

The Elderly Person With Multiple Sclerosis: Clinical Implications for the Increasing Life-Span



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ABSTRACT

Multiple sclerosis (MS) is a chronic, unpredictable, progressive, and disabling autoimmune disease with significant neurodegenerative and inflammatory components. To effectively treat and care for older persons with MS, it is essential to examine the factors associated with a decrease in their quality of life. Typically, MS is diagnosed between 20 and 50 years old. Although not a fatal disease, the natural history data of persons with MS reveal survival approximately 38 years after diagnosis. With the advent of disease-modifying therapies, life-span has increased substantially over the past 2 decades among people with MS. Approximately 90% of people with MS now in their 20s may live into their 70s. Their quality of life as an older adult will be impacted by what we learn today. Currently, approximately a quarter of people with MS are mature adults over 65 years old. Older adults with MS are more likely to have a decreased health-related quality of life (HRQOL). HRQOL is a multidimensional construct that refers to an individual's physical functioning, ability to perform activities of daily living, sense of well-being, satisfaction with life, perception of psychological status, and social functioning. This article focuses on the current literature in HRQOL in older persons with MS. A specific aim is to examine the factors associated with a decreased QOL in older persons with MS. Nursing screening and implementation of interventions that may reduce these factors and improve function of patients will be discussed. Although measures to improve HRQOL do not substitute for treatment of the disease, knowledge of factors that reduce HRQOL is essential to understand patient perceptions of their health and disease.

Keywords: aging, health-related quality of life, multiple sclerosis

Multiple sclerosis (MS) is a chronic, unpredictable, progressive, and disabling autoimmune disease with significant neurodegenerative and inflammatory components. Typically, MS is diagnosed between 20 and 50 years old (Finlayson, 2004; Redelings, McCoy, & Sorvillo, 2006). Although the effect of the disease causes significant life changes, it is not a fatal disease. The natural history data of persons with MS reveal survival approximately 38 years after diagnosis (Hirst, Swingler, Compston, Ben-Shlomo, & Robertson, 2008). Moreover, with the advent of disease-modifying therapies, life-span has increased substantially over the past 3–4 decades among people with MS (Hurwitz, 2011; Ragonese, Aridon, Salemi, D'Amelio, & Savettieri,

2008). Approximately 90% of people with MS now in their 20s may live into their 70s (Hurwitz, 2011). Currently, approximately a quarter of people with MS are mature adults over 65 years old.

As persons with MS age, they are more likely to have other chronic diseases. Higher rates of chronic disease in the Baby Boomer generation along with more disability and poorer health status than previous generations have recently been noted (King, Matheson, Chirina, Shankar, & Broman-Fulks, 2013). Sixty percent of all older adults, aged 60 years or older, are predicted to have more than one chronic condition. It is projected that 14 million will be living with diabetes, half will have arthritis, and a third will be considered obese (American Hospital Association, 2007). In some ways, people with MS may have an advantage over the general population with regard to aging and coping with chronic illness. Preliminary research suggests that many patients with MS, particularly women, accept and adapt to their disease state as they grow older (Ploughman et al., 2012).

Longer life-span for persons with MS is not without its challenges with respect to both direct (e.g., cognitive impairments) and indirect (e.g., impaired ability to exercise because of poor mobility and tendency to overheat) effects of the disease (DiLorenzo, Halper, & Picone, 2004). Physical and psychological impairments

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(fatigue, pain, low vision, weakness, spasticity, declining mobility, bladder and bowel dysfunction, cognitive dysfunction, depression, anxiety, reduced social interaction, and increased dependence on others) are frequently present (Klewer, Pöhlau, Nippert, Haas, & Kugler, 2001; Marrie et al., 2008, 2009a). These MS health-related issues reduce health-related quality of life (HRQOL), a multidimensional construct that refers to an individual's physical functioning, ability to perform activities of daily living, sense of well-being, satisfaction with life, perception of psychological status, and social functioning (Mitchell, Benito-León, González, & Rivera-Navarro, 2005).

Research suggests that HRQOL is negatively associated with both physical and psychological components, such as disability, fatigue, and depression, in young and middle-aged persons with MS (Hoogs, Kaur, Smerbeck, Weinstock-Guttman, & Benedict, 2011; Janardhan & Bakshi, 2002; Mitchell et al., 2005). Furthermore, middle-aged patients with MS with a secondary-progressive disease course are known to have a poorer HRQOL (Beiske et al., 2007).

Decreased HRQOL in patients with MS has been correlated with the presence of comorbid diseases. Comorbidities have been shown to negatively affect disability progression, and people with MS may develop diseases of aging such as arthritis, cataracts, hypertension, and hypercholesterolemia at a younger age than their peers (Marrie et al., 2009b). In a sample of 8983 subjects (average age = 53 years) who were members of the North American Research Committee on Multiple Sclerosis Registry, over a third reported at least one physical comorbidity (Marrie et al., 2008). The most commonly reported comorbidities of patients with MS were similar to those seen in the general population: hypercholesterolemia (37%), hypertension (30%), and arthritis (16%). In a related survey, Marrie et al. (2009a) found that the presence of comorbidities both delayed diagnosis and increased the severity of disability at diagnosis. To improve outcomes in this population, it is important that neuroscience nurses who treat older persons with MS understand factors that affect HRQOL as well as the clinical implications of decreased HRQOL.

The purpose of this article is to review the current literature in HRQOL in older persons with MS. A specific aim is to examine the factors associated with a decreased QOL in older persons with MS. Nurse screening and implementation of interventions that may reduce these factors and improve function of patients will be discussed. Although measures to improve HRQOL do not substitute for treatment of the disease, knowledge of factors that reduce HRQOL is essential to understand patient perceptions of their health and disease.

Longer life-spans for individuals
with MS present both direct
(cognitive changes) and indirect
(poorer mobility) challenges
that potentially reduce HRQOL in
older patients.

HRQOL Among Elderly Patients With MS

There is limited research with respect to aging with MS and HRQOL among elderly patients with MS. In a small study, Klewer et al. (2001) found that older patients with MS (average age = 73 years, $n = 53$) had physical and psychosocial impairments. Fifty-eight percent reported frequent depressed feelings and moods, with more than 30% having contemplated suicide. More than half of the subjects reported impaired mobility, and almost half acknowledged pain and spasticity. Social isolation, because of bladder dysfunction, was reported in more than 70% of the sample.

In a comparison of patients with MS over the age of 65 years ($n = 179$) and younger patients with MS aged 18–64 years ($n = 1987$), Minden, Frankel, Hadden, Srinath, and Perloff (2004) found that disability was significantly greater in patients over the age of 65 years. Eighty-five percent of older persons with MS required assistance with activities of daily living, and 40% received home care services. One third of the group over the age of 65 years reported fair-to-poor health. In this study, the duration of illness and its course were found to be predictors of disability. Yet, cognition and emotional problems were significantly lower in the older group—a finding that the authors thought was unusual.

However, in a different study, HRQOL and mental health challenges were compared in older (mean age = 66 years) and younger (mean age = 47.3 years) patients. Although there were greater physical limitations among older patients, HRQOL and mental health were similar in the two groups (DiLorenzo et al., 2004). This may be because of older patients having the ability to adapt to their disease over time.

Mental health challenges and receipt of services were examined in 1282 persons with MS aged 45–90 years (Garcia & Finlayson, 2005). Older persons with MS reported fewer mental health issues than younger persons with MS. Functional abilities, age, years since diagnosis, presence of a caretaker, and self-rated health

status were related to mental health challenges in this study. Importantly, less than 16% of the persons with mental health issues were receiving services.

Buhse, Banker, and Clement (2014) investigated factors associated with mental and physical HRQOL among 211 patients with MS over the age of 65 years. Findings were consistent with earlier studies. Older patients with MS were minimally depressed and were in better mental health than physical health. Increased disability, risk of cognitive impairment, depression, and a comorbid condition were the strongest predictors of a decrease in QOL. Increased disability status was found to be negatively associated with both physical QOL and mental QOL.

Clinical Implications of Aging With MS

With the growing awareness that people with MS can live well into their 70s and beyond, there are a number of factors that neuroscience nurses may integrate into their assessment of patients with MS that may potentially enhance their HRQOL. It is important to assess for these factors to minimize the effect of MS on older patients. Implementation of interventions aimed to reduce social isolation, depression, physical disability, the effects of cognitive impairments, and comorbid illness is an essential function of nursing.

Social Isolation

In the United States, approximately 29% of persons over the age of 65 years live alone. Of this population, two thirds are women (Administration on Aging, U.S. Health and Human Services, 2012). Elderly persons who live alone have been often reported to have lower QOL because of the effects of social isolation and loneliness (Gold, Schulz, Mönch, Schulz, & Heesen, 2003). Nicholson (2009) defines social isolation as “a state in which the individual lacks a sense of belonging socially, lacks engagement with others, has minimal number of social contacts and are deficient in fulfilling and quality relationships” (p. 1346). Social isolation has been shown to affect the health, well-being, and QOL of numerous older adults, and there is little evidence that health professionals are assessing social isolation (Nicholson, 2012).

In older adults with MS, limited social support has been associated with depression and a predictor of suicidality. Fong, Finlayson, and Peacock (2006) reported that older adults with MS had decreased social activities and decreased use of community resources because of disability and lack of accessible transportation. In contrast, Buhse et al. (2014) found that being widowed increased the physical QOL of older persons with MS. The necessity to complete daily tasks previously shared with spouses despite having MS may

be the reason for this finding. Older persons with MS have reported their ability to adapt to the changes and disease symptoms over many years and value being independent and remaining at home (Ploughman et al., 2012).

Assessing social isolation in older persons with MS is a nursing function, and social isolation is an under-used official nursing diagnosis (Adkely & Ladwig, 2011). The Lubben Social Network Scale (see Table 1, available as Supplemental Digital Content 1 at <http://links.lww.com/JNN/A45>) is a six-item questionnaire that has been validated to determine if the older adult is at risk for social isolation and needs further assessment. It has been shown to be successful in the clinical setting and takes the patient only a few minutes to complete. If it is determined that the person is at risk for social isolation, the nurse may refer the individual to support groups, a local chapter of the National MS Society, or other resources for assistance.

Physical Disability

The research is robust with respect to the association between patient physical disability and poorer overall HRQOL (Buhse et al., 2014; Göksel Karatepe et al., 2011; Nortvedt, Riise, Myhr, & Nyland, 2000; Twork et al., 2010). Patient physical disability has also been found to be associated with mental health challenges as well as physical HRQOL (Garcia & Finlayson, 2005; Göksel Karatepe et al., 2011; Goretti et al., 2009; Patti et al., 2007; Zwibel, 2009). Older adults with MS who have increased disability may be more isolated and less able to leave their home and have less social support than younger individuals with MS. The lack of social support, combined with disabling symptoms and social isolation, has been reported as negative aspects of aging with MS (Finlayson, Van Denend, & DalMonte, 2005).

Older adults with MS who lose their mobility go through a mourning process and have fears of decreased independence (Finlayson, 2004). As mobility is reduced, the person may have to forgo hobbies, interests, and opportunities to socialize with others. To socialize, they may need to plan ahead for activities. Social support and assistive devices have been shown to alter the older adult's experiences and perceptions of their mobility and independence (Finlayson & DalMonte, 2002). This may help improve their QOL.

The nurse may implement supportive measures to assist the older patient as mobility changes and disability develops. Providing time for the patient to discuss their experiences and feelings and encouraging the use of support groups, in addition to ensuring appropriate and proper use of mobility equipment, may help them adjust to these life changes. Referring

the patient to physical and/or occupational therapy may actually improve function and decrease disability (Roma, 2007).

Changes in mobility may be caused by spasticity and weakness. These are common in older patients with a progressive disease course of MS and may lead to increased disability (Stern, Sorkin, Milton, & Sperber, 2010). However, new or increased spasticity or weakness must be evaluated to rule out other causes such as infections, skin breakdown, or other comorbid diseases. For instance, urinary tract infections can cause an increase in MS symptoms and affect mobility until treated effectively.

Depression

Depression is the most common mood disorder in the population with MS as a whole, affecting over half of all patients with MS, and has been shown to be the largest contributor to decreased QOL. Moreover, it may increase the severity of some MS symptoms including disability and fatigue (Mohr, Hart, & Vella, 2007). Depression is common among patients with MS, often underdiagnosed and undertreated (Marrie et al., 2009a). Mental and physical HRQOL were negatively associated with patient depression (Becks Depression Inventory II; Buhse et al., 2014). Specifically, depression affects both the mental and physical domains of HRQOL because it impairs motivation and interest and limits physical progress (Göksel Karatepe et al., 2011; Mitchell et al., 2005).

Depression is common in community-dwelling elderly patients with chronic diseases, with more than one quarter experiencing symptoms (Mukai & Tampi, 2009). Despite the high incidence of depressive illness in the older population, it is estimated that more than 60% of patients remain untreated or undertreated. Older adults with MS may face similar problems as the general population that can predispose them to depression, anxiety, and suicidal ideation. This includes limited social support, role transitions, changes in relationships, and decreased accessibility of the environment (Fong et al., 2006). Older adults with MS who were depressed reported significantly lower perceptions of their overall health than those who were not depressed (Ploughman et al., 2012).

Screening for depression in older patients with MS should be completed at each visit. As the disease progresses, changes in function may cause depression. Two questions from the Patient Health Questionnaire may be sufficient to screen for depression in MS (Mohr et al., 2007). If the patient scores 3 or more on the questionnaire (see Table 2, available as Supplemental Digital Content 2 at <http://links.lww.com/JNN/A46>), they should be evaluated further for treatment.

Treatment of depression in older patients can be complex because of elderly variability in drug absorption, decreased volume of distribution, and potentially higher drug levels. This may negatively affect the patient's ability to metabolize and excrete the antidepressant. Treatment with selective serotonin reuptake inhibitors and venlafaxine ER has been shown to work as a first-line treatment for severe depression in the older adults (Mukai & Tampi, 2009). Improvement in depressive symptoms may take between 8 and 12 weeks, and patients must be advised that they should stay on the medication for at least 3 months to experience a benefit. For older patients, the adage, "start low; go slow," is important to assess treatment effects. Follow-up telephone calls to discuss questions regarding medications and side effects may increase adherence.

Cognitive Impairment

Problems with memory and cognition—high-level functions performed by the brain and the mental processes of thinking, reasoning, and problem solving—affect 65% of people with MS and are common complaints of people as they get older (DiLorenzo, 2011). Buhse et al. (2014) found that mental and physical HRQOL were negatively associated with patient risk of cognitive impairment, and most elderly patients in this study were cognitively impaired.

Stern et al. (2010) report that normal aging may lead to impaired cognition, and this may put older persons with MS at an increased risk. Cognitive impairment has been shown to increase over time in patients with long-term disease (Smestad, Sandvik, Landrø, & Celius, 2010).

Elderly persons with MS appear to be similar to other older persons with cognitive impairment. Among elderly persons with dementia, QOL is associated with mood and engagement in pleasant activities. Increasing cognitive impairment in older adults with chronic illnesses may cause a loss of ability to engage in rewarding and enjoyable activities, which in turn may lead to increased depression and decreased QOL (Logsdon, McCurry, & Teri, 2007).

Not all cognitive changes are MS related, however, and it may be difficult to distinguish MS symptoms from normal symptoms of aging. More concerning is the possibility of other comorbidities, such as Alzheimer disease (AD), causing an increase in cognitive impairment. Müller et al. (2013) compared cognitive function in elderly patients with MS and AD and found many similarities between these types of impairment. Both had word retrieval difficulties, delayed verbal recall, delayed figural recall, and impaired executive functioning. However, patients with AD had impaired recognition, whereas patients with MS did not. Because

aging is the most significant risk of AD, it may have to be ruled out in older patients with MS with increasing cognitive issues.

Neuroscience nurses should assess older patients with MS for cognitive impairments. Once suspected, the patient can be referred to a neuropsychologist for complete testing and then referred for cognitive rehabilitation. Patients should be encouraged to remain as physically and mentally active as possible to maintain cognitive health (Larson et al., 2006). Findings from studies of patients with AD may help older patients with MS with their cognitive health. These findings suggest that the daily intake of fruit and vegetables and the weekly intake of fish are associated with a 30%–40% decrease in the risk of dementia (Dai, Borenstein, Wu, Jackson, & Larson, 2006). Finally, patients who smoke should be strongly encouraged to quit, and patients who are obese should be strongly encouraged to reduce their weight because both have been implicated in the risk of dementia (Dai et al., 2006).

Comorbid Illness

The probability of having more than one chronic disease increases with age. In fact, over 45% of elderly people over the age of 65 years have two or more chronic diseases (Freid, Bernstein, & Bush, 2012). Chronic disease and combinations of chronic diseases affect individuals to varying degrees and may impact an individual's life in different ways. QOL in persons with multiple comorbidities was examined by Sprangers and colleagues (2000). A comparison of older and younger persons with comorbidities revealed that older persons had the lowest QOL. In another study, the presence of one comorbid condition was negatively associated with physical HRQOL (Buhse et al., 2014).

In the general population, patients with comorbid conditions have reported the lowest levels of physical and mental HRQOL (Sprangers et al., 2000). As individuals with MS age, they are likely to have the same comorbidities as the general population including hypertension, heart conditions, diabetes, and cancer (Ploughman et al., 2012). These comorbidities may also lead to other related illnesses. Ploughman et al. (2012) reported that older persons with MS are very concerned about comorbid conditions and the effects on their lifestyle. They have a need to balance MS-related physical and psychological impairments with the health effects of aging.

These findings highlight the need for aging persons with MS to have a primary healthcare provider who manages comorbid conditions appropriately. Neuroscience nurses should encourage patients with MS to obtain age-related and preventive health screenings and treatment for comorbidities to decrease their impact (see

Table 3, available as Supplemental Digital Content 3 at <http://links.lww.com/JNN/A47>).

Summary

Despite the limited data available on aging and HRQOL in elderly patients with MS, this review supports the need for nurses to regularly screen for social isolation, cognitive impairment, comorbidities including mental illness, and physical disability in this population to enhance QOL.

Encouraging older patients with MS to stay active both physically and mentally as long as possible has been shown to be positively associated with HRQOL. Likewise, these patients should be advised to remain socially engaged, whether through direct social contact or via telephone and computer outlets if their physical impairments prohibit them from leaving the house. Encouraging the use of rehabilitation services and participation in MS support groups may increase elderly patients' HRQOL by helping them to cope with such physical disabilities and obtain additional care. Patients can also be directed to the National MS Society Web site for details on support groups and further information about MS.

Interventions such as cognitive stimulation and rehabilitation services should be utilized for elderly persons with MS with cognitive impairment. Cognitive screening should include measures to test attention span, memory, information processing speed, ability to process spoken and written information and to organize and plan, and language skills. A magnetic resonance imaging scan can be ordered to identify brain atrophy and mini strokes associated with cognitive issues. If any of these screening tests indicate a cognitive problem, referral for a more extensive neuropsychological evaluation can be considered. In addition, if screening tests indicate anxiety or depression symptoms or suicidal ideation, patients may be referred for medication, talk therapy, or cognitive rehabilitation to enhance their daily function and reduce potential increases in severity of MS symptoms.

Finally, the influence of comorbidity on HRQOL should be considered in clinical practice. Nurses should obtain information from their state's Office for the Aging, the National MS Society, and other organizations to share with any patient who may need or benefit from additional services and should be knowledgeable about referring patients for treatment of comorbidity and cognitive problems and general health screenings.

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