can interfere with both acquisition and integration of experience and development of appropriate responses. Glenn and Rosenthal (1985) and Griffith (1983) support findings in the physical sphere and add that while some major impairments may improve in the first six months of recovery, other deficits may endure throughout the life of an individual sustaining TBI. For example, Schilder (1934) describes how a disturbance in the position sense of a limb may be experienced. The individual may view his limb as a defective part which does not belong to his body. The limb is only visually experienced and is often "carried" through space like an external visual object. Changes in physical ability impact socialization, self-confidence, gender identity, and other areas according to Strauss and Finnegan (1990).

Physical losses often result in emotional and/or psychiatric sequellae. Meisner (1978) discusses feelings of inferiority, insecurity, or masochistic tendencies as a reaction to the loss of the body as it was experienced and understood and emotionally invested in. The body as the source of gratification, or "loved object," is no longer the same. The body becomes the target of hostile or angry feelings. Often awareness of this physical loss leads to feelings of depression. Additional emotional problems as a result of TBI will be discussed at a later point in this
Ben-Yishay and Diller (1983) and Brooks (1984) list the following cognitive and intellectual deficits which can result from TBI: memory deficits, attention, concentration, poor judgement, confabulation, learning disabilities, language and communication deficits, perseveration, inability to abstract, resistance to change.

Often individuals sustaining cognitive deficits will deny symptomatology (Rosen, 1986). This becomes a problem in planning rehabilitation as individuals often exhibit a lack of motivation or resistance to this aspect of treatment due to denial or a decreased level of awareness. The denial may be due to actual cognitive deficit or it may be a defense in order to cope with the loss of previous skills. Lishman states that it is certain that the mental sequellae far outweigh the physical sequellae and that this is the major cause of difficulty in rehabilitation (Boll, 1981). Lezak (1983) sights that an inability to perform executive functions such as planning, initiating, monitoring, and sustaining behavior can affect everyday activities and social interaction. Memory loss, both short and long term, is a deficit which lingers long after other physical and cognitive effects have subsided and can be the most devastating. Greziak (1979) explains that an individual's sense of self depends on an intact memory. To be oriented with "self," one
must have a sense of what one did, with whom, at what time, and where. According to Piaget (Ginsberg and Opper, 1988), this provides a template for assimilation of further experiences. Crosson et al. (1989) describe three levels of awareness:

1) intellectual awareness - awareness that a deficit exists.
2) emergent awareness - awareness that a problem is occurring and that the area of deficit needs to be addressed.
3) anticipatory awareness - awareness of future problems and behavioral changes necessary to compensate for areas of deficit.

Treatment strategies need careful consideration depending on the level of awareness the patient has. They also found that severe deficits in memory may hamper intellectual awareness because awareness requires integration of past experience.

In other forms of awareness such as emergent awareness, the individual is unable to recognize a problem as it is occurring (such as moving his body in space in relationship to an object with awareness) and must depend on others for feedback rather than trusting his own experience. Bond (1986) discusses loss of mental speed in communication and other areas and its effects of social interaction. Included in this area are gestural and postural nonverbal communication.
Farah (1984) gives a number of reports in which individuals experience a loss of ability to produce mental images and sights the posterior left hemisphere as responsible for this process. The concept that the brain generates, inspects and transforms visual images is included in this article. The idea that body image is often stored in the brain as a visual image may be affected by the loss of mental imagery. As was previously mentioned, individuals must have a template into which additional experiences can be assimilated. Chance (1986) looks at the effects of attention and memory loss as they impact social interaction. It appears that cognitive deficits may impact processing and retention of physical experiences and may also contribute to emotional and/or behavioral sequelae. Lishman (1978) cites the right frontal lobe as the area related to psychiatric disturbance.

Emotional sequelae include:
apathy, impulsivity, irritability, aggressivity, anxiety, depression, emotional lability, and childlike behavior

Behavior/personality sequelae include:
lack of goal-directed behavior, inability to plan, initiate, sustain, and monitor behavior (executive functions), poor self image, denial, bizarre ideation, loss of sensitivity to
others, dependency, passivity, indifference, sexual disturbance, and substance abuse

According to research by Fordyce et al. (1983), the psychiatric aspects of TBI include both personality and behavioral changes. These are the changes which may precede or follow the incident. It is important to understand that some of the problems do not necessarily improve with time. Lishman (1978) listed ten potential causes of psychiatric disturbances following TBI. Three of the causes were determined to be neurological and seven of the ten could be categorized as environmental, reaction to injury, or pre-existing to the injury. Prigatano (1978) discusses two concepts around psychiatric sequellae. These include the idea that the individual may be unable to abstract, and therefore unable to cope with problems as was formerly known, and the second idea being that the disabilities may be as a result of psychological or social pressures rather than the injury itself. In dealing with emotions and changes in body image and personality, it is important to determine whether disturbances are injury-specific and neurologically based and/or reactionary to the head trauma. Premorbid psychiatric deficits may be further complicated by neurological and/or reactionary factors as well, according to Prigatano (1987).

Prigatano lists unrealistic self-appraisal, depression,
explosive aggressive tendencies, and paranoias as areas which have a high degree of impact on the individual’s success in rehabilitation (from the psychiatric component of head trauma). He also states that these areas may require both neuropsychological and neurophysiological evaluations. Levin et al (1983) agree that it is also important to distinguish between “early” and “late” effects of TBI, the latter being more permanent. This information would allow the dance/movement therapist as well as other team members to determine specific treatment approaches.

In an article by Strauss (1990), a psychologist working with head trauma patients stresses that loss of self confidence about sexuality and gender identity (due to physical changes in the body) often cause problems with socialization and self esteem. These factors can further isolation, depression, sexual frustration, and may also escalate previous psychiatric conditions.

Prigatano et al (1988) assert that delusions are common in patients recovering from head trauma. He speaks about anosognosia as a delusion often experienced by head trauma patients. Ullman (1964) defines anosognosia as a severe form of neglect in which the patient fails to recognize the severity or existence of his deficit. Damage to the limbic and basal ganglia often distort normal emotional experiences and can lead to more permanent delusions and delusional
ideation. Patients sometimes experience these states when attempting to understand complex cognitive relationships and are unable to do so due to cognitive losses. According to Prigatano (1988), Meisner's work in personality and delusions suggests that patients who experience feelings of inferiority or inadequacy develop delusional ideation in order to cope with the loss of the "loved object," that is, the body as it used to be. Patients encounter problems and become overwhelmed as they attempt to do things that they had previously mastered. Delusions may also emerge as the individual tries to cope with dependence on others and loss of control over their thoughts, feelings, and/or bodies. Eames (1988) explores behavior disorders and classifies them in three categories:

1) Active - lack of impulse control, low frustration tolerance, restlessness, attention-seeking behavior, aggressive features

2) Passive - lethargic, difficulty initiating or sustaining activity, dependent features

3) Syndromal - behaviors related to area of damage in the brain

He identifies possible causes and management techniques as well. Patients may misinterpret sensory or cognitive information and react to this. Another possible cause of behavioral dyscontrol is damage to the limbic system itself-
where emotional and behavioral responses may be spontaneous and without provocation. Eames expresses that the premorbid personality and history of the patient is yet another influence in assessing behavioral disorders. Clinical vignettes will serve to illustrate behavioral disorders in the discussion section of this thesis. Prigatano and Klonoff (1988) state that it is important to assess neuropsychological deficits as they impact many phases of the individual’s life and rehabilitation process.

**REHABILITATION**

It is only in the past two decades that professionals have aggressively addressed head trauma in rehabilitation (Jennett, 1977; Champlain, 1982). Prigatano describes the importance of psychotherapy in dealing with issues surrounding head trauma and labels it "an educational process" for the patient. In psychotherapy, the individual learns who he/she is, what needs are basic and how to best get them met. The process also enables the individual to address areas of deficit and to develop coping skills. Butler and Satz (1988) support the need for rehabilitation and place much emphasis on psychotherapy as an integral part of this process. According to Rosenthal, it is important to realize that with each TBI, a unique set of problems occur.
and that rehabilitation needs to be individualized (Bach-Y-Rita, 1989). The goals of rehabilitation are many. One primary goal, and topic of this thesis, includes the reestablishment of self following TBI (Prigatano et al, 1984). Ben-Yishay (1979) supports the idea that reestablishment of self should be a priority and adds that if this is not addressed, it is unlikely that any positive outcome can occur. Giles and Clark-Wilson (1988) list self-care and independent living as two of the primary goals. They suggest a task analysis approach in working with patients. Jennett and Teasedale (1981) suggest four approaches to recovery including restoring old skills for damaged parts, teaching new skills to unaffected parts, retrieving lost ground, and influencing the attitudes of patients, family, and the therapeutic team.

Prigatano et al (1983) speaks about an increase in emotional and/or motivational disturbances over time, despite improvements in physical, cognitive, or behavioral areas. They report that the individual may need neuropsychological rehabilitation in order to cope with residual deficits which present themselves later in rehabilitation (although improvement in other areas of dysfunction may be evident). It is often advisable to gain information via a neuropsychological evaluation, as this can help to determine strengths and weaknesses. Cohen and Mapou (1988) list areas
of investigation to be included in a comprehensive neuropsychological evaluation. Information from this form of evaluation is essential to the team as it provides a baseline from which more specific evaluations can be obtained and is also important in formulating goals and strategies. In order to meet the diverse needs of patients, Giles and Shore (1988) suggest a multidisciplinary team approach. The team should include a variety of specialists to deal with different areas of deficit. Caplan (1987) suggests that an enriched environment can also facilitate success in rehabilitation. It is possible that the dance/movement therapist can provide such an enriched environment while working towards integrating cognitive, physical, and emotional areas through body-based work.

Greziak (Butler and Satz, 1988) discusses how head trauma patients experience a unique sense of loss as they have lost a part of self as was previously known and understood. Along with loss of sense of self, Greziak adds that there is a high risk for loss of self-esteem. Butler and Satz (1988) address the importance of gaining information on how the patient views himself. As verbal skills are often lacking, it is this author's opinion that movement therapy may be an ideal modality to be used in accessing information on self/body image through primarily nonverbal body level work. In work with patients, the body provides a concrete
medium form which the patient is able to reexplore the world. Many patients suffer from cognitive deficits which have severely limited their ability to abstract. While abstract images may surface during sessions and provide information about the patient's issues, the source from which these images is stimulated is concrete. The body is used to aid individuals in focusing, attending to, and processing stimuli. Eventually patients increase their control and interaction with the environment. Movement brings both thoughts and feelings to a conscious level (Schmais, 1974). Friswell, a psychologist working with head injured patients, views the process of rehabilitation as developmental in nature. He asserts that when patients begin to relearn the limits of the body, they can then retrain the body by giving it commands (Champlain, 1982). The patient can learn where his body ends and where the world begins. Butler and Satz (1984) list major themes of treatment including increased awareness, acceptance of the injury and residual deficits, retraining of deficit areas when possible, and development of a repertoire of compensatory skills. Prigatano (1987) proposed that rehabilitation should answer questions such as, "How does the individual process sensory information?" and "How does the individual sense the world?"

Peck (1985) points out that neurotransmitter disturbances can lead to difficulties in sensing and
processing information and that this can lead to depression. In evaluating depression, it is important to determine whether the origin is neuropsychologic or neurophysiologic. The distinction influences both planning in rehabilitation and prognosis (Prigatano, 1987). The same can be said about other psychiatric sequellae such as explosive tendencies, paranoia, delusional thinking, etc.

An additional problem in rehabilitation is that of unrealistic self-appraisal and/or social awareness as identified by Lishman (1978). The individual may tend to over or underestimate his abilities. This can lead to a number of other problems in rehabilitation, as the patient is not working from a realistic base.

The National Head Injury Foundation (1982) suggests that the most important factors in rehabilitation include the individual's ability to become aware of his deficits and limitations, to accept his new self, and to set new goals. Groveman and Brown (1985) add that as part of accepting a new self, the patient must first deal with core issues of loss, dependency, stress, guilt, denial, and the need for adjustments to continue living. They discuss the grieving process which accompanies the loss and use the Kubler-Ross model for dealing with these issues in therapy with head injured patients. The five stages in this model include: denial and isolation, anger, bargaining, depression, and
acceptance. Groveman and Brown (1985) present further information about the grieving process which accompanies the loss. They apply the Kubler-Ross model with TBI patients and discuss five stages of development as part of the emotional healing process and recovery. This developmental model is oriented toward issues of grieving and loss, with loss of the "self" (as it was formerly known) as the central issue. Kubler-Ross (1969) points out that the patient must be allowed to mourn his/her loss and that the therapist's role may be to sit with the patient in "silence that goes beyond words." Crossen et al (1989) support this viewpoint and recognize that denial is often seen in coping with cognitive deficits and sights the importance of psychotherapeutic treatment in dealing with these as well as other losses. Greziak (1979) agrees and adds that patients are forced to cope with a loss of part of the "self." He states that the struggle to deal with issues of loss often becomes the major focus in treatment.

Frederick Linge, a psychologist who survived a TBI describes his frustration in attempting to communicate during the early stages of recovery. He stated that he desperately tried to communicate in both verbal and written forms. However, these attempts proved to be futile. Linge added that he often resorted to physical means of communication such as stabbing a pencil through a paper, crumpling up a
piece of paper, or striking out at those around him. He also talked about initial denial of his deficits in the early stages of recovery. Linge supports the idea that individuals surviving TBI must confront and work through denial, anger, and depression if they are to succeed in coping with the real world. This psychologist also expressed that memories of past self and emerging awareness of present self were often conflictual and needed to be reality-tested in rehabilitation (1980).

How long should rehabilitation occur? It is assumed that environmental stimulation results in continued changes in brain function during the entire recovery process (Champlain, 1982). So, while it is advantageous to begin psychotherapy early in the process of rehabilitation, it is never too late to begin this intervention. Champlain also lists other basic assumptions of management with the head injured adult that help to form decisions about the length of rehabilitation. These include that higher cortical functions return in a hierarchical fashion, that is, from simple to complex. Also included is the assumption that higher cognitive functions are really composed of basic subsystems which may be regained by using a cross-modal approach that plays to any individual's strengths.

As most TBI patients experience losses in higher level cognitive functions (such as verbal and written
communication), it is possible that dance/movement therapy as a psychotherapy could meet clients' needs for a more basic form of communication early in the rehabilitation process. Eames (1988) sees the primary goal of rehabilitation as returning the patient to the highest level of functioning. Klonoff and Prigatano (1988) agree and add that psychotherapy is really an educational process in which the client learns to behave in his or her own best interests. They recommend a combination of both group and individual work as patients may be better able to accept feedback from peers who are also struggling with TBI. They also see one of the primary goals in rehabilitation as reestablishment of a sense of wholeness. Although dance/movement therapy cannot replace other specialties, it can allow the patient to put the puzzle pieces of his new self together to form a more unified picture.

Examples of artwork were used in Klonoff and Prigatano's article to demonstrate issues of loss and distortions in body image as perceived by the patient. Klonoff and Prigatano pose three questions for the therapist to consider:

What is the nature and severity of the injury?
What is the patient's reaction to the deficits?
What are the effects of these two dimensions on the interpersonal or psychosocial adjustment?

If therapists apply these questions specifically to body
image, areas of impact may include living skills, socialization, medical management, communication, sexuality, vocational and educational areas, leisure, mobility, independence, self-care, safety, mood, and problem solving. The importance of body image as it applies to rehabilitation will be explored in more depth in the following chapter.
DEFINITIONS

Head injury patients are faced with many challenges in the rehabilitation process. One of the most critical changes which often occurs as result of TBI is that of a dramatically altered body image. In order to better understand the concept of body image, definitions, normal development and disturbances in development will be presented. In addition, an evaluation of treatment issues related to disturbances in body image will also be included.

The concept of body image has been defined in many ways, with definitions stemming from both neurological and psychological areas.

Pick, a neurologist in the early 1900's theorized that body image could be defined as a spatial image of the body. He believed this representation to be a conscious one, and that it was formed through integration of visual and tactile sensory input. Other neurologists, including Head (1911) defined body image as a gradually formed representation of body movements and postural changes. Head believed that one's representation of the body could be changed or added to at any time. Unlike Pick, Head believed that representation
of body image was primarily unconscious. In 1935, Paul Schilder defined body image as, "The picture of our own body which we form in our mind, that is to say the way in which our body appears to ourselves." Others (Glucksman, 1972; Traub and Orback, 1964; Van der Velde, 1985) concur with this concept. Schilder also formulated the idea that a direct relationship existed between body image and self concept and that body image was actually a gestalt of sensory and psychic experiences. This idea was supported by Ottenbacher (1981), Ross and Rosen (1968), and Vinter, Monoud, and Housain (1983).

Body image has also been defined from a psychological perspective beginning with Freud in 1911, who gave birth to the idea that the ego was at first a body ego. He also believed that thought processes occurred as a result of organization of body level experiences. Freud considered the infant's relationship with his/her own body to be a very important one (Brenner, 1973).

To these concepts, Fischer and Cleveland (1958, 1968) and Kolb (1959) added that one's attitudes and feelings about physical experiences also contribute to the formation of body image. Kolb proposed that developing images of the body were maintained as memory traces in the nervous system and could reappear in neurological damage or psychological regression. In addition to this, Fischer and Cleveland asserted that
social interaction with others influenced body image development.

Bruch (1973) has done extensive research with body image and individuals with eating disorders. She defines body image as:

"The correctness or error in cognitive awareness of the bodily self, the accuracy in recognizing stimuli as coming from without or within, or the sense of control over one's own bodily functions, and the affective reaction to the reality of the bodily configuration and one's rating of the desirability of one's body by others." (p. 89)

Cratty (1969) asserts that body image is composed of knowledge including one's perception of the body's size, shape, how the body interacts with the environment, and attitudes toward the body. Schoenfeld (1969) sees body image as a psychological phenomenon including one's physical, social, and psychological view of one's self. Mahler (1975) speaks of various early stages of the separation/individuation process (to be discussed later in this thesis), in which the infant begins to perceive differences between stimuli coming from either inside the body or outside the body. She has identified this phenomenon as the beginning of body image development. Moore (1976) defines body image as the mental representation of one's body at any moment. He asserts that the image could be realistic or unrealistic depending on the individual's instinctive or defensive needs. Secours and Jourard (1953) theorize that one's body image is
important in personality development, as the body is the one object which is ever-present in the world. It appears that development of a relatively stable body image is important to one's self concept and that it helps to organize social behavior and formation of object relations (Van der Velde, 1985).

Although there is no one generally accepted definition, it seems as though both neurological and psychological components may be included when referring to body image. For the purpose of this hypothesis body image will be viewed as perception of internal and external sensory input and positive emotional attachment to the body as it is.

NORMAL DEVELOPMENT

As there are many existing definitions of body image, it follows that a number of theories on acquisition of body image are also prevalent. In order to approach disturbances in body image as a treatment issue, one must first have an understanding of normal development. For the purpose of this thesis formulation of body image development will be most closely associated with the theories of Schilder and Mahler.

As previously mentioned, both Pick and Head agree that formation of body image was due to awareness of sensory stimulation as a result of changes in movement. Pick adds
that one's body image is relatively firm by age five. He also attempted to link specific areas of the brain to body image development. Pick finds that integration of body image occurs in both the temporal and parietal lobes of the brain and that it is maintained in higher cerebral levels by spinal neuronal activity. This idea is supported by others (Cunning, 1988; Trimble, 1988; Williams, 1968). Schilder (1935) asserts that individuals develop a mental image of the body in space, based on sensory perceptions (for example, a foot in contact with the earth), and that this orientation in space helped to organize all other spatial experiences. He believes that experimentation with this image occurs continually, and that its gradual stability allows for greater control over both inner and outer parts of the body. Schilder proposes four components necessary for normal development of body image including:

1. Tactile, visceral and visual sensations of inner and outer bodily conditions
2. Body boundaries
3. Bodily posture and movement in space
4. The location of stimuli in various parts of the body

Freud (1923) maintains that these representations or mental images of the body formed the concept of "I" and were important to further development of the ego. He originated the theory that as the infant starts to distinguish sensations as coming from "inside" or "outside" its body, the beginnings of a "body image" are formed (Brenner, 1973). The
body has the task of organizing both enteroceptive sensory stimulation and proprioceptive sensory information. This allows the individual to separate himself from external object in space and to establish a relationship with those objects. Mahler (1975) followed this line of thinking and conceptualized specific stages of development where infants began to perceive themselves as separate from the mother. She identified "symbiosis" as the stage in which the infant perceives itself as physically and psychically fused with the mother. Mahler believed that at about six months of age, the infant begins to distinguish differences between "I" and "not I". She labeled this stage "hatching". It is during this time that the infant begins to differentiate between sensations coming from either inside the body or outside the body. This is due in part, to voluntary motility and myelinization of the nervous system. On a movement level, the infant alternates between molding to and pushing away from the mother to look at her. Mahler states that at this time in development, the infant may be observed as focusing more externally than internally and that increasing periods of wakefulness may occur. Germain (1983) cites Fenichel (1943) in that the process of separation/individuation occurs when the infant becomes aware of something outside of itself quieting the tension within. It is with this happening that the infant begins to perceive itself as separate from
external environment. The ability to differentiate between internal and external stimuli is important in the infant's capacity to test reality.

Adams and Victor (1977), Brignola (1987), and Kolb (1959) concur that the formation of body image is based on input from visual, kinesthetic and tactile sensory stimulation as movement of the body changes. They emphasize the importance of motor activity to both the promotion of change in, and the development of, a body image. Oliver Sacks, a prominent neurosurgeon and author of many books on the subject of body image, believes the development of body image to be based largely on information from proprioceptive input. This includes information from the body's joints and tendons about their relationship to time and space and to the individual parts in relationship to each other.

Fischer and Cleveland (1958, 1968) describe acquisition of body image as a result of the infant's understanding of his body as a reference point for interactions with himself, with others, and with objects in the world. This understanding occurs as a result of everyday experiences in the world, including mastery in solving developmental tasks (Coopersmith, 1967). Friswell, a psychologist who personally experienced head trauma, posits that an individual must know where his body ends and the world begins in order to regain control over movement of his body in space (Champlain, 1982).
Development of one's "self" based on body image appears to be a subjective experience (Coopersmith, 1967). Shonefeld (1963) supports this idea and states that the structure of body image is determined by the following criteria:

1. Subjective perception of one's appearance and ability to function
2. Internalized psychological factors
3. Sociological factors
4. Ideal body image

The premise that body image is a subjective experience indicates that there may be an affectual component involved with the psychological aspect of body image. In reviewing existing literature, it was found that Secourd and Jourard researched body cathexis (or the emotional attachment one has to the body) with male and female college students and found that positive feelings about the body are associated with positive feelings about the self, and that negative feelings about the body could be associated with anxiety, pain, bodily injury, disease, or with insecurity about the self. It appears that infants up to about six months of age (Mahler, 1975) and individuals coming out of the coma state are not initially able to differentiate sensory stimulation as coming from within or outside of the body (Kaiser, 1990). Through tactile, kinesthetic, proprioceptive, visual, and auditory experiences (stimulated by physical, social and emotional needs), the individual begins to understand its body through the senses and forms an emotional attachment to it.
DISTURBANCES IN DEVELOPMENT

The formation of a relatively stable body image is important because the body represents a constant object in which all interactions and experiences in the world are based. If disturbances occur, then the body becomes an unrealistic frame of reference which distorts the individual's view of himself and his relationship with the environment. A disturbance in body image may be defined as a failure to perceive the body as it is. Freud (1923) discusses the concept of changes in body identity and emotional attachment towards the body.

Fischer and Cleveland (1958, 1968) initiated the idea that social interaction with others molds body image to a certain degree. They believe that if interactions were faulty, then body image development would be adversely affected.

Schonfeld (1969) proposes that both radical physical changes and culturally determined standards could greatly influence one's body image. Schilder (1935) found that patients with lesions in the parietal lobe often demonstrate body image disturbances. These disturbances include right and left disorientation and reading and math problems as well as a number of other problems. This point is important because it suggests that acquisition of certain motor,
cognitive, and social skills which is often the goal of TBI rehabilitation and may be based on a well organized body image. Schilder also cites research on body image distortions in depressed, psychotic, and schizophrenic populations, and found that disturbances in body image are frequently experienced as deteriorating body parts, depersonalization (separation of the individual from his body experiences), and loss of body boundaries (differentiating what is felt by self or others). As previously mentioned Schilder proposes a strong link between body image and self image. In pathology, individuals may lose orientation to their own bodies and to others' bodies as well.

Brignola (1987) suggests that when one's capacity to move is affected by bodily injury, dramatic changes in a previously intact body image may follow. Becker (1976) states that injury or emotional upset may distort an individual's body image. Disturbances may occur after trauma, surgery, neurological diseases, or changes in body structure according to Kolb (1959). Bender (1934) lists factors which may contribute to psychosis as a result of an unclear body image. Included are:

1. Mysteriousness of the disease
2. Isolation in the experience
3. Lack of libido in normal, social, work, and sexual activities due to investment of drive energy in the area of disturbance.

Oliver Sacks describes distortion in body image as an
incongruity between what is felt and what is seen. Sacks experienced a traumatic accident which left him partially paralyzed for a period of time. He describes the feeling as:

"No longer being the captain of one’s ship" (p. 67)

Sacks captures the feeling of isolation and mysteriousness of his disease after receiving no response from his physician about the cause of his body image disturbance. He expresses the experience of loss:

"By saying nothing he took away a foothold, the foothold I so desperately needed, now doubly I had no leg to stand on, unsupported doubly, I entered nothingness and limbo." (p. 108)

Erikson maintains that an arrest of a body part permanently modifies and prevents the integration of a unified body image (1963, 1968). Adler (1964) supports this idea and adds that libidinal fixation to the affected body part becomes exaggerated in comparison to the whole body.

Body image disturbances range from mild to severe. The greater the perception of change, the more severe the distortion will be. Best (1990) describes anosognosia (denial of the affected limbs’ existence) and other problems related to body image in stroke victims. An additional factor in body image distortion is the individual’s premorbid personality (Goldstien, 1928; Weinstien and Khan, 1955; Ullman, 1962). In treating TBI patients it is important gather information.
concerning the patient's premorbid personality. Emotional states, cognitive levels, and physical behavioral manifestations observed post-trauma may be inherent in the individual's personality. For example, the patient may appear to be impulsive. A family interview may reveal that the patient possessed this trait before the accident. In this case, impulsivity may not be a result of the trauma itself. This information may affect strategies used in the rehabilitation process.

Cumming (1988) identifies two durations in body image distortion as a result of physical injury including; short term (due to swelling of the brain), and long term (due to right and left hemispheric lesions). Both long and short term durations are considered in this thesis. Trimble (1988) posits that body image can be distorted by damage to parietal, occipital, temporal and/or cortical areas of the brain. He found the temporal lobe to be important to the integration of sensory data from both the limbic and neocortical areas of the brain.

According to Garner (as cited in Kaslow and Eicher, 1988), body image disturbance can range from mild to severe. It appears that psychological factors such as the degree of ego strength, level of denial, and degree of neuroticism can be influential in determining the extent of the disturbance.

One's concept of body image may change at any time due
to adjustment during developmental phases or individual crisis, real or imagined. Disturbances may occur as a reaction to physical, cognitive, or emotional changes. Issues resulting from changes in body image may affect the individual’s ability to cope and adjust in the process of rehabilitation.

EVALUATION OF PSYCHOTHERAPY TREATMENT ISSUES

Endrigian (1989) asserts, "When an individual suffers damage to the body or brain effecting movement sensation or body image, the psychological representation of the body becomes discordant and in turn, orientation to one's self and self related to the environment becomes either lost or distorted. Other emotional or cognitive impairments resulting from head injury compound this problem."

Best (1990) cites many treatment issues related to body image disturbance. Among these are psychiatric problems (including decreased ego functions) in adapting to an altered body (Shontz, 1956; May, Wexler, Salkin and Schoop, 1978). May et al agree that decreased ego functioning may limit one's ability to initiate or maintain relationships with one's self or with others. To this list, Morris and Raphael add external support and the degree of disability as factors which influence one's adjustment to body image. Nemeth
(1951) identifies loss of virility, loss of a feeling of wholeness, and loss of bodily pleasures as additional issues related to body image. The inability to establish firm body boundaries (as measured by Rorschach tests) may decrease chances of psychological adjustment (Fischer and Cleveland, 1978).

Those experiencing body image changes are often fearful or anxious as a reaction to loss of a former self as it was previously known. Many agree that individuals may go through periods of mourning and reattachment as a normal part of the grieving process (Sroufe, 1986; Kaye, 1979; Bowlby, 1980). Kubler-Ross (1969) was one of the first to explore grieving patterns. She identifies these stages as denial, bargaining, anger, depression, and acceptance. Others have supported and expanded on these stages (Frye-Pierson, 1987; Wise, 1981). The process of mourning over a loss of or severe change in the body is similar to that of separation from a significant person according to Kolb (1959). In Best's thesis on stroke and body image, this loss is exaggerated as the individual must live with the no longer functioning half of the body. Feelings of regression, lack of control, and loss of independence may result in rehabilitation when individuals must depend on staff for everyday activities which were once mastered at an early age. Kolb also believes that individuals may reexperience
separation anxiety from those upon whom he currently depends. Bowlby supports this theory and adds that individuals may demonstrate "detachment" behavior as a defense in adjusting to the loss. Klien (1988) expands this idea in that the individual needs to decathect to the old body image and form a reattachment to a changed body image.

Robinson (1987) found that the area of lesion in the brain influenced reactions to issues. Those with lesions in the left hemisphere tended to result in catastrophic reactions and lesions in the right with indifference. Robinson also found that those with lesions closer to the frontal lobe were more likely to respond with depression.

The issues facing individuals with head trauma are many. One of the most challenging and long term tasks involves that of adaptation and integration to a sometimes dramatically altered body image.
DANCE/MOVEMENT THERAPY

THEORIES AND PRINCIPLES

Dance/Movement Therapy (D/MT) is based on the idea that mind and body are inseparable. Also central to D/MT theory are the ideas that movement reflects inner emotional states and that a change in movement behavior may lead to a change in thought or affect (Freud, 1923; Reich, 1949; Lowen, 1967; Schmais, 1976). The earlier study of body image formation, suggests that movement is vital factor to the development of a stable body image. Therapists concur with the basic theory and propose that feeling states are observable because movement links the inner being and the outer form (Bartenieff, 1980; Davis, 1978; Hanna, 1988; Weitz, 1979). According to Warren Lamb, communication happens first through the body (1965). North (1972) posits that an infant's mental and emotional state and experiences in the world (which help to formulate body image) cannot be separated from his physical experiences. To expand this idea, she adds that the infant's changing movement styles express growth in both emotional and mental areas. North maintains that it is important to observe shadow (small, minute) movements as they are often expressive of one's internal feeling state. Davis
(1974) agrees and asserts that observation of movement can give direct access to intrapsychic and interpersonal process. Van der Velde (1985) found that body actions are inconcealable reflections of the self.

Movement therapy theory supports this concept and are able to understand how individuals cope with the environment through movement observation and assessment. In order to better observe movement quality and quantity, Rudolph Laban, an early theorist and educator in the field, developed a notation system to record movement data more efficiently. In the 1930's Laban also developed a system to measure body movement qualities and movement through space. This system is labeled the Effort/Shape system of observation and notation. Laban identifies the following qualities or attitudes toward movement. These qualities could be combined in any number of ways to create a specific way of moving. He categorizes efforts or the drives to move into four main motion factors which also serve to describe movement from a qualitative point of view. Included in these factors are opposing attitudes towards each effort:
FLOW – one's relationship to the fluidity or control of energy

BOUND or FREE

SPACE – one's awareness and attention to the environment

DIRECT or INDIRECT
    single focus multi-focus

WEIGHT – one's active use or denial of gravitational force

STRONG or LIGHT

TIME – the attitude towards the ongoingness of time

QUICK or SUSTAINED

In order to produce movement of any type reciprocal innervation of the muscle groups is essential in that when one muscle group is actively contracting, the opposing muscle groups must be inhibited. These two groups of muscles are referred to as the agonists and antagonists (Zarro, 1990). The efforts or attitudes toward movement could be grouped together in a variety of ways according to Laban (Dell, 1970; North, 1972). TBI patients often utilize a limited range of movement efforts in combination. A limited repertoire of movement diminishes an individual’s ability to cope in the world.

Shaping allows the mover to adapt to objects in his environment. Shaping is divided into three areas including:
SHAPE FLOW - the body's relationship to itself
DIRECTIONAL - the spatial pattern the body forms
SHAPING - how the body sculpts through space

In most movement it is possible to observe phrases. Phrases in combination create rhythms in movement. These rhythms serve to organize movement. Phrasing involves a preparation, action, and recovery (Bartenieff, 1980). These phrases are repeated in a series and can be seen in familiar movements such as catching a ball, where the arms go up in preparation, the hands grasp the ball as the action, and the hands go downward as the recovery. Phrasing requires a connection between the intent of the mover and the mover's body. TBI patients are frequently observed moving without preparation or recovery which often results in unclear movement. They prefer to use simple phrases and struggle with movements which require more complicated phrasing. Kestenberg (1975) maintains that with each developmental phase the child gains mastery over his body and increases his use of efforts, aspects of shape, and clear phrasing as part of the normal developmental process. According to Davis (1974) and Bernstein (1984) in psychopathology, individuals may be unable to produce efforts to shape movements in space, or to organize phrases.
In relation to body image, Kestenberg (1975) states:

"Body attitude refers to the way the body is shaped, how it is aligned in space, how body parts are positioned in relation to one another and to the favored positions of the whole body. It also denotes all the patterns and phrases of movement for which there is readiness at rest. In addition, it indicates the qualities of movement which, through frequent use, have left their imprint on the body."

(p. 236)

Use of kinisphere, or reach space around the body, can also give indications as to one's ability to relate to others (Lamb, 1965; Ramsden, 1973 as cited in Best, 1990). This author frequently observed limited kinisphere or intrusion into the kinisphere of others without awareness of where personal space begins and ends. As mentioned in the previous chapter, relationships and social interaction help to influence body image formation.

In work with head injury patients, Katz (1985) found that this population had difficulty with modulation of the flow factor (related to the control of emotion). Brignola (1987) and Kaye (1979) found disturbances in the ability to attend to the environment or in use of the space effort. Bernstein (1984) asserts that these individuals often demonstrate unclear phrasing which relates to having difficulty distinguishing between inner and outer reality, as cited in Best (1990). Laban asserts that the body is always held in balance by opposing pulls as the body moves through space, (North, 1972). In hemiplegia, TBI patients often experience
difficulty in spatial intent because there is no counterbalance as one half of the body attempts movement through space (Bartenieff, 1980). As patients sustaining TBI often experience changes in body image, the following section will look at how movement therapy can address this issue. Techniques used with this population will also be included.

TREATMENT APPROACHES IN REHABILITATION AND HEAD TRAUMA

D/MT uses verbal and nonverbal means of expression and communication. This is important because it allows individuals who often struggle with verbal expression of feelings (related to the injury or the process of rehabilitation) to communicate in a more basic nonverbal way. Cognitive bridges and awareness of the movement process occur as the therapist or client lend verbal labels to the movement (Schmais, 1986). Hanna (1988) believes movement which is projected by the client to be symbolic of his state of mind. As the movement process occurs, the movement therapist is trained to observe changes in affect in relation to movement. Kaye (1979) supports the idea that movement is an alternate route in which injured patient can express feelings. As feeling states in relation to body image loss are processed in sessions, more energy can be used for the process of rehabilitation. Patients who have physical limitations may
creatively find safe alternatives to moving with the support of a therapist. In movement sessions, the therapist may support the patient through an individual movement experience or move in harmony with the patient. This shared movement process often decreases feelings of isolation in coping with issues of loss and related stressors and fears (Berrol and Katz, 1985).

To address the use of techniques with body image disturbances more specifically, sessions involve three main parts:

**WARM-UP** - to gain awareness of body parts in isolation and in relation to each other
- to explore movement efforts and movement through space
- to begin interaction

**MIDDLE** - to stimulate expression of imagery
- to increase movement repertoire and awareness of bodily sensations and related feelings

**CLOSURE** - to review physical experiences
- to release additional muscle tension
- to allow new connections to be formed to the body

Sandel and Johnson (1987) state that individuals must come to some level of acceptance of the present self if there is to be a concept of a future, independent self.

Berrol and Katz have used sculpting techniques to explore issues of activity and locus of control and passivity. Patients are asked to take an active role in molding or to allow themselves to be molded, or to resist being molded.
They may then be asked to discuss preferences and issues of control or dependency.

Bernstein (1984) identifies six levels of body image organization:
1) Investment of positive affect in body
2) Differentiation of the body from the environment
3) Recognition of body parts and their interrelationship
4) Movement of the body through space
5) Sexual identity
6) Aging process

She provides specific D/MT techniques and also lists maladaptive behaviors for each level of organization.

Franziska Boas, an early follower of Schilder and Bender, believes that the greatest obstacle to psychological and physical integration is fear of experiencing one's self in a different light (Levy, 1987).

D/MT assists the individual in regaining a sense of wholeness (Wise, 1981), and some control in a situation where he may feel none, according to Berrol and Katz. Clinical vignettes will be included in the discussion section of this thesis to further illustrate techniques used in D/MT in relation to body image.
DISCUSSION

The initial hypothesis of this thesis asserts that movement therapy can allow for integration of physical, cognitive, and emotional selves as stored in and projected through body image. The literature indicates that there are greater numbers of individuals surviving traumatic brain injury with advances in acute care being a primary factor, (Clifton, 1985). Often, individuals and their families are faced with a life which, "...will never be the same again" (Chance, 1986). Deficits in physical, cognitive, and emotional areas are often the result of traumatic brain injury.

Meisner (1978) asserts that feelings of inferiority, insecurity or masochistic tendencies (as a reaction to the loss) are not uncommon. The body as it was felt, understood and loved, is no more. Strauss and Finnegan indicate that a change in physical appearance may impact sexual identity, socialization and self confidence (1990). Cognitive deficits including language barriers that may greatly impede traditional psychotherapeutic approaches in dealing with issues during rehabilitation. Greziak (1979) addresses the importance of memory in rebuilding the "self". If body image is related to visual, kinesthetic, proprioceptive, or tactile
input and memory of that input, how are these memories or images affected by physical and cognitive deficits? Emotional concomitants appear to restrict the individual’s ability to cope with many issues in the rehabilitation process (Prigatano et al, 1988).

With the many losses that survivors face, it is evident that psychotherapy with this population would be a vital piece in supporting those involved in the healing process. The nature of losses sustained by these individuals led this author to believe that a concrete, body based form of psychotherapy may be indicated for this population. Ben-Yishay (1979) supports the idea that reestablishment of self should be a priority, and that it is the basis of success or failure in rehabilitation. Kaiser (1990), Best (1990) and others give strong support for therapies which are developmentally based as recovery appears to be developmentally based. Experience, awareness and investment in the world begin with the body (Freud, 1923). Linge, supports this idea and speaks about his initial attempts to communicate following a head injury. He states that he often resorted to communication through the body. Linge spoke of conflictual memories between his formerly known self and his presently known self. He emphasized the need for reality testing in rehabilitation.

As part of reality testing (which appears first in the
formation of a stable body image) D/MT may provide the individual sustaining TBI with concrete body level experiences in which he may physically sense and gain awareness of his body as it currently is. He may also express feelings in regard to these experiences.

An individual experiencing traumatic brain injury must regain awareness of the physical boundaries of his body. It is with this occurrence that he can form relationships with himself and with others in the world.

Schilder, Fischer and Cleveland, Van der Velde and others agree that body image is developed through movement. It appears that a clear and stable body image is the basis for coping with and relating to the environment. North (1972) posits that an individual’s mental and emotional states cannot be separated from its’ physical experiences. Bartenieff, Berrol and Katz, Best, Brignola, Endrigian, and Kaye, have identified specific movement problems in modulation of efforts, shape, or phrasing. It may be interesting to explore specific deficits in movement dynamics with relationship to body image.

The initial seed for this paper was planted through material presented by clients during D/MT sessions led by this author. Clients often demonstrated awareness of actual or imagined body image changes through body referenced statements. These expressions were both nonverbal and
verbal. Often, patients involved in a session would begin by moving a single body part. With the therapist's support clients were able to focus attention on their bodies and express thoughts and feelings. In one session, statements after looking at both arms included, "This one is smaller and weaker. It will never be the same... Can we do squat thrusts?" Another patient was observed hitting his affected arm whenever he experienced anger, as if that were his "bad side". These statements both verbal and nonverbal occurred in countless sessions.

It is this author's idea that the attainment of a relatively stable body image post injury is of vital importance. D/MT appears to be a unique tool in which the reintegration of body image can occur.

There is a need for objective data regarding body image and its effect on everyday functioning with TBI patients. This thesis leads to further research which would require movement raters to observe qualitative and quantitative changes in movement both pre- and post- movement intervention. This experiment would require careful consideration as to the variety of TBI and its impact on the individual.

Within D/MT sessions both group and individual sessions should be utilized depending on the stages of recovery and capacities of those involved. This includes Crosson's (1989)
model of awareness which affects the individual's level of involvement in treatment and affects D/MT strategies.

The following vignettes illustrate principles discussed in this thesis:

CASE 1 - Patient D. verbalized perceiving his right arm as three to four inches shorter than his left and asked to work on movement in the lower half of the body at this point in the session. The patient further stated that it was his fault that "the arm" had not caught up and that he should have worked harder. In actuality, both arms were the same length. This D/M therapist measured both arms to help the patient develop a more accurate perception.

CASE 2 - Endrigian (1989) observed a patient struggling with integrating the use of a cane to support his hemiplegic side. This therapist used the cane in D/MT sessions as an object with which both patient and therapist could connect. The cane became a positive object and the patient was able to begin to form a more positive attachment to the cane as part of his body image.

CASE 3 - Patient R. struggled with poor boundaries in social interaction. The patient was frequently observed coming in very close to female staff in normal interaction. This therapist measured distances between the patient and the
therapist, allowing the patient to control the space and then allowing the therapist to control the space. The patient was able to see a concrete difference between what was acceptable to the therapist and what was acceptable to him. This distance was used to support the patient in learning appropriate space in social interaction. Poor boundaries in interactional space often occur as a result of poor body boundaries.
V. SUMMARY

A review of the literature indicates that individuals sustaining TBI frequently experience cognitive, emotional, and physical losses. These losses appear to affect the individual's sense of self as it was previously known.

Often, the occurrence of a dramatic change in body image is experienced. The individual can no longer relate to himself nor to others using his body as a reference point.

In order to proceed successfully through the process of rehabilitation, it appears that individuals must transform investment of psychic energy from a previous body image and way of relating in the world. The individual must gain new experiences in which to base a body self.

Literature supports that the body and mind cannot be separated and that a change in the body may effect cognitive and emotional growth.

The literature reveals the need for a therapeutic modality in which cognitive, physical, and emotional aspects of the body can be integrated.

As the process of rehabilitation appears to be developmentally based, literature supports Dance/Movement Therapy as a modality which can address reestablishment of body image.
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