Return To Work Following Stroke: A Literature Review

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Incidence and Impact of Stroke

Stroke is a devastating disease and a leading cause of disability and death in Canada (HSFO, 2003). This holds true in spite of the advances that have been made in stroke treatment and care. Each year, 50,000 Canadians will experience a stroke, equating to a stroke occurring every 10 minutes. Of those who suffer a stroke, 20% will die within 3 months, 30% will die within a year, 25% will have a moderate to severe disability and 10% will require a level of care that necessitates admission to a long term care home (HSFO, 2003). The impact of stroke on our society is substantial and is expected to increase as the population ages (HSFO, 2003). Annual costs to the Canadian economy are estimated at $2.7 billion.

Another reality is the age at which stroke is occurring. Being young does not make one immune from stroke and currently, 10% of strokes occur in those under the age of 50 (HSFO, 2003). This number is expected to increase as unhealthy eating and living habits accelerate the impact of stroke risk factors. For example, between 1994 and 2005, among those 35 to 49 years of age, the prevalence of high blood pressure increased 127%, diabetes by 64% and obesity by 20% (HSFO, 2010).

For those who survive a stroke, re-gaining their ability to participate in previous life roles has a direct impact on their perceived quality of life (Vestling et al, 2003). For most stroke survivors, moving from acute care to inpatient rehabilitation to community rehabilitation demonstrates progression in their recovery and increases their hope for the future. Community re-engagement is the final stage within the continuum of stroke care. It focuses on those activities that will maximize the probability of stroke survivors feeling empowered and achieving their full rehabilitation potential (HSFO, 2003). One component of community re-engagement focuses on life roles and the stroke survivor's ability to fulfill these roles to their optimum ability. For many, this includes returning to work, especially with the increased incidence of stroke within younger age groups.

The Value of Work

Employment is one of the most important social roles that a person fulfills and is a significant component of everyday life. Having a job presents visible evidence to society that a person has value (Medin et al, 2006; Treger et al, 2007). Work can add a sense of belonging and physical wellbeing and is important to developing and maintaining a person's identity (Corr & Wilmer, 2003; Gilworth et al,2009; Medin et al, 2006; Vestling et al, 2005). Products of work include the ability to make social contact and to have status and structure to one's life (Corr & Wilmer, 2003).

For stroke survivors, returning to work provides a boost in confidence and self esteem. This milestone in their rehabilitation and recovery provides evidence that progress is being achieved and is the final hurdle to getting their life back (Corr & Wilmer, 2003; Japp, 2005). Individuals who return to work after

stroke report significantly higher subjective well-being and life satisfaction (Gilworth et al, 2009; Hillman & Chapparo, 2002; Vestling et al, 2003). The ability to return to work provides the opportunity to move from dependence to economic freedom (Corr & Wilmer, 2003). It has been reported that returning to work at the earliest possible opportunity can be one of the most therapeutic steps in recovery. Individuals who have made a rapid return to work express the benefits of work and the importance of work in their lives.

Work loss is one of the most significant problems patients and their families face following stroke. Work loss results in an overall decrease in quality of life and contributes to financial problems, limitations in leisure and holiday activities, social isolation, and reduced self-efficacy (Wilz & Soellner, 2009). Not working has substantial impacts on one's overall health, and has been found to be a greater risk to health than heart disease and to have an effect similar to smoking ten packs of cigarettes per day (Radford & Walker, 2008).

Observational studies suggest that while many stroke survivors may be capable of working, a substantial proportion do not (Vestling et al, 2003). Rehabilitative medicine has achieved only limited success supporting return to work (Giaquinto & Ring, 2007). Rehabilitation is perceived by many to be aimed at restoring function in activities of daily living and return to work is often overlooked (Medin et al, 2006, Treger et al, 2007). In an international review of 20 studies, it was determined that return-to-work rates after stroke ranged from 7% to 84% (Saeki, 2000).

Barriers to Returning to Work

Considerable work has been done to identify and understand factors that have a negative impact on return to work for stroke survivors. These factors are varied and include:

- impact of the stroke and residual deficits,
- the approach used,
- employer and work environment characteristics, and
- external factors.

Stroke can lead to a wide range of impairments, some of which can be subtle and not well understood within the work environment (Lock et al, 2005). Neurological deficit has a significant impact on the possibility of returning to work (Treger et al, 2007). Overall stroke severity, as determined through the use of common clinical measures, has been shown to be the most consistent predictive factor for return to work (Treger et al, 2007). Physical ability is also a critical factor. Although, side and location of the stroke have been shown to have limited impact (Lindstrom et al, 2009; Treger et al, 2007; Wozniak et al, 1999).

Persistent symptoms that can impact the ability to return to work include headaches, irritability, and impaired ability to concentrate or losing train of thought (Gilworth et al, 2009). Subtle cognitive deficits, such as deficits in working memory, mental speed and flexibility often go unnoticed but adversely affect

return to work (Treger et al, 2007). In addition, fatigue and memory disturbances often worsen with the physical or mental effort which is required in the workplace. Chronic fatigue is a common experience post-stroke and may result in a stroke survivor determining that work is too demanding (Corr & Wilmer, 2003). Post stroke depression is associated with both a bad general outcome and absence of return to work (Alaszewski et al, 2007). Agnosia (cognitive disorders including visual inattention) and apraxia (loss of ability to carry out familiar purposeful tasks) have been found to be significant negative factors (Saeki, 2000). In many work situations, the individual must be able to receive, remember, sort and process information quickly and simultaneously and to make adequate decisions. In addition, lack of concentration, speech impediments, or inability to multi-task frequently interfere with successful return to work (Alaszewski et al, 2007).

Medin et al (2006) identified three themes that covered the main barriers of successful return to work: the process, the individual and level of social support. The lack of individually designed rehabilitation programmes, that include return to work as a goal, is apparent (Lindstrom et al, 2009). As well, the absence of clear guidance about when to return and how to achieve this has left some stroke survivors in limbo (Gilworth et al, 2009). For others, the process is haphazard and not well supported. This, along with, uncertainty about timing of return to work and worries about inability to cope with persistent symptoms has impaired the return to work process (Gilworth et al, 2009).

For the stroke survivor, their personality and view of life (optimism vs. pessimism) can influence vocational outcomes (Hofgren et al, 2007). For some individuals who had prior health problems, adjustment to their altered functional status acted as a barrier to returning to work (Alaszewski et al, 2007). Some stroke survivors, who did not experience a successful return to work, held the view that information and support were not forthcoming and believed that not all possibilities or alternatives had been explored (Gilworth et al, 2009). Individuals who experience fatigue, lack of ability to concentrate and/or depression, identified the need for more information about the consequences of these cognitive deficits. This would have enabled them to return to work feeling better informed and would have diminished their fear of failure. Not having someone to talk to about the transition from rehabilitation to independence resulted in a negative outcome (Gilworth et al, 2009). Finally, apprehension about the process of return to work was more evident after a longer period of absence.

Support from employers and characteristics within the work environment have been found to have a significant impact on stroke survivors returning to work. It has been found that many employers do not fully understand the effects of stroke nor are they prepared to be flexible in supporting stroke survivors to return to work (Corr & Wilmer, 2003). Stroke survivors have identified that employers' negative attitudes, inflexibility and failure to implement adaptations to their work role, hours or equipment are perceived as barriers (Lock et al, 2005). This was most evident when supervisors lacked confidence in the rehabilitation and return to work process. In addition, an unstable work environment characterized by change and downsizing was an obstacle. Factors, such as the character of the work and the adaptability of the individual workplace, influence return to work, with white-collar workers being more likely to do so successfully (Alaszewski et al, 2007). Stroke survivor's perceptions of the work environment, especially colleagues and managers' understanding of their situation are important.

Return to work was difficult when co-workers and managers were perceived to not acknowledge their situation and to not be supportive (Alaszewski et al, 2007).

Finally, there are factors limiting return to work that are external to the stroke survivor, the approach used or their workplace. These include:

- architectural barriers, especially for stroke survivors with hemiplegia,
- lack of suitable transportation,
- poor local economy, with high numbers of unemployed, and
- stereotypes against disabled persons, such as being unprofessional, habitually absent from work and difficult to dismiss (Busch et al, 2009; Treger et al, 2007).

Unfortunately, mitigating or minimizing some of these factors requires considerable effort, while others are beyond our control.

Enablers for Successful Return to Work

The literature identifies several factors that contribute to a successful return to work for stroke survivors. Overall, a rehabilitation culture which encourages early return to work, even if recovery is still ongoing, needs to be promoted. Stroke survivors need to be fully engaged in the return to work process and in the decisions that are made about their working life (Gilworth et al, 2009).

The attitude and motivation of the stroke survivor themselves is key. A positive attitude, self confidence, determination, assertiveness, and motivation are all important (Lindstrom et al, 2009; Radford & Walker, 2008). Alaszewski et al (2007) found, in their study, that some participants had developed a resilient approach to illness. They recalled the ways in the past that they had dealt with challenges to their well-being and drew from these strategies again following stroke. For these individuals, returning to work had a special significance. It was a way of showing that they were progressing and returning to pre-stroke normalcy. They were able to take control of their situation, were able to discuss how to facilitate their return to work, and were able to find new strategies when a work trial was not successful. There is evidence that return to work is influenced by individuals' perceived self-efficacy and support from family (Busch et al, 2009). Family members are in a position to be a prime source of support and, in doing so, can enhance the motivation and determination demonstrated by the stroke survivor.

Obviously, the residual deficits from the stroke have an impact. Preserved cognitive capacity was been found by some authors to be the best predictor of returning to work (Treger et al, 2007; Vestling et al, 2003; Wozniak et al, 1999). The ability to perform activities of daily living, as measured by the Barthel Index, is consistently associated with successful return to work after stroke. Wilz and Soellner (2009) found that the individual's perceived functional ability could be considered to be the most important predictor.

Job characteristics are an important predictor of successful return to work. Relatively inexpensive and simple interventions have had a significant impact on the transition back to work for some people, such as phased return to work and flexible working hours. Medin et al (2006) found that a stable work environment that encouraged the individual and made them feel safe and secure is important. This allowed return to work to be a gradual process in which the stroke survivor increased their work ability and workload incrementally (Gilworth et al, 2009). People with higher incomes, more education and more skilled forms of employment have a greater probability of returning to work after a stroke (Corr & Wilmer, 2003; Lindstrom et al, 2009). Blue-collar workers tend to return to work earlier than white-collar workers, but over a longer time period, white-collar workers are more likely to experience success (Alaszewski et al, 2007; Treger et al, 2007; Vestling et al, 2003; Wozniak et al, 1999). The availability of alternative jobs and/or education and re-training also has an impact (Locke et al, 2005). Support from co-workers who expressed understanding and an encouraging attitude have also found to be beneficial (Alaszewski et al, 2007; Corr & Wilmer, 2003).

Liaison between rehabilitation professionals and employers is considered an important factor in enabling access to appropriate services and an eventual successful return to work (Alaszewski et al, 2007; Lock et al, 2005). This relationship enhanced employers' willingness to recognize complex and hidden impairments post stroke such as fatigue and cognitive problems , and to provide workplace accommodations (Alaszewski et al, 2007; Gilworth et al, 2009).

In a study by Corr & Wilmer (2003), three key factors were identified as impacting successful return to work following stroke:

1. motivation to return to work or reasons why returning to work was an important goal for them,
2. return to work experience itself which was impacted by the attitudes of their employer and fellow employees, and
3. support in returning to work.

The type of support that stroke survivors have identified they are seeking includes general advice, specific skill development if needed, support for a gradual return to work and longer follow up support in the workplace (Corr & Wilmer, 2003; Lindstrom et al, 2009).

Supporting Return to Work

Vocational rehabilitation is a supportive stepping stone which prepares the stroke survivor to enter or return to employment (Japp, 2005). Rehabilitation professionals need to be aware of the importance of employment to good health and are in a unique position to facilitate the return to work process (Trigger et al, 2007). They need to empower the stroke survivor and enhance their ability to create solutions to problems that arise (Medin et al, 2006). Evidence suggests that vocational rehabilitation interventions need to be targeted early (Radford & Walker, 2008). It may be initiated before the individual leaves an acute stroke unit, and certainly before discharge from community stroke rehabilitation services.

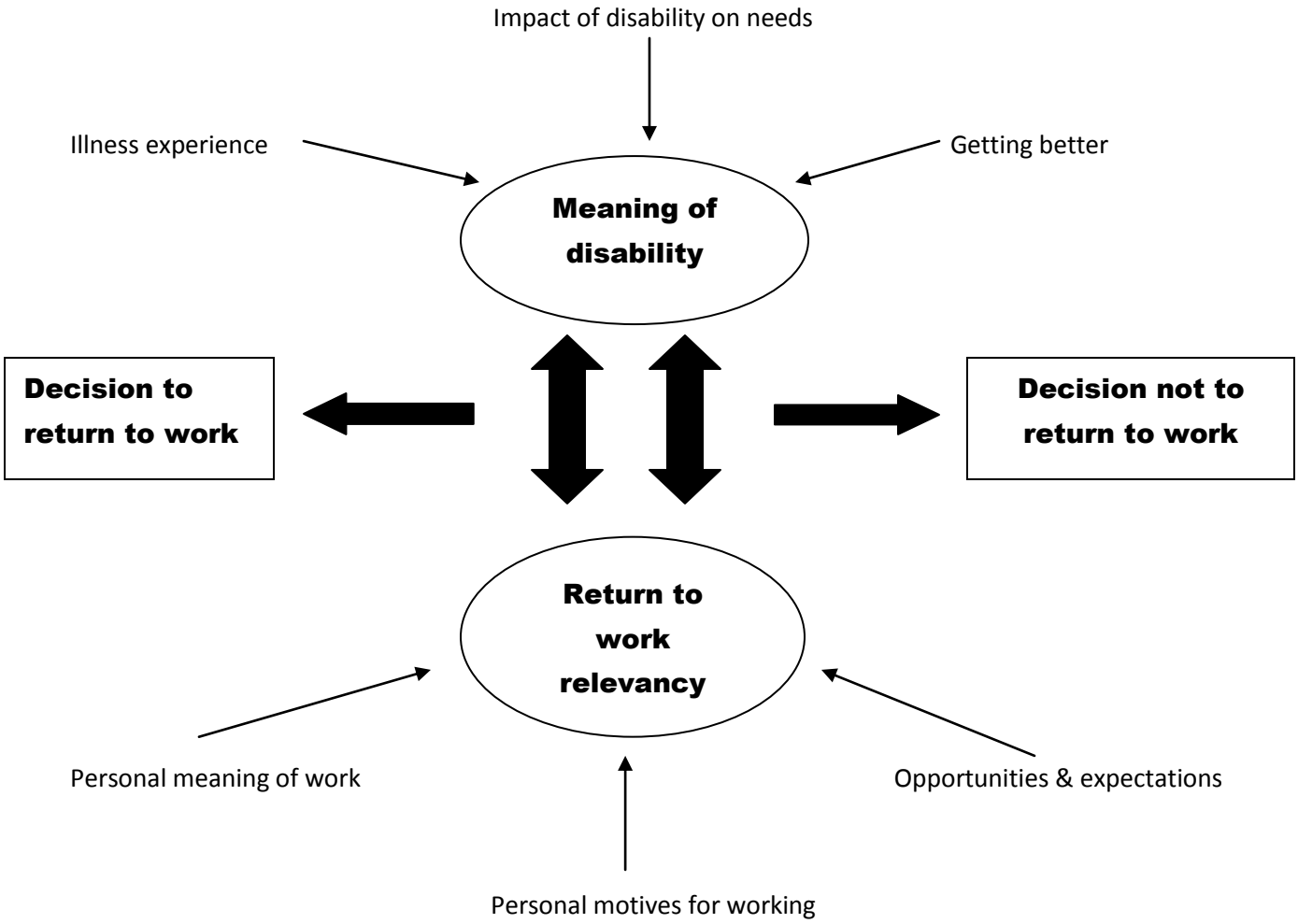
Successful return to work after stroke requires an inter-professional approach and is unique for each person (Giaquinto & Ring, 2007; Saeki, 2000). Components of a successful return to work strategy include clear vocational goal setting, addressing biological, psychosocial and social issues, and an individual approach (Radford & Walker, 2008).

Vocational assessment determines whether the individual has the capacity to return to work. It includes identifying aptitudes and workplace competencies that will determine whether the stroke survivor can return to their former job or require an altered work position or new position (Japp, 2005). Research by Ownsworth & Shum (2008) identified the need to routinely assess executive functions following stroke to assist in identifying potential barriers to participating in productive activities and to inform rehabilitation planning. These executive functions include the capacity to form a plan of action, initiate behaviour, think flexibly, and solve problems and, the ability to self-monitor and self-regulate their behaviour in any given environment.

Rehabilitation is designed to enhance the individual's skills, thereby maximizing his/her potential to return successfully to work (Alaszewski et al, 2007). Consideration must be given to the factors influencing vocational outcome after stroke when targeting return to work interventions (Busch et al, 2009; Vestling et al, 2003). Any return to work program should enable the development of skills, enable opportunities for retraining and promote links to employers (Corr & Wilmer, 2003). Vocational rehabilitation should provide gradual exposure to increasingly complex work tasks at a pace that enables the stroke survivor to maximize their occupational potential. In the process, it allows the health care professional to gain insight into any difficulties while providing the support and encouragement needed to adapt (Japp, 2005).

Return to work is a complex process that requires a broad understanding of all relevant factors (Shaw et al, 2002). A better understanding of the variations in return to work is achieved by being aware of the subjective perceptions of the meaning of disability and the relevancy of return to work. In contemplating a return to work, stroke survivors will consider these within the context of their current situation (Shaw et al, 2002).

According to Shaw et al (2002), the "meaning of disability" is determined by the individual in considering their beliefs and perceptions of how their impairments impact their current and future abilities to engage in activities. This process results in a significant variation in return to work experiences. In considering their illness experience, reactions to their disability are derived from previous illness experiences, their illness beliefs and pre-stroke perceptions of self. Consideration is given to the stigma associated with not working, response from others who question the validity of the disability, and the process of having their disability determined by the medical and insurance systems. The impact of the disability is identified through the losses they experience on a daily basis in meeting their basic needs. Through the process of getting better, stroke survivors are able to understand their prognosis and their capacity for working. Getting better includes many strategies: gaining new information, trialling various recovery strategies, using these strategies to develop new work skills and minimizing disabilities, determining physical, mental and work capacities, and using available supports.



Shaw, Lynn, Segal, Ruth, Polatajkos, Helen, & Harburn, Kare. (2002). Understanding return to work behaviours: promoting the importance of individual perceptions in the study of return to work. *Disability and Rehabilitation, 24(4), 185-195.*

"Return to work relevancy" is determined by reflecting on the personal meaning of work and their motives for working, and by considering opportunities for work and workplace expectations. The meaning of work is based on their sense of identity with work, work ethic, emotional attachment to work, and by family/society's views of work values. This helps them to understand the personal impact of not returning to work. Personal motives for working include the meaning and importance of work to the individual, financial motives, and goals related to personal growth. Finally, stroke survivors consider a number of factors as being either relevant or not relevant to their return to work, including available opportunities, workplace expectations and any workplace concerns they had prior to their stroke (Shaw et al, 2002).

In their clinical practice guideline, “Management of Adult Stroke Rehabilitation Care”, Duncan et al (2005) have made the following recommendations for encouraging and supporting stroke survivors to optimize their potential to return to work:

- All stroke survivors, if their condition permits, should be encouraged to be evaluated for the potential of returning to work.
- All stroke survivors, who were previously employed, should be referred to vocational counselling for assistance with the return to work process.
- All stroke survivors who are considering a return to work but who may be experiencing a lack of motivation, or who have emotional and psychological concerns, should be referred for supportive services.

Physicians and other rehabilitation professionals need to recognize and acknowledge that stroke survivors are more than just patients, but individuals who have many roles including worker, spouse and family member. It is essential that information and advice to facilitate return to work is provided at the earliest opportunity (Gilworth et al, 2009). It should be noted, however, that for some people, stroke did change the meaning of work and included some undesirable elements, in particular, stress. These individuals perceived that work caused stress and that stress was a contributing factor in their stroke (Alaszewski et al, 2007). Therefore, a client-centred approach must be used when supporting a stroke survivor with return to work. This will enable the flexibility to change goals and strategies as the stroke survivor works though the process (Corr & Wilmer, 2003).

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