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The Impact of Post-Stroke Depression on Quality of Life and Functional Return

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THE IMPACT OF POST-STROKE DEPRESSION ON QUALITY OF LIFE
AND FUNCTIONAL RETURN

A Scholarly Project

by

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PREFACE

The topic of post-stroke depression was unfamiliar to me just a few short years ago. Prior to admission into the occupational therapy program, I was interested in the population of stroke survivors. Throughout my schooling, I expanded my interest with stroke survivors into effective rehabilitation approaches and the relationship to quality of life and functional ability. In the midst of my research for a class one year ago, I came across the topic of client depression. This phenomenon put a twist on my previous interest. Initial research had shown that the presence of client depression influences rehabilitation efficiency as well as the long term functioning and quality of life. I was drawn to understand more about the topic, as the presence of depression influences the entire realm of therapy. The motivation to research this topic has grown and I have become more determined to educate myself and other health professionals, particularly occupational therapists, about client depression and implications for clinical practice as well as the profession as a whole. My interest in stroke survivors and their quality of life stems from my personal experience with a relative, who is my inspiration, and who has faced life after a stroke for seven years with courage and dignity.

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CHAPTER I INTRODUCTION

Cerebral vascular accident (stroke) is a term used to describe insults in the cerebral vascular system of the body which result in a definitive or localized area of brain infarction (Copstead & Banasik, 2000). Approximately 500,000 new stroke cases are reported each year in the United States, and of this number approximately 150,000 die (Gillen & Burkhardt, 1998). Stroke is also the third leading cause of death in the United States and the leading cause of disability in adults. Of those who survive, the initial insult requires rehabilitation services or long-term care due to the lasting deficits caused by the stroke. According to Copstead and Banasik (2000), of “long term survivors (>6mo.), 48% have hemiparesis, 22% cannot walk, 24% to 53% are unable to independently perform ADLs, about 15% are aphasic, and 32% are clinically depressed,” (p. 1023). Barnett, Molar, and Bennett (1998) report that by the year 2025 in the United States, adults with stroke aged 65 years and older will increase to 18.4% from 12.6% in 1995. The years of life expected over 65 are presently 17.3, which is likely to increase in the future, thus the higher probability of stroke and higher population of stroke survivors that will need assistance (Barnett, Molar, & Bennett, 1998). Stroke currently disables more than 1.1 million Americans (Copstead & Banasik, 2000). In the United States, stroke survivors are the most frequent diagnostic group seen by occupational therapists practicing with adults who have physical disabilities (Trombly & Radomski, 2002). The traditional treatment of stroke includes optimizing ADL performance, return to work and

home environment by increasing independence and function of the affected side through neuromuscular re-education as well as teaching compensatory strategies. Functional return varies with each stroke survivor and can be measured in treatment by goals that are attained in areas of occupational performance and performance skills such as, range of motion, muscle strength, coordination, and other skills impacted by stroke.

According to Gillen and Burkhardt (1998), approximately half of all first time stroke survivors live for three years, with half of that group living for greater than 10 years. It is believed that approximately 90% will have residual neurologic deficits and one-tenth to one-third of stroke survivors will be institutionalized, with females exceeding men, and single men exceeding married men (Gillen & Burkhardt, 1998). Gillen and Burkhardt (1998) also report that of individuals surviving more than five years post-stroke, approximately one-fourth to one-half are not independent with ADLs, which influences psychosocial adjustments, quality of life, and depressive symptoms.

The population of stroke survivors is dynamic, as stroke causes multiple and varied impairments which are unique to each individual. Stroke affects the entire person with alterations in physical as well as psychosocial functioning. Stroke survivors that develop post-stroke depression face greater challenges fulfilling duties of their occupational roles and have a more negative perception of overall quality of life (Trombly & Radomski, 2002). The presence of depression may hinder the motivational component of stroke survivors and decrease their rehabilitation efficiency. Rehabilitation efficiency refers to the motivation of the

client during treatment, the ability of the client to progress through treatment stages, and the ability to retain learned information to assist in reaching goals (Trombly & Radomski, 2002).

Occupational therapists provide a holistic and encompassing approach to treatment, considering the entire person while developing treatment goals, which are not limited to physical rehabilitation. Occupational therapists pride themselves on creating purposeful and meaningful activities and occupations to address the individual needs and goals of each stroke survivor.

Occupation is the basic premise of occupational therapy. It is defined as “the ordinary and familiar things that people do every day” (Hinojosa & Blount, 2000 p.3). These occupations consist of activities that individuals engage in as components of their daily lives. Occupations are what define an individual and give life meaning. Occupational therapists can utilize their background to provide just-right challenges through the use of purposeful activities. Purposeful activities are defined as “goal directed behaviors or tasks...that the individuals considers meaningful” (Hinojosa & Blount, 2000, p. 4). These activities involve active participation which integrates physical, emotional, and cognitive components and combine with an individual’s personal meanings to form that individual’s occupations. After a stroke, survivors struggle to cope with their alteration in physical performance and abilities to carry out their everyday activities, occupations, and life roles. Occupational therapists help stroke survivors by creating client-centered treatment plans, providing just-right challenges in a supportive and empathetic environment, and teaching or adapting techniques for

activities and occupations that are meaningful to the individual in order to carry out duties of their occupational roles.

The Model of Human Occupation (MOHO), an occupational therapy framework, expresses the intricacies and complexity of the relationship between the mind and the body. MOHO describes occupational functioning as a successful person-environment interaction (Hinojosa & Blount, 2000). MOHO seeks to explain how occupation is motivated, patterned, and performed. By offering explanations of such diverse phenomena, MOHO offers a broad and integrative view of human occupation. Within MOHO, humans are conceptualized as being made up of three interrelated components: volition, habituation, and performance capacity. Volition refers to the motivation for occupation, habituation refers to the process by which occupation is organized into patterns or routines, and performance capacity refers to the physical and mental abilities that underlie skilled occupational performance. When an individual experiences a stroke, the person's subsystems may experience deficits in function; therefore hindering occupational and role performance. Stroke can have a negative impact on motivation, occupational patterns and routines, and overall performance. MOHO also emphasizes that to understand human occupation, we must also understand the physical and social environments in which it takes place. Therefore, this model aims to understand occupation and problems of occupation that occur in terms of its primary concepts of volition, habituation, performance capacity and environmental context. MOHO is also used in a variety of contexts including hospitals, outpatient clinics, residential facilities,

nursing homes, rehabilitation programs, and community based organizations. The flexibility of MOHO to multiple settings shows that it is holistic and dynamic enough to provide the necessary support and needs of the stroke survivor population.

Radomski, as cited in Gillen & Burkhardt (1998), acknowledges that the profession of occupational therapy has, since its origin, considered good quality of life a main goal of the therapeutic process. Radomski calls on occupational therapists to re-examine the origin of the profession and the importance of client-centeredness to provide a balance between therapist and client goals to reach optimal functioning. Yerxa (1998) distinguishes between the medical model and traditional values supporting occupational therapy and the importance of the client's perspective, which has been somewhat shadowed by the focus of the medical model.

Stroke survivors struggle with their loss of self, and have to grieve with that loss; yet, denial may be used by clients to cope (Yerxa, 1998). This situation may present difficulties for the rehabilitation team because the client may deny any need for therapy (Trombly & Radomski, 2002). Adjustment to the disability status is a critical component to rehabilitation efficiency and functional return.

Another manifestation of the struggle with the loss of self post-stroke may be depression. Some factors have been hypothesized and associated with predicting post-stroke depression, although definitive diagnostic criteria have not been set. Post-stroke depression seems to be its own phenomenon. Post-stroke depression is difficult to diagnose due to the communication difficulties or

inability express emotion, such as in aprodosia, and difficulty gaining an accurate pre-stroke history. Due to the lack of concrete etiological evidence surrounding the diagnosis of depression, it is even more difficult to predict the onset of post-stroke depression and factors that influence the onset of depression.

Multiple screening tools have been utilized for assessment of depression. Studies have used DSM III, DSM III-R, DSM IV criteria for major depressive disorder, alter the time frame for dysthymic disorder, and termed it “minor depression”. Due to the variance in samples and diagnostic criteria, the results cannot be generalized to the entire population of stroke survivors. Studies have typically focused on specific time frames since initial stroke. During the acute phase, depression rates have been found to be quite high, ranging from 45-61% of clients with left hemispheric lesions (Palmer, 2000). Using DSM III criteria, it has been reported that 27% of stroke survivors had major depressive symptoms and 25% had minor depressive symptoms in the first few weeks following stroke. It has been reported that one-third to one-fourth of depressed elderly are treated for depression, demonstrating an under diagnosis and under treatment of the disease, which includes elderly stroke survivors (Palmer, 2000).

Robinson (2003) conducted a literature review on the prevalence of post-stroke depression, the diagnosis of post-stroke depression, and the impact and treatment of post-stroke depression. Robinson found that there are four approaches that have been used to diagnose post-stroke depression: inclusive approach, etiologic approach, substitutive approach, and exclusive approach. Much controversy has surrounded the approach used to diagnose depression in

individuals with stroke. The results have shown that modifying the DSM-IV criteria for depression because of the existence of an acute medical illness is probably unnecessary. A study performed by Gainotti et al. (1999) reported that individuals with post-stroke depression had higher scores on catastrophic reactions, hyperemotionalism, and diurnal mood variation than the group with no brain injury, which had higher scores on suicide and anhedonia. These results were supportive of a relationship between depression and disability. However, these results were challenged by Robinson et al. (1993) and Starkstein, Fedoroff, Price, Leiguarda, and Robinson (1993), which reported that apathy, catastrophic reactions, and hyperemotionalism have been shown to occur in stroke survivors without a diagnosis of depression. Therefore, criteria for depressive disorder in neurologic illness would have to sustain certain duration, pathologic and clinical correlates, and a treatment response.

Subjective data were used to diagnose depression in a community sample in which 25% of community dwelling stroke survivors met criteria for major depression and 20% met criteria for minor depression. At six months, post-stroke depression rates were reported between 20 and 60% with DSM III criteria; and without DSM III criteria, rates ranged from 20-35% (Palmer, 2000). Depression rates at one year post-stroke range from 14-35%, with various diagnostic criteria used. There have been few studies of long-term follow-up. The results that have been reported imply that depression rates tend to remain steady, ranging from 20-30% at two and three years post-stroke. Regardless of the diagnostic method used, post-stroke depression is present in a good percentage of stroke survivors.

Stroke survivors' perceptions of quality life are negatively impacted by the presence of post-stroke depression (Palmer, 2000). This fact is of importance to the purpose and philosophy of occupational therapy.

The course and prognosis of post-stroke depression is specific to each individual. There is some evidence that dysthymia follow stroke is more persistent than major depression. A follow-up study of 37 clients at one year and 48 clients at two years showed that all clients with major depression improved whereas only 30% of clients with dysthymia improved (Gillen & Burkhardt, 1998). Of the clients who did not meet criteria for depression during the acute stage, one-third became depressed within two years post-stroke. A direct correlation between depression and mortality has been reported (Gillen & Burkhardt, 1998). Gillen and Burkhardt (1998) reported that clients who were depressed had a three times greater chance of dying than their non-depressed counterparts. Of further interest to occupational therapists, socially isolated survivors had mortality rates of 90%. Anxiety was found to be present with depression in a majority of cases (Gillen & Burkhardt, 1998). Stroke survivors who had depression and anxiety had poorer functional outcome, response to treatment, and more psychiatric problems than clients with depression only.

Coping is integral to adaptation of psychosocial and physical effects of stroke. Stroke survivors' stress may change over time, and therefore coping mechanisms must change as well. The stage theory by w (1984) as cited in Bronstein, Popovich, and Armidei (1991) proposes five stages of psychological adjustment to physical crisis: shock, denial, depression, reaction versus

independence, and adaptation. Individuals may fluctuate between stages at any time during rehabilitation, so it is important to not expect certain stages during specific time frames. The long-term impact of stroke may leave survivors overwhelmed and unable to utilize coping strategies secondary to prolonged stress. This may inevitably lead to physical exhaustion and depression (Bronstein, Popovich, & Armidei, 1991).

The effects of a stroke consist of physiological, psychological, and social dimensions. The stroke may alter the process by which individuals perceive their life situation, their hopes for recovery, and how they cope (Bronstein, Popovich, & zx, 1991). Coping is a process by which an individual seeks out a balance between the person and the environment. A stroke, or other sudden illnesses, can cause an individual to enter a crisis state which limits the effectiveness of coping strategies (Bronstein, Popovich, & Stewart-Amidei, 1991). Stroke survivors in a crisis state may be identified as having acute post-stroke depression due to the similarities in symptoms displayed, i.e., lack of motivation, poor use of coping strategies, periods of mood lability (Bronstein, Popovich, & Stewart-Amidei, 1991). The stroke survivor has to deal with many uncertainties during the acute crisis state. These uncertainties provoke anxiety and psychological stress, which impair ability to cope (Bronstein, Popovich, & Stewart-Amidei, 1991).

The acute state is a critical point in the treatment of post-stroke depression and anxiety. As the medical world becomes more aware of post-stroke depression and its impact on rehabilitation, many health care systems are treating depression in the acute stage. This approach is supported by research that found

antidepressants may prevent the onset of depression. However, it has been argued that the stroke survivor has a right to feel overwhelmed and is possibly in a crisis state during the acute phase. The use of antidepressants in the acute stage is suggested by Bronstein, Popovich, and Stewart-Amidei (1991) as prohibiting the stroke survivor to cope with their situation independently.

Stroke survivors have identified a variety of coping strategies which have included talking with other clients, especially other stroke survivors, praying, and positive thinking (Bronstein, Popovich, and Stewart-Amidei, 1991). A stroke survivor's ability to cope influences their own functional outcome. By successfully dealing with the stress of stroke-related deficits, the survivor may experience an increase in functional performance.

There is evidence that physical disability and depression after stroke are not directly correlated, despite the focus on physical functioning in rehabilitation settings. Results of a study in Maryland found no relationship between upper extremity and lower extremity weakness in stroke survivors with depression (Gillen & Burkhardt, 1998). Ultimately, the relationship between physical functioning and depression is complex. The presence of depression may inhibit participation in rehabilitation and delay or inhibit functional recovery, which could lead to continued or increased depression. Gillen, Eberhardt, Tennen, Affleck, and Groszmann (1999) found that stroke survivors with depressive symptoms had longer inpatient rehabilitation stays and used rehabilitation services less efficiently compared with their less depressed counterparts.

Caplan (2000) acknowledges a situation where physical rehabilitation may become a hindrance in the adaptation process to post-stroke lifestyle. He terms it “hyper-physical therapy syndrome”. Caplan (2000) refers to this syndrome in which stroke survivors strive to regain hand, arm, or limb functioning and return to prior level of function. The client becomes fixated and focuses all energy on improving deficits. The client becomes obsessed with their deficits. They set their goals too high and do not reach them, which leads to further feelings of failure and difficulty with adaptation to the disability status. Stroke survivors with hyper-physical therapy syndrome may stay in denial for a longer period of time. Some clients are afraid to quit therapy and see therapy as the only way out. They are afraid to quit because they will have to face the reality of their situation. Caplan (2000) goes on to state that these individuals spend all of their time and energy going to therapy, in therapy, or resting after therapy, and have little energy left for living. Therapists who work with stroke survivors in the physical disabilities setting need to be aware of this syndrome and assist the client with coping and adapting to their deficits in order to prevent enhanced feelings of failure and disappointment.

Post-stroke depression has been associated with psychosocial aspects of survivor recovery as well as physical function recovery. In a study by Fiebel and Springer, as cited in Gillen and Burkhardt (1998), depression and social withdrawal have been highly correlated. They stated that stroke survivors with depressive symptoms had a significant decrease in social functioning and failure to resume pre-stroke level of social participation. Fiebel and Springer reported

that stroke survivors who were depressed were found to have a decline of approximately 65% of pre-stroke social activities, whereas non-depressed stroke survivors had a decline of approximately 40% (Gillen & Burkhardt, 1998). Stroke survivors with aphasia frequently experienced social isolation compared with stroke survivors without aphasia.

There has been no direct association found between social withdrawal and physical recovery. Despite good physical recovery, a large proportion of stroke survivors are socially withdrawn. This suggests a missing component in current rehabilitation services. Results of studies by Angeleri et al. and Farmingham study as cited in Gillen and Burkhardt (1998) show that survivors who required minimal assistance with ADLs to independence with ADLs still did not resume social activities. Stroke survivors reported an increase in more sedentary and isolative activities such as reading, watching television, and socialization at home; whereas traveling and household activities were the areas most adversely affected in stroke survivors' lifestyles. It is important for rehabilitation occupational therapists to be aware that stroke survivors may not feel prepared to adapt to their previous work and leisure roles at home and in the community, as well as deal with the psychosocial implications caused by the stroke.

There are no precise health professional guidelines for the treatment of post-stroke depression. It is believed that supportive psychotherapy may be helpful; however, if the client has cognitive deficits, this approach is not appropriate due to deficits of personal insight and skills necessary to process information perceived to think and act (Trombly & Radomski, 2002). With

increased cognitive impairment, interventions should require little insight-oriented interventions, and be more focused on behavioral interventions; i.e., adapting the environment, and programs to activate the stroke survivor (Trombly & Radomski, 2002).

As will be demonstrated in Chapter II, there has been very little research conducted on the impact of client depression on functional return and rehabilitation efficiency post-stroke. The purpose of this scholarly project is to develop an educational tool on post-stroke depression for occupational therapists to utilize in clinical practice in order to provide more efficacious and client-centered treatment interventions.

The presence of post-stroke depression creates a complicated scenario for stroke survivors and for their rehabilitation health professionals. The disorder is one of complexity, affecting the entire domain of an individual's being. Occupational therapists have the underlying educational background and clinical skills to develop and alter their treatment approach to combat post-stroke depression and increase the productivity and success of stroke survivors. Chapter II includes a further review of literature on post-stroke depression and its impact on rehabilitation, functional return, and perceived quality of life. Activities and methodology are included in Chapter III. Chapter IV includes an educational module on post-stroke depression for occupational therapists to utilize in practice. A summary of conclusions and recommendations for further study is included in Chapter Five.

CHAPTER II REVIEW OF LITERATURE

There are several hypotheses of the etiology of post-stroke depression. Client depression can be a result of a physiological biochemical change in the brain and/or personal realization that there may not be full recovery from the disability. It has been found to be present in 20-60% of stroke survivors. A study by Astrom, as cited in Caplan (2000), showed that approximately 25% of stroke clients had major depressive disorder during the acute stage and 31% were depressed at three months post-stroke. Astrom also found that acute depression was more frequent in clients with left hemisphere aphasia. However, multiple studies have found that there is no difference in hemispheric lesion or presence of aphasia on depression rates. Depression rates in clients with aphasia have been shown to be similar to stroke survivors without aphasia; however, it has been reported that non-communicative stroke survivors are more likely to feel hopeless and are less able to cope due to the difficulty expressing emotions and comprehending language. Two and three year post-stroke depression rates were 19% and 29% respectively.

Four etiological hypotheses of post-stroke depression are cited by Caplan (2000): the first is that the ageing brain, with decreased neurotransmitter metabolism, may ultimately predispose elderly individuals to depression; the second is that stroke may cause depression due to alterations in neurotransmitter metabolism and creates an imbalance; the third hypothesis is that there may be pre-existing depression which continues after stroke; the last is that infarctions of

the left frontal lobe damages the control centers for emotion, and are more susceptible to depression.

According to Gillen and Burkhardt (1998), psychological variables are split into psychological and social variables. Psychological variables are internal and unobservable processes that impact drive and motivation, whether enabling or hindering it. Psychological variables include self-concept, depression, and anxiety (Gillen & Burkhardt, 1998). Social variables include social skills and occupational performance (Gillen & Burkhardt, 1998).

Post-stroke depression is commonly unrecognized and untreated in clinical practice (Pohjasvaara, Vatalja, Leppavuori, Kaste, & Erkinjuntti, 2001). There is a misconception that depression after a stroke is a natural and expected reaction to the sudden alteration of functioning, role status, and onset of disability. A study by Gustafson et al., as cited in Palmer (2000), acknowledges the difficulty in diagnosing and identifying depression in stroke survivors due to atypical presentation of depressive symptoms as well as communicative and cognitive impairments. Diagnostic signs of post-stroke depression may include erratic behavior, abnormal performance, poor recovery, refusing or failure to participate in rehabilitation programs, and worsening of deficits. Behavioral changes that may be due to stroke are changes in appetite, sleep, activity level and vegetative signs. These signs may be interpreted as depressive symptoms. Vegetative signs are sometimes the only sign of depression in stroke individuals. It has been argued that these vegetative signs are seen mostly in right parasyllvian strokes and affect the ability to express or understand emotion of spoken language, and are not

necessarily signs of depression (Caplan, 2000). It is hypothesized that untreated client depression will decrease the efficiency of standard rehabilitation services and affect functional independence in stroke survivors.

There are differing opinions on whether stroke location and post-stroke depression are related. A study by Gainotti, Antonucci, Marra, and Paolucci (2001) and a meta-analysis by Carson, MacHale, Allen, Lawrie, Dennis, House, and Sharpe (2000) failed to find a significant relationship between post-stroke depression and lesion location. However, a meta-analysis has shown that during the two months following initial brain insult, the left front and left basal ganglia lesions were significantly more common among clients with major depression versus any other lesion location (Robinson, in press). There has also been a significant correlation between the left frontal lobe and severity of depression for clients less than six months post-stroke.

It has been found that in-hospital depression scores were independently correlated with activity of daily living (ADL) dependence at two years post-stroke. Paolucci et al. (1999) found that depression was associated with poor recovery in ADLs and Herrmann, Black, Lawrence, Szekely, and Szalai (1998) found a significant relationship between severity of depression and severity of ADL impairment at 3 and 12 months post-stroke. Survivors with a left hemispheric stroke and major depression were found to be more cognitively impaired than individuals with right hemispheric stroke (Pohjasvaara, 2002). In a study by Reding et al. (1986), stroke survivors with depression treated with trazodone showed a greater improvement in ADL performance measured by the

Barthel Index. Post-stroke depression has been shown to have a negative impact on recovery in ADLs, and effective treatment has been shown to improve clients' recovery of ADLs (Robinson, 2003).

Gainotti et al. (2001) investigated the relationship between post-stroke depression and antidepressant treatment on motor scores and disability. The researchers wanted to determine if the post-stroke depression could be combated with antidepressant drugs in order to counterbalance the effects of depression on functional outcome. The working hypothesis was "if post-stroke depression has a deleterious influence on rehabilitation, but this effect is counterbalanced by the administration of antidepressant drugs, then an interaction should be found between the results of the rehabilitation process and the presence of a (treated or untreated) post-stroke depression"(Gainotti et al., 2001, p.258). The Barthel index, Canadian neurological scale, and the Rivermead mobility index were used to assess 49 individuals with post-stroke depression before, during, and at the end of rehabilitation. Twenty-five had been treated for depression and 24 had not been treated. These results were compared with the results of 15 individuals with stroke, but without post-stroke depression. The assessment for post-stroke depression included a psychiatric interview and the Hamilton depression rating scale (HDRS), which assess general depression. The selective serotonin reuptake inhibitor (SSRI) fluoxetine was used in 24 depressed clients, and one was treated with amitriptyline. The results indicated that there was a non-significant difference between groups in regard to motor and functional independence, and a significant improvement on time. Recovery of functional mobility, ADL, and

neurological performance of non-treated depressed stroke clients was less than both the non-depressed clients and the depressed but treated clients. It was found that the recovery from depression was significantly greater in treated clients versus non-treated depressed stroke clients (Gainotti et al., 2001). The results indicated that post-stroke depression has negative effects on rehabilitation outcomes, and preliminary results indicate that the use of pharmacological agents can counterbalance the negative effects on functional outcome.

Kotila, Numminen, Waltimo, and Kaste (1999) conducted a study to evaluate whether stroke survivors with depression needed more assistance with ADLs in a population based stroke register; and to identify if depressed stroke survivors were more often institutionalized than non-depressed stroke survivors one year post-stroke. The subjects included 594 first-time stroke survivors. The assessments were completed upon admission, at three, six, and 12-months post-stroke. The Rankin scale was used to assess handicap, the Beck Depression Inventory (BDI) assessed the presence of depressive symptoms, the Barthel Index assessed ADL dependence, the Mini-Mental State Examination was used to assess cognition, Scandinavian Stroke Scale assessed neurological impairment, the Speech Scale assessed language comprehension, and quality of life were all assessed. The BDI was performed on 321 of 423 subjects at 3 months post-stroke and on 311 of 390 subjects at 12 months post-stroke. The results showed that 151 of 321 (47%) and 147 of 311 (47.3%) of survivors were depressed at 3 and 12 months post-stroke. Seventeen percent of depressed stroke survivors were on antidepressants at 12 months post-stroke. Depressed stroke survivors at 3 months

needed more assistance with ADLs than non-depressed clients 12 months from initial stroke. Clients who needed assistance with ADLs at three months were also more depressed at 12 months. Stroke survivors with depression at three months (68.9%) were more often in institutionalized care between 3 and 12 months post-stroke than non-depressed clients (57.6%). The results provide evidence that post-stroke depression can impact rehabilitation and functional outcome post-stroke. The researchers were unsure of whether the poor functional outcome and reduced independence in ADLs or depression came first. Multiple studies have found dependence in ADLs to be the greatest predictor for depression (Astrom, Adolffson, & Asplund, 1993); and others have shown the presence of depression to be a predictor of poor functional outcome (Pohjasvaara et al., 2001 and Sinyor, Jaqcques, Kaloupek, Becker, Goldenberg, & Coopersmith, 1986). Gillen et al. (2001) found that depression and history of depression predict poorer rehabilitation efficiency.

In the article, *Depression is an independent predictor of poor long-term functional outcome post-stroke* by Pohjasvaara et al. (2001), the researchers sought to determine what, if any, effect depression at three months has on functional outcome at 15 months. The sample consisted of 390 of 486 consecutive ischemic stroke survivors aged 55-85 years. There were no differences in sex, history of previous stroke, stroke location. Stroke survivors with aphasia or poor medical condition were excluded. The survivors completed a detailed assessment of medical neurological and radiological stroke evaluation. The Beck Depression Inventory (BDI) to measure emotion, Rankin Scales to

measure handicap, and ADL function assessed by the Barthel Index (BI) at three months post-stroke were all completed. Depressive disorders were based on DSM III-R and ICD-10 diagnostic criteria at 3-4 months post-CVA and the survivors were deemed as having “major” or “minor” depression. Stroke survivors with depression were compared with survivors without depression. The BDI identified depression in 43.9% at three months and 44.6% at 15 months. DSM III-R major depression was diagnosed in 25.8% and minor depression in 12.5% at three months post-CVA. The results of the study showed that stroke survivors with major depression, but not individuals with minor depression, had worse functional outcomes and ADL function at 15 months post-stroke. Presence of major depression and/or BDI depression correlated with dependency in ADLs at 15 months. Poor functional outcome at three months as measured by the RS and BI correlated with BDI depression at 15 months, however no independent correlation was found. The study is relevant to occupational therapy because it provides evidence as to the impact of post-stroke depression on long term functional outcomes, which impact quality of life.

Gillen et al. (2001) examined the idea that pre-stroke depression correlates with the onset of post-stroke depression, decreased rehabilitation efficiency, and increased length of stay. They also wanted to examine the idea that a history of depression may correlate with more disability and decreased participation in rehabilitation. The subjects consisted of 243 of 348 consecutive stroke admissions. They were screened for cognition with the Cognistat, depression with the Geriatric Depression Scale (GDS), the Functional Independence Measure

(FIM) to assess ADL functioning, and assessed for history of depression. The results identified that 34% of clients with a history of depression met the GDS cutoff score for post-stroke depression, compared to 9% without previous depression. Females with previous depression had a higher probability to display depressive symptoms after stroke, with 50% at the GDS cutoff for post-stroke depression. Only 11% of females were without previous depression, which suggests a possible relationship between depression and onset of stroke. History of depression was related to lower length of stay-efficiency scores, which was determined by dividing the change in FIM from admission to discharge by the number of days hospitalized. According to Gillen et al. (2001), stroke survivors with depressive symptoms used rehabilitation services less efficiently than survivors without symptoms and they did not have longer length of stays; whereas a history of depression was correlated with longer lengths of hospital stay. Cognitive impairment was not a predictive variable of rehabilitation efficiency.

Pohjasvaara, Leskela, Vataja, Kalska, Ylikoski, Hietanen, Leppavuori, Kaste, and Erkinjuntti (2002) examined correlates of executive dysfunction in 256 of 486 ischemic stroke survivors. The subjects were given a neuropsychological examination 3-4 months post-stroke. Basic ADLs and complex ADLs were assessed. DSM III-R criteria were used to diagnose depressive disorders. Basic ADLs were assessed using the Functional Activities Questionnaire. Complex ADLs were assessed using the IADL Scale. Of the 256 subjects, 118 completed a detailed psychiatric evaluation. DSM III-R criteria diagnosed depression at 3-4 months post-stroke. Major depressive disorder, diagnosed with DSM III-R, and

dementia with depressed mood was labeled “major” depression. Stroke survivors with major depressive disorder and no psychosocial stress factors except the stroke were defined as having pure “stroke related major depression”. Survivors with dysthymic disorder and major depressive disorder in remission were labeled with “minor” depression. The Beck Depression Inventory (BDI) was also completed. The results of the study showed the frequency of executive dysfunction is 40.6%. There was no difference in the existence of depression by different criteria when comparing the stroke survivors with and without executive dysfunction. The clients with executive dysfunction were older, had lower level of education, were more dependent, and less functional in basic ADLs and complex ADLs. They also had lower Mini Mental State Examination scores, had DSM III-R dementia, and increased depression via BDI. There was no difference in stroke type between clients with executive dysfunction present or not. Anterior circulation lesions were more frequent in clients with executive dysfunction. Depression can present and impact initiation, attention, concentration; however, the significance of depression in the relationship to executive dysfunction was not significant in neuropsychological evaluations. This study’s results bring up important factors when evaluation stroke clients. Individuals may present with executive dysfunction, or depression, however, the two can occur separately or simultaneously and both impact cognitive performance and functional performance.

In the article *Activity, participation, and quality of life 6 months post-stroke* by Mayo, Wood-Dauphinee, Cote, Durcan, and Carlton (2002), the

researchers sought to examine the impact of stroke on activity and participation at six months post-stroke and the relationship to health-related quality of life (HRQOL) and quality of life (QOL). The subjects included 434 first ever stroke survivors from 10 hospitals. The parallel group was randomly selected and made up of a community dwelling sample of individuals without stroke matched by age and location. The Barthel Index (BI) and the OARS-IADL measured basic ADLs and IADLs. Reintegration to normal community living was measured by the reintegration to normal living index (RNL Index). Cognition was assessed via Mini-Mental State Examination (MMSE). HRQOL was assessed using the Medical Outcomes 36-item Short-Form Health Survey (SF-36). Physical and mental health was assessed by using the summary scales of HRQOL--physical composite score (PCS) and mental composite score (MCS). QOL was assessed using the QOL-VAS (visual analog scale). The results of the study indicated that 39% of stroke survivors reported limitations of functional activities. Fifty-four percent of survivors reported deficits of higher-level daily activities (IADL). Sixty-five percent reported limitations of reintegration into community activities. Stroke survivors rated their physical health seven points lower than healthy individuals. Survivors also indicated seven of eight subscales of the SF-36 were impacted by stroke. The SF-36 results showed that stroke survivors report significantly poorer HRQOL 6 months post-stroke than their age and gender matched healthy comparison group. The most frequently reported limitations by persons post-stroke were in the domains of having a meaningful activity (53% vs. 16%), household tasks (51% vs. 5%), travel (50% vs. 8%), and basic ADLs (33%

vs. 3%). The results indicated that stroke survivors will need assistance of some sort upon return to the community or they will be unable to sustain independent living. Ability to perform IADLs was correlated with QOL and HRQOL. Involvement in community activities had the strongest correlation with overall QOL.

Kauhanen, Korpelainen, Hiltunen, Nieminen, Sotaniemi, and Myllyla (2000) also examined quality of life domains one year after stroke onset. The sample consisted of 85 consecutive stroke survivors after their first ever stroke. The clients were examined initially during the acute phase and at three and 12 months client. Neurological damage was assessed with the Scandinavian Stroke Scale, ADL function was assessed with the Barthel Index (BI), handicap with the Rankin Scale (RS), cognition with MMSE, and the psychological evaluation completed at three months involved using the DSM III-R criteria for depression. Depression was labeled as “major” or “minor”. Minor depression was diagnosed in 40% and major depression in 8% at three months post-stroke. At 12 months, 26% of clients met criteria for minor depression and 11% for major depression. Sixty-nine percent of stroke survivors were with a significant other. The RAND 36-item Health Survey was used to measure quality of life. The results of the study showed that quality of life was decreased for clients with mild to moderate impairment at three months post-stroke. The most affected domains were physical functioning, physical role limitations, vitality, and overall health. The most significant variable associated with decreased quality of life was depression. Factors related to a decreased score of the vitality domain were depression, being

married, and age. The low score of the physical limitations domain was related to depression and being married.

Another study that examined the quality of life of stroke survivors was completed by Jaracz and Kozubski (2003). The purpose of the study was to identify variables that influence post-stroke quality of life and to describe global and domain specific quality of life in stroke survivors. The sample was made up of 72 of 180 consecutive stroke clients admitted for hemispheric, ischemic strokes. Inclusion criteria included, but were not limited to, the absence of previous psychiatric history and alcoholism. The stroke survivors were followed for six months post-stroke. The Quality of Life Index for Stroke (QLI-Stroke) was used to measure quality of life. The Scandinavian Stroke Scale (SSS) measured neurological impairment, Barthel Index for functional ADL assessment, and satisfaction with emotional support was measured using an item from the QLI-Stroke. Depression was measured with the Zung Self-Rating Depression Scale and the screen for cognitive deficits was the Short Portable Mental Status Questionnaire (SPMSQ). Depression was found to be present in 45.8% of clients, significantly higher in females than males (78.7% to 21%). Seventy percent of clients were moderately to very satisfied with emotional support. The highest scored quality of life domain was Family, and the lowest was in the Health and Functioning domain. Emotional support, depression, and functional disability were the three variables representing 38% of the variance in quality of life scores.

Everson, Roberts, Goldberg, and Kaplan (1998) examined a possible link between stroke mortality and depression. The study was a longitudinal study of

behavioral, psychological, social, and demographic variables in health and mortality. The study began in 1965 and used random sampling to represent non-institutionalized adults in Alameda County, California. A total of 6928 subjects were recruited to provide information via questionnaires on multiple variables of health history, health habits, childhood and adolescent history, social and recreational activities, and other demographic variables. The subjects were followed up with questionnaires in 1974, 1983 (50% sample), 1994, and 1995. Depressive symptoms were measured with the Human Population Laboratory Depression Scale (HPL) which assesses mood, self-concept, energy, eating and sleeping patterns, and psychomotor retardation or agitation. A total of 969 subjects (14.5% of 6928 original subjects) reported five or more depressive symptoms at their baseline. These subjects were older, more likely to have less than 12 years of education, more likely to abstain from alcohol, more likely to smoke, and more likely to have chronic hypertension and diabetes compared to those not depressed at baseline. Of the 6928 subjects, 169 stroke deaths occurred during follow up. Thirty-nine deaths occurred of the 969 (4%) depressed at baseline, and 130 deaths occurred among non-depressed subjects (2.3%). The results also showed that each one-point increase on the HPL depression scale was correlated with an 8% increase in risk of death from stroke. It was found that having five or more depressive symptoms was associated with a 54% increased risk of death from stroke. This study's results provide strong epidemiological evidence for a significant relationship between stroke mortality and the presence of depression.

In summary, there is lack of consistent results and data of studies surrounding client depression and the influence on functional outcome in rehabilitation and extended long-term quality of life. Despite variability in results, the literature has consistently shown that post-stroke depression is present in a significant percent of stroke survivors and has a negative impact on engagement in rehabilitation services and quality of life after stroke. These results demonstrate the need for improved health care professional education regarding post-stroke depression in order to improve the efficacy of rehabilitation interventions and treatment approaches, whether it is in the acute setting, rehabilitation, long-term care, or community. The product presented in Chapter III will include an educational module and intervention guideline for occupational therapists to utilize in their treatment of stroke survivors.

CHAPTER III ACTIVITIES/METHODOLOGY

Occupational therapy is the discipline that looks at the entire person and their interaction with the environment. Occupational therapists utilize their educational background and clinical experience to assess psychosocial, physical, and environmental issues impacting individuals' performance within a particular context.

Occupational therapists are life-long learners. The profession prides itself on the diversity of its clinicians and their motivation to remain up to date with information that impacts their practice area and their treatment approach with their clientele. Stroke is the largest diagnostic group seen by occupational therapists who work in the physical disabilities specialty area. The focus of acute care and rehabilitation in many settings continues to be mainly focused on physical rehabilitation versus psychosocial adjustments. Research has shown that stroke survivors have a depression prevalence of 20-60% ranging from acute care to community living.

Occupational therapists need to be aware of the impact that depression and/or poor functional outcome has on psychosocial adjustments and physical recovery in the long term. It is important to realize that earlier assessment and treatment of depression may lead to improved rehabilitation efficiency and quicker recovery, which could save money by reducing institutionalized stays and need for home care. Research findings also acknowledge implications for

treatment alterations to individualize treatment, improve treatment sessions, speed recovery, and decrease expense of hospitalization and rehabilitation stays.

For these reasons, an education module and intervention guideline was developed for occupational therapists to improve outcomes for stroke survivors, provide more efficacious occupational therapy treatment interventions, and to impact the quality of life of stroke survivors, whether chronic or long-term. Stroke survivors are living longer and requiring more services. Occupational therapy is the discipline that can best prepare stroke survivors to return to their prior living situation by facilitating psychosocial and physical adaptation to the stroke and possible new roles, as well as provide “just-right challenges” to enhance client self-concept.

Client-centered and occupation-based practice places emphasis on the client’s priorities and provides intrinsically motivating occupation-based interventions that are valuable and meaningful to the client. Preliminary research has shown that treatment of post-stroke depression improves the use of rehabilitation services, increases functional return, life satisfaction, and overall quality of life while reducing overall health care costs.

The research has also shown that stroke survivors presently do not feel adequately prepared to resume home, community, and social activities. Stroke survivors are not resuming their previous activity level, and socially isolated stroke survivors have higher rates of depression and mortality. With new awareness of stroke survivor issues, occupational therapists may choose to

address the transition to home, community reintegration and skill development earlier during acute and rehabilitation stays.

The product that is described in Chapter IV is an educational module and intervention guideline for occupational therapists to utilize in their practice. The educational module summarizes research findings found in Chapter II on the signs and symptoms of post-stroke depression, the prevalence of post-stroke depression, and other findings that may impact occupational therapy interventions and outcomes. The review of literature in Chapter II also provided research findings that focused on the many issues faced by stroke survivors with post-stroke depression and its impact on quality of life and functioning during all stages of recovery. The intervention guideline was developed as an evidence-based reference for occupational therapists to utilize in practice to address the specific problems and issues faced by stroke survivors with post-stroke depression.

CHAPTER IV PRODUCTS/RESULTS

Post-Stroke Depression

Stroke survivors are the largest diagnostic group seen by occupational therapists who work in the physical disabilities specialty area. Whether occupational therapists work in acute care or within the community, they will be providing treatment for individuals that have survived a stroke. In turn, a large percentage of these clients will face symptoms of post-stroke depression at some time during their post-stroke life. Occupational therapists can utilize their skills and background to provide treatment interventions that are intrinsically motivating and meaningful to the client. Occupational therapists strive to further their education in order to provide the most efficacious and meaningful treatment approaches and interventions.

The product presented in this chapter contains an educational module and intervention guideline for occupational therapists regarding the topic of post-stroke depression. The purpose of the product is to provide information based on the findings of multiple research studies and resources in order to promote competency and evidence based practice decisions. The intervention guideline provides examples of assessments that can be used to address post-stroke depression and quality of life in practice. The assessments are MOHO-compatible and can be adapted to multiple treatment models and theories. The product also focuses on clinicians utilizing occupation-based interventions in order to provide the client with interventions that are intrinsically motivating and also focus on performance skills.

SIGNS of POST-STROKE DEPRESSION

- Diagnostic signs/psychosocial responses may be manifested by:
 - poor motivation
 - denial
 - refusal to participate
 - expressions of hopelessness, anger, or denial.
 - erratic behavior
 - abnormal performance
 - poor recovery
 - worsening of deficits
- Behavioral changes that may be due to stroke:
 - changes in appetite, sleep, and activity level
 - vegetative signs—are sometimes the only sign of depression in stroke individuals
 - vegetative signs are seen mostly in right parasyllian strokes and affect the ability to express or understand emotion of spoken language, and are not necessarily signs of depression
- Apathy, catastrophic reactions, and hyperemotionalism have been shown to occur in stroke survivors without a diagnosis of depression.

Background Information: Post-Stroke Depression

- Depression is the most common reported psychiatric condition after stroke.
- There are no definitive diagnostic criteria for post-stroke depression. Multiple screening tools have been used. The DSM III, DSM III-R, DSM IV, Beck Depression Inventory (BDI), and Geriatric Depression Scale are some examples.
- Left front and left basal ganglia lesions were significantly more common among clients with major depression versus any other lesion location.

- Left hemispheric stroke and major depression have been found to have a higher instance of cognitive impairment.
- Post-stroke depression is difficult to diagnose due to communication difficulties, cognitive impairment, or inability express emotion, such as in aprodosia, as well as difficulty gaining an accurate pre-stroke history.
- The literature has shown that depression is present in 20-60% of stroke survivors.
- There is a misconception that depression after a stroke is a natural and expected reaction to the sudden alteration of functioning, role status, and onset of disability
- Depression rates have been found to be the highest in the acute and rehabilitation phase:
 - Acute: 45-61%
 - Rehabilitation: 20-60%
 - Community: 20-45%
- Depression rates at six months post-stroke are higher than one to three years post-stroke.
 - 6 months post-stroke: 20-60%
 - 1 year post-stroke: 14-35%
 - 2-3 years post-stroke: 20-30%
- Approximately one-third of clients that do not meet criteria of depression in the acute phase develop depression within two years post-stroke.
- Dysthymia may be more persistent than major depression.
 - Results at one year post-stroke have shown that clients with major depression improved and only one-third of clients with dysthymia improved.
- Depression and mortality have been found to be directly correlated.
 - Stroke survivors that are depressed have a three times greater chance of dying than non-depressed survivors.
- Socially isolated survivors were found to have a mortality rate of 90%.

- Stroke survivors have a significant decrease in social functioning and are unlikely to resume pre-stroke level of social participation.
- Depressed stroke survivors were found to have a decline of approximately 65% of pre-stroke social activities
- Anxiety was found to be present with depression in a majority of cases.
 - Stroke survivors with depression and anxiety were found to have poorer functional outcome, treatment response, and more psychiatric problems than clients with depression only.

Physical Disability and Post-Stroke Depression

- The presence of depression may inhibit participation in rehabilitation and delay or inhibit functional recovery, which could lead to continued or increased depression.
- Physicians are using pharmacological agents to counterbalance the negative effects of depression on functional outcome.
- *Hyper-Physical Therapy Syndrome*—stroke survivors strive to regain hand, arm, or limb functioning and return to prior level of function. The client becomes fixated and focuses all energy on improving deficits.
 - They set their goals too high and do not reach them, which leads to further feelings of failure and difficulty with adaptation to the disability status.
 - Stroke survivors with hyper-physical therapy syndrome may stay in denial for a longer period of time. Clients may be
 - Stroke survivors may be afraid to quit therapy and see therapy as the only way out. They are afraid to quit because they will have to face the reality of their situation.
 - Clients spend all of their time and energy going to therapy, in therapy, or resting after therapy, and have little energy left for living.

Intervention Information Based on Post-Stroke Depression Literature

Coping

- Stroke survivors need effective coping in order to adapt to psychosocial and physical effects of stroke.
- Stress may change over time, therefore coping mechanisms must change as well.
- Stroke survivors may enter a crisis state, which limits the effectiveness of coping strategies.
 - Clients in a crisis state may be identified as having acute post-stroke depression due to similarities in symptoms displayed, i.e., lack of motivation, poor use of coping mechanisms, and periods of mood lability.
- Stroke survivors have identified a variety of effective coping strategies which include:
 - talking with other clients, especially other stroke survivors,
 - praying
 - positive thinking
- A stroke survivor's ability to cope influences their own functional outcome.
 - Identify the client's previous methods of coping with stress:
 - Provide support
 - Establish rapport
- Non-communicative stroke survivors are more likely to feel hopeless and are less able to cope due to the difficulty expressing emotions and comprehending language

Socialization and Activity Participation

- Stroke survivors report an increase in more sedentary and isolative activities such as reading, watching television, and socialization at home
- Traveling and household activities are activities that have been identified as negatively affected.

- There has been no direct association found between social withdrawal and physical recovery.
 - Research has found that stroke survivors that require minimal assistance with ADLs ranging to independence with ADLs did not resume social activities.
- Stroke survivors with aphasia frequently experienced social isolation compared with stroke survivors without aphasia.
- Socially isolated survivors were found to have a mortality rate of 90%.
 - Stroke survivors have a significant decrease in social functioning and are unlikely to resume pre-stroke level of social participation.
 - Depressed stroke survivors were found to have a decline of approximately 65% of pre-stroke social activities
 - Stroke survivors may not feel prepared to adapt to their previous work and leisure roles at home and in the community.

Evaluation and Intervention Guidelines for Clients with Signs of Post-Stroke Depression

Occupational Therapy Intervention

- *Empathy*—Use the occupational therapy process versus a pure medical model by demonstrating care and concern for the stroke survivor and their family.
- *Client-Centeredness*—Occupational therapists (OTs) collaborate with clients in the therapeutic process.
- *Therapy Focus*—OTs focus on client strengths, yet considering performance skill deficits—the stroke survivor may assume that the goals of therapy are to restore their lost function.
- *Occupation-Based Practice*—Using occupational activities in treatment creates the highest level of motivation, self-gratification, and has the most meaning to clientele, i.e., stroke survivors with depression.
- *Models of Practice*—Choose a model of practice to base treatment decisions on, i.e., selection of evaluations/assessments, treatment planning, choosing interventions, and goal development. The Model of Human Occupation

(MOHO) is model that is inclusive and focuses on the entire person, with emphasis on three subsystems: volitions (values and interests), habituation (patterns and routines), and performance. MOHO also focuses on environment and context with regard to occupational and role performance.

- *Family Involvement*—Involving families in therapy, during the evaluation, and treatment sessions may increase the amount of time up front, but contributes to a better client outcome by improving motivation and providing a therapeutic learning environment for clients and families.
- *Assessment/Evaluation*—OTs should utilize multiple assessments and evaluations that are conducive the facility’s model of practice.
- Therapeutic intervention should address the following:
 - Provide opportunities for mastery and control.
 - Decrease emotional distress.
 - Promote psychological competence.
 - Help maintain and/or reestablish an active support network. Support is best provided in the form of client and family education.
- Provide clients with an opportunity to identify their strengths and limitations
 - Meet clients at their own level
 - Example: Therapists need to monitor their use of medical language and body language. Therapists must communicate to the client that they want to learn about the client’s life, concerns, wants and needs.
 - For a severely depressed stroke survivor, this may require limiting contacts to short, frequent interactions
- Allow opportunities for the client to express their perceptions of the stroke and its prognosis.
 - Example: When a client is approached to participate in therapy, a therapist should read the client for non-verbal and verbal communication that may dictate signs of frustration, anger, sadness, or detachment. A situation such as this would provide an opportunity for

the therapist to facilitate the client to express their feelings and frustrations regarding the stroke, residual deficits, as well as future.

- Focus on ability, not disability:
 - Therapeutic activities and interventions should promote feelings of competence.
 - Set them up for success: clients with post-stroke depression may expect to fail; they avoid activities and have decreased performance ability.
 - Example: Continued emphasis of ADL's each a.m. is not effective to a client who needs maximum assistance and continues to display feelings of frustration during therapy. Schedule therapy later in the day and focus on other areas of occupation that the client has verbalized as having meaning and value.
- Allow stroke survivors to help others.
 - Clients with post-stroke depression may feel unmotivated to care for themselves.
 - Focusing on doing and giving may offer an opportunity to reengage in meaningful activities that contribute to nurturing relationships.
 - Example: A client may cook dinner every Sunday for her family. Have the client prepare a meal and have family members present in order to provide a more motivating and meaningful experience.
- Provide group treatment sessions with stroke survivors with and without depression.
 - Group activities with other stroke survivors provide clients with an opportunity to share experiences, help others, and offer support in a safe environment.
 - Example: Therapists can organize a cooking group of 4-5 clients that have voiced cooking and meal preparation as a priority. The activity is inclusive of clients with aphasia. The focus is to develop camaraderie between clients, by having them help and support each other. Tasks

can be divided among clients, and the therapist can facilitate conversation between clients.

- OTs can suggest environmental modifications to allow increased client control and opportunities for social interaction via group activities.
- OT interventions should focus on coping and adapting to role and occupational changes, especially with clients with post-stroke depression.
 - Participation may be hindered by depression, therefore interventions should be purposeful, and occupation based if possible in order for the client to be intrinsically motivated and to promote satisfaction and self-concept.

Occupational Therapy Evaluations Applicable for Clients with Post-Stroke Depression

- *Depression Screens*
 - Geriatric Depression Scale (GDS)
 - Beck Depression Inventory (BDI)
 - Zung Self-Rating Depression Scale
 - Hamilton Depression Rating Scale (HDRS)

- *Quality of Life Assessments*
 - RAND 36-item Health Survey
 - Quality of Life Index for Stroke (QLI-Stroke)
 - Reintegration to Normal Living Index (RNL Index)
 - Medical Outcomes 36-item Short-Form Health Survey (SF-36)

- *MOHO-Based and MOHO-Compatible Assessments*
 - Occupational Performance History Interview-Second Version (OPHI-II)
 - Interest Checklist
 - Occupational Self-Assessment (OSA)
 - Role Checklist

- Worker-Role Interview (WRI)
- Assessment of Occupational Functioning (AOF)—
Collaborative Version
- Model of Human Occupation Screening Tool
- Occupational Circumstances Assessment-Interview and Rating
Scale (OCAIRS)
- Canadian Occupational Performance Measure
- References available from AOTA:
 - Evidence-Based Rehabilitation: A Guide to Practice (2002) by
Mary Law, PhD, OT(C), Editor
 - Infusing Occupation Into Practice, Second Edition (2000) by
Patricia A. Crist, PhD, OTR/L, FAOTA, Charlotte Brasic
Royeen, PhD, OTR, FAOTA, Janette Schkade, PhD, OTR,
FAOTA, Editors
 - Occupational Therapy Assessment Tools: An Annotated Index,
Second Edition (1996) by Ina Elfant Asher, MS, OTR/L

Occupation-Based Practice

- After a stroke, survivors struggle to cope with their alteration in physical performance and abilities to carry out their everyday activities, occupations, and life roles.
- Occupations are what define an individual and give life meaning.
- Occupational therapists should utilize occupation-based interventions in order to promote the greatest engagement and motivation by the client.
 - Occupations are intrinsically motivating to the client.
 - Occupation-based interventions should be utilized with clients with post-stroke depression in order to promote engagement in activity, increase self-esteem and self-concept, and improve motivation and function.

- Purposeful activities involve active participation which integrates physical, emotional, and cognitive components and combine with an individual's personal meanings to form that individual's occupations.
- Please see Appendix A for examples of common occupation-based activities.
- Please see Appendix B for types of occupational therapy interventions.

Psychosocial Issues in Occupational Therapy Treatment Settings

Psychosocial Issues in Acute Care

- OTs see clients almost immediately after a stroke.
 - Clients may be confused and have varying levels of consciousness and insight regarding their situation.
 - Due to the potentially lethal event of a stroke, survivors may experience a reaction similar to that of a near-death experience; enter a state of crisis or shock.
- Stroke survivors immediately experience a role shift—the person now becomes a patient.
- Post-stroke depression rates in the acute setting range from 45-60%.
 - Depression may appear in the form of social withdrawal or expressions of hopelessness and self-hatred.
- Hospital settings may offer a sterile and a psychologically unsupportive environment due to the focus on the medical model.
- Clients may not be asked how they feel about their stroke, occupational and role concerns, and functional limitations.
- Clients lose control of their environment and schedule.
- Stroke survivors focus more on regaining lost physical function than accepting change and deficits.

Psychosocial Issues in Inpatient Rehabilitation

- Stroke survivors with post-stroke depression may have experience difficulty meeting the demands of a rehabilitation setting.
- Many clients will be asked to complete tasks and then may fail.

- Clients may become embarrassed and frustrated
- They may feel traumatized at the continued reinforcement of their new limitations
 - Therapist intervention at this point is crucial to the client's continuing motivation.
 - Therapists need to be aware of how much structure they provide, how hard they push the clients, and provide opportunities for clients to vent their feelings and emotional reactions.
- Clients with post-stroke depression may refuse participation because they do not feel it will help.
 - They find it difficult to understand the purpose of therapy interventions that seem tedious or un motivating.
 - ADL dependence has been associated with post-stroke depression, and post-stroke depression has been associated with ADL dependence.
- The client's self-concept is influenced by stroke-related deficits as well as their progress in therapy.
 - A client with post-stroke depression may have terrible self-concept and self-confidence and will present as worthless, hopeless, and apathetic toward therapy.
 - Clients with post-stroke depression may also make self-deprecating remarks.
 - The client, as well as their family, may feel that progress is inadequate and that the client has not put forth enough effort, or that the therapist is at fault.
- Continuously provide clients with information and education regarding their stroke, deficits, and the complexity of recovery.
- Clients with post-stroke depression will have a more difficulty time adapting to changes in their roles and occupational functioning.
 - Clients may be in denial
 - Clients may be unable to utilize coping mechanisms due to depression.

- Clients may have poor insight into deficits and are unable to visualize their new self at home.
 - Therapists need to provide statements of hope and encouragement.
- Therapists should routinely address adaptive coping strategies which may include:
 - Maintaining spirituality
 - Relationships with others
 - Support to continue community independence
 - Opportunities to share their feelings of frustration
- Therapeutic groups can be used in order to promote peer relationships and shared experiences
 - In addition to learning specific skills, the client is beginning to develop a new identity—a person with a disability.
 - Clients begin adjusting to their new sense of self and the culture of individuals with disabilities.
 - Clients who have more abilities than others have the opportunity to help them.

Psychosocial Issues in Subacute Settings or Nursing Home Care

- Clients who do not meet the requirements for admission to an inpatient rehabilitation program and are not able to return home may become residents of a subacute facility.
- Many stroke survivors with post-stroke depression will be admitted to a subacute and/or nursing home facility.
- The incidence of depression is known to be higher in institutionalized elderly.
 - The facility can represent disability, loss, and abandonment.
 - Clients are forced to adapt to a new environment in which self-control and privacy are diminished.
- Placement may be temporary or permanent; therefore treatment varies from substantial to sporadic.

- Social context of nursing homes includes paid workers, disabled peers, and periodic visits from family and friends.
- Cultural values may influence the client's response and ability to adapt.
- Occupational therapists may be able to facilitate improvements in psychosocial adjustment versus physical functioning by focusing on coping and adaptation.
 - Focus is on individual clients' interests and needs
 - Previously successful coping and adjustment strategies may offer the best indications of which strategies will be helpful in the future.
 - Offer activities with the just right challenge to improve self-concept and relative mastery over tasks.
 - Offer opportunities for self-expression, creativity, and social interaction to promote increased self-esteem and efficacy.
 - Use groups to promote socialization and provide a non-threatening environment to try new skills.

Psychosocial Issues in Home Care

- Once stroke survivors return home, their interactions with the environment are fundamental to their re-adjustment.
- The first few weeks after discharge may be the most difficult for stroke survivors and their caregivers.
- Therapy takes place in the client's own context, which allows for the greatest adaptation and problem solving by the therapist and client.
- Self-concept is impacted more and more each day, and stroke survivors begin to realize the new reality of their situation once they are at home.
- Stroke survivors that are isolated and less ADL independence are more likely to develop or have worsening of post-stroke depression.
- Occupational therapists should focus on community re-integration, as stroke survivors often experience embarrassment in public.
- Community involvement has been identified as having the strongest correlation with quality of life post-stroke.

- Socialization and community reintegration are integral for combating post-stroke depression and developing a new post-stroke lifestyle.
- Clients often become embarrassed about drooling, incontinence, and flaccid or distorted extremities.
- The American society is preoccupied with appearances, which makes societal reactions to a stroke survivor's new disability even more embarrassing.
- Clients with post-stroke depression also are less likely to perform their past occupational and role duties.
 - Expectations of others may strongly influence role performance.
 - Occupational therapists can assist clients in identifying new possible roles according to their interests, abilities, and deficits.
 - Clients with post-stroke depression are less likely to participate in life roles.
 - Most commonly lost occupations and roles include:
 - ◆ Major organizing roles, such as employee
 - ◆ Hobbyist
 - ◆ Friend
 - ◆ IADLs
 - ◆ Travel
 - ◆ Basic ADLs
 - ◆ Caregiver
- Clients' values influence their ability to leave home or resume social participation.
 - Occupational therapists can assist clients in the pursuit of social activities within their social context.
 - Therapists should not focus on duplicating the hospital or rehabilitation environment, this may be counterproductive to community reintegration.

- Therapy focus is on psychosocial adjustment, community and societal reintegration, developing a post-stroke lifestyle, and acknowledgement of residual deficits without removing the hope of functional return.
- Clients may feel overwhelmed with their new reality.
 - Clients with post-stroke depression have little ability to utilize previous effective coping mechanisms.
 - Occupational therapists can facilitate the client to return to a schedule of activities that encompasses the client's desired roles and can maximize activity participation and function as well as help fight depression.
 - The amount of support and structure can be modified, and is a product of the interaction of the person, environment, and the occupation.
- Incorporate family and caregivers as part of the treatment team.
 - Keep the family up to date on treatment goals and interventions that were successful and unsuccessful.
 - Educate the family and caregivers on challenges and expectations of a post-stroke lifestyle.
- When clients continue to ruminate on lost deficits or abilities, an occupational therapist should utilize their judgment and possibly allow them to fail.
 - When clients fail at self-directed activities, they may be better able to tolerate the failure, compared to activities selected by external sources.

Psychosocial Issues in the Community

- Occupational therapists may work with stroke survivors in senior centers, senior residences, and adult day health centers.
- Senior-center programs may prevent and combat depression in stroke survivors.
 - Programs should include adequate, varied, and meaningful stimulation and social interactions.

- Group activities should focus on client strengths, their individual needs, and recognize their own roles in health maintenance.
- Groups should include a discussion of health-related topics as well as movement activities.

The information included in this chapter was combined and selected from the resources reviewed in Chapter I and Chapter II. This chapter provided background information on post-stroke depression, occupational therapy practice guidelines, and psychosocial issues in a variety of treatment settings. Examples of MOHO compatible occupational therapy evaluations were included, as well as depression screens and quality of life assessments. These are only a few applicable evaluations, and are to serve as a starting point for clinicians. A few references from AOTA were cited in order to assist therapists to obtain evaluation materials.

The information is relevant for occupational therapy students, clinicians, and faculty who are interested in physical disabilities and the stroke survivor population. The information presented in this chapter provides interested individuals with a greater understanding of the psychosocial issues faced by stroke survivors. The hope is that students, clinicians and faculty will understand the importance of modifying their treatment process in order to provide efficacious and evidence-based therapy interventions to the strokes survivor population and be able to apply and integrate this information into their practice.

CHAPTER V SUMMARY/CONCLUSIONS

This scholarly project sought to investigate the impact of post-stroke depression on stroke-survivors' functional outcome and quality of life. The methods involved in this scholarly project included an extensive literature review of recently published research and textbooks on the topic of post-stroke depression and the rehabilitation continuum. The literature revealed that there was little definitive information published regarding post-stroke depression that was clinically useful for occupational therapists to make their interventions meaningful. However, the evidence contributed to a greater understanding of the frequency of depression and quality of life issues post-stroke. The results of the literature have shown that post-stroke depression is a present factor facing a large percentage of stroke survivors.

Stroke is the most common condition seen by the physical disabilities specialty practice area of occupational therapy. The signs and symptoms of post-stroke depression impact participation in rehabilitation services, including occupational therapy outcomes. Post stroke depression can lead to greater dependence with daily activities as well as a decreased quality of life. With the focus of occupational therapy surrounding meaningful interventions, more clinically useful information on post-stroke depression is needed in order to address both the acute and longer term needs of this population, including quality of life. Occupational therapists have the underlying educational background and

clinical skills to develop and alter their treatment approach to combat post-stroke depression and increase the productivity and success of stroke survivors.

The product that was described in Chapter IV offers an evidence-based educational module and intervention guideline for occupational therapists. The educational module focuses on signs and symptoms of post-stroke depression, prevalence, issues faced by stroke survivors, and treatment issues related to post-stroke depression. The product also contains an intervention guideline which includes evaluations and assessments that are appropriate for occupational therapists to utilize with stroke survivors to assess quality of life and screen for symptoms of post-stroke depression. The intervention guideline also aids therapists by identifying psychosocial issues that may be faced by stroke survivors in a variety of treatment settings. The guideline offers suggestions for modifying treatment approaches, such as providing client-centered treatment and occupation-based interventions in order to increase motivation, promote psychosocial adaptation, and prevent or decrease the symptoms of post-stroke depression.

There is a paucity of research studies and resources published on the topic of post-stroke depression and its application to the rehabilitation setting, which is an identified limitation of the product. This scholarly project is intended to provide foundational information on post-stroke depression and create an interest for future research studies. There is a need for further research surrounding the topic of post-stroke depression and its impact on the rehabilitation process, functional return, and quality of life in order for occupational therapists to

maintain competency and current on the most effective, evidence-based treatment approaches and interventions.

This product was developed for use by occupational therapists who work with the stroke survivor population as well as UND students and faculty that are interested in learning about post-stroke depression and how it relates to occupational therapy practice. An intended outcome of this scholarly project is to provide an evidence-based summary of recent literature on post-stroke depression in order to expand clinician, student, and faculty knowledge of the impact of stroke on survivors and the importance of addressing psychosocial issues in occupational therapy rehabilitation.

APPENDIX A

Common Occupations	Materials and Activities
Computer work	<i>Materials:</i> Donated or facility discarded computer and equipment <i>Activities:</i> Perform work tasks, send e-mails/memos, search on Internet, shop on Internet
Mechanic Work	<i>Materials:</i> Staff-donated equipment, client's own tools, donated car <i>Activities:</i> Perform work tasks, change oil, change/check tires, wash/wax car
Fishing	<i>Materials:</i> Donated fishing pole, tackle box, line and lures, donated tools <i>Activities:</i> Make lures, practice casting, reeling, and "fishing" in the clinic. Go on an Outing
Yardwork/Gardening	<i>Materials:</i> Donated supplies/tools, indoor and outdoor plants <i>Activities:</i> Rake, sweep, trim hedges/plants, water and prune plants, pull weeds, care for client's garden/yard on home visit.
Housework	<i>Materials:</i> Donated laundry basket and materials, vacuum, clinic kitchen <i>Activities:</i> Do loads of laundry, fold clothes, vacuum, dust, prepare and clean-up after a meal.
Leisure/Sports Activities	<i>Materials:</i> Donated horseshow set, bocce ball, golf clubs, basketball, etc. <i>Activities:</i> Practice tossing, throwing, putting, etc., visit a park
Playing with and caring for children	<i>Materials:</i> Toys, books, games, kit of donated diapers, bottles, baby food, etc.; doll or client's child/children <i>Activities:</i> Involve child or children in therapy sessions, practice on a doll, practice skills during a home visit, volunteering with a family member or friend
Needlecraft	<i>Materials:</i> Donated supplies, client's supplies, sample projects <i>Activities:</i> Make an item for a family member or friend, make an item for an upcoming Holiday
Talking on the phone	<i>Materials:</i> Donated samples of phones with various features, phone book <i>Activities:</i> Call family, friends, community agencies, clinic/hospital, order take-out food
Entertaining	<i>Materials:</i> Phone, computer to e-mail or create invitations, art/craft materials, clinic kitchen or client's kitchen, cookbook, recipe ingredients <i>Activities:</i> Invite client's friends/family to participate in therapy, client chooses an activity and plans accordingly, call or e-mail guests, make refreshments
Reading/Writing	<i>Materials:</i> Writing utensils and adaptations/devices, donated books or magazines, large-print books, books on tape, writing guide, wide and thick lined paper <i>Activities:</i> Go to gift shop or news stand to purchase book/newspaper, practice writing letters and using various writing utensils, pay bills, keep a journal.
Caring for Pets	<i>Materials:</i> Donated pet supplies. Bring client's pet to a designated outside location. <i>Activities:</i> Practice feeding, washing, walking, petting, playing with, and cleaning up after the pet.

Adapted from: Deshaies, L.D., Bauer, E.R., & Berro, M. (2001). Occupation-Based Treatment in Physical Disabilities Rehabilitation. *OT Practice, 13-17.*

APPENDIX B

Types of Occupational Therapy Interventions (AOTA, 2002)

- **Preparatory:** Prepares clients for occupational performance. These interventions are used in preparation for purposeful and occupation-based activities.

Examples:

- Relaxation
 - Journaling
 - Exercise
 - Retrograde massage
 - Read
- **Purposeful:** Allows clients to participate in goal-directed activities within a therapeutically designed context that leads to an occupation-based activity.

Examples:

- Role play social scenarios that may be anxiety-producing or threatening
 - Generate a list of coping skills and share with therapist or group
 - Identify possibilities for new social activities
 - Use therapeutic activity to express emotions
 - Practice a leisure activity that the client performs with friends or family
- **Occupation-Based Activity:** This type of intervention allows clients to engage in their own occupations that are a part of their own context and are congruent with their treatment goals.

Examples:

- Engage in social interactions with individuals at the grocery store, post office, etc.
- Participate in educational opportunities within the community or at home
- Participate in new or old leisure activities at home or within the community.
- Join a local health club
- Volunteer at the hospital, humane society, etc.
- Carry out job duties and make modifications when necessary to achieve optimal performance.
- Participate in social groups within the community

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