

Bladder Dysfunction: A Remedial Social Problem

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Urinary bladder dysfunction is a leading disability of persons with multiple sclerosis. The study reported here demonstrates that the critical management of this neurologic deficit can improve the patient's quality of life in terms of personal, social, and occupational activities. The urodynamic studies of urinary flow rate, voiding cystourethrography, and positional cystometry were used to establish the type of neurogenic bladder (areflexic, uninhibited, or mixed). Management regimens were individualized using a combination of anticholinergic or cholinergic drugs, intermittent self-catheterization, and managed fluid intake and voiding.

Multiple sclerosis affects about 250,000 Americans. This disease of the brain and spinal cord has an onset in young and middle-aged adults (aged 15 to 50 years). Various studies have reported that as many as 80 percent of those persons with multiple sclerosis experience symptoms of urinary frequency or incontinence at some time during the course of their disease.

The purpose of this study was to explore the effect of intervention for urinary bladder dysfunction on the personal, social, and occupational activities of middle-aged adults with multiple sclerosis. It was believed that bladder dysfunction, a major cause of disability, was remedial and that remediation of this functional deficit would improve the quality of life for the person in a way that could be described.

Methods

The study reported here was an exploratory field study that used participant observation and semistructured interviews to gather qualitative and quantitative data. Interviews were conducted with 94 participants both before and after medical intervention. The preintervention interview sought information on the history of the bladder dysfunction, the current situation, and the person's expectation for intervention. Participants were asked to set a goal they hoped to achieve by decreasing the symptoms of their neurogenic bladder. Disability was assessed using the Detels-Visscher Disability Scale.

The bladder function was objectively assessed in the laboratory by means of urodynamic studies, which included urine flow rate, voiding cystourethrography, positional cystometry, and simultaneous electromyographic recording of detrusor activity, external urethral sphincter activity, and transmitted intra-abdominal pressure.

Subsequent to laboratory assessment and institution of treatment, individuals were followed for a period of 24 months. Interviews and repeated informal telephone contacts were used to generate

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data on the effect of intervention on personal, social, and occupational activities.

Urinary bladder dysfunction generates many problems of a technical and physical nature. The most important ramifications of this dysfunction, however, are personal and social in character.

Disability secondary to impaired bladder function was defined as disruptions to personal, social, and occupational activities of daily living caused by urinary incontinence and increased frequency of voiding. Daily activities were divided into three major categories: personal, social, and occupational. Since the lines between these categories were not always clear, some arbitrary decisions were made. For example, occupational activities often have social aspects. Leisure activities can have personal and social value.

Results

The sample studied included 76 women and 18 men between the ages of 30 and 49 years who came to the Multiple Sclerosis Clinical Center at the University of Washington for management of urinary frequency and incontinence. The duration of their multiple sclerosis ranged from six months to 30 years.

Disability Level

None were bedridden, nor was there anyone whose only disability was secondary to vision loss. Sixteen of the participants reported their only disability to be from bladder symptoms. Four participants were legally blind and 18 others had moderate visual impairment that did not affect their ability to care for themselves. Eight participants had no use of their hands, three had difficulty using their hands as a result of ataxia, and 20 had difficulty manipulating small objects.

Bladder Symptoms

Urinary frequency was reported by 81 of the 94 participants (86 percent). More than one half of the

participants were voiding at least every 90 minutes. Twenty-four experienced nocturia more than three times per night, and 36 voided one to three times each night.

Seventy-six reported urgency and 64 were incontinent. Incontinence ranged from a slight dribbling in 24 participants to complete inability to control voiding in six participants.

Eight participants had difficulty initiating micturition or felt that they were not completely emptying their bladder. Ten reported having more than three urinary tract infections during the previous 12 months.

Prior Medical Intervention

All participants had reported their symptoms of neurogenic bladder to their primary care physicians, who in all cases were male and in fee-for-service practice. Table 1 shows the action taken by the physicians. It is notable that the complaint of symptoms by 75 percent of the women in this study was ignored, whereas only 11 percent of the men were ignored.

Some initial but transient improvement in symptoms was recalled by 17 of the participants, including five for whom there had been no intervention. The three patients who were treated on the basis of urodynamic studies experienced alleviation of their symptoms.

Social Effects of Bladder Dysfunction

Urinary frequency and incontinence interfered with personal activities in a variety of ways. The need to get up to void more than once during the night was reported to interfere with sleep in 52 of the participants. Twelve persons needed to awaken another member of the family to assist them, thus disrupting the sleep of others. Incontinence during coitus was a major problem for 11 persons. Fluid management was used by 88 percent of the participants to eliminate symptoms at strategic times. Three women were limiting their total daily fluid intake to less than 200 cc. Management of incontinence through the use of protective undergarments and frequent changes of

Table 1. Action Taken by Physicians on Complaint of Urinary Bladder Dysfunction

Action Taken	Female No. (%)	Male No. (%)	Total No. (%)
Complaint ignored	57 (75)	2 (11)	59 (63)
Corrective plastic surgery	7 (9)	5 (28)	12 (13)
Medicated by history alone	8 (10)	4 (22)	12 (13)
Intravenous pyelogram and cystoscopy	2 (3)	6 (33)	8 (8)
Urodynamic studies	2 (3)	1 (6)	3 (3)
Total	76 (100)	18 (100)	94 (100)

clothes, causing an increase in laundry, modified the participants' personal activities.

Social interaction was curtailed by 53 percent (50) of the participants. They gave up shopping, attending church activities, and visiting friends because of urinary frequency or incontinence. Furthermore, they refused to invite friends into their homes because of their symptoms.

Occupational activities were also affected by bladder dysfunction. Urinary frequency interfered with the ability to work uninterrupted at a task. Repeated trips to the toilet drew the attention of co-workers to the symptoms of a chronic illness, setting the participants apart from others. Interactions within the work place often centered on bladder dysfunction.

Expectations for Intervention

Personal goals set prior to intervention included decreasing the number of times wet clothing and bedding needed to be changed and decreasing the frequency of nocturnal voiding. Participants wanted to become more fully involved in such social activities as attending church and entertainment events and visiting friends. Those employed hoped to improve their efficiency at work by decreasing the disruptions of urinary frequency and incontinence. The ability to get far enough away from a toilet to perform home maintenance activities such as shopping and yard work were the goals of others. Parents wished to increase their activities with their children.

Outcome of Treatment

Goals were considered achieved only when the participant actually resumed the activity, such as attending an entertainment event, or when there was a measurable change in an activity such as changing clothes or visiting friends. The number of goals set and achieved are shown in Table 2.

Each of the 94 participants set at least one goal for improved bladder function. An average of 81 percent of the goals set were achieved. Eighty-seven percent of the participants achieved at least one of their goals, and 62 percent achieved all of the goals they set prior to intervention.

Discussion

The participants in this study were of an age when they expected to be achievers in personal, social, and occupational spheres of life.^{1,2} The symptoms of urinary frequency and incontinence compromised their ability to perform in these areas. Symptom management became an overriding concern in all areas of daily living.

Family members had their daily activities, such as sleep, disrupted. The expression of sexual intimacy was compromised. They were required to assume shopping and other tasks outside the home. Often a family member took on the burden of additional laundry and helped find toilet facilities outside the home.

Currently available diagnostic methods permit pinpointing the demyelinated neuroanatomic cir-

Table 2. Number of Participants Setting and Achieving Specific Goals for Bladder Management

Goal	Goal Achievement (%)
Personal	
Decreased change of clothes and bedding	58/60 (97)
Decreased nocturnal voiding	45/57 (79)
Social	
Return to church activities	9/12 (75)
Attend entertainment events	38/46 (83)
Visit friends	62/73 (85)
Occupational	
Improve work efficiency	12/13 (92)
Resume home maintenance	11/15 (73)
Increase activities with children	17/26 (65)

cuit responsible for impaired bladder function.³⁻⁶ These studies include urinary flow rate, voiding cystourethrography, positional cystometrography, simultaneous electromyographic recording of detrusor activity, external urethral sphincter activity, and transmitted intra-abdominal pressure.

The clinical management of neurogenic bladder is well documented in the literature.⁷⁻¹¹ Those with an uninhibited bladder were treated with propantheline, oxybutynin, imipramine, or propantheline plus intermittent catheterization. Those with an areflexic bladder were treated with bethanechol and intermittent self-catheterization alone or in combination. Treatment times were individualized to the person's daily routine. Fluid management and timed voiding were integral to most treatment regimens.

Although treatment did not correct the underlying neurologic deficit, it did allow the participants in this study to resume personal, social, and occupational activities of daily living appropriate to their state in life.

Conclusions

Impaired bladder function occurs often in persons with multiple sclerosis. Symptoms of urinary frequency and incontinence present a significant disability. Currently available diagnostic methods, pharmacologic agents, and other management

strategies alleviated the social disability caused by impaired bladder function.

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References

1. Stevenson JS: Issues and Crises During Middlecence. New York, Appleton-Century-Crofts, 1977
2. Dickelman N: The middle years: Emotional tasks of the middle adult. *Am J Nurs* 75:997, 1975
3. Anderson JT, Bradley WE: Abnormalities of detrusor and sphincter function in multiple sclerosis. *Br J Urol* 48:193, 1976
4. Raz S: The Raz Test: A new test of reflex activity of the external urethral sphincter in neurogenic bladder. *J Urol* 111:25, 1974
5. Summers JL: Neurogenic bladder in the woman with MS. *J Urol* 120:555, 1978
6. Blavis JG, Bhimani G, Labib KB: Vesicourethral dysfunction in multiple sclerosis. *J Urol* 122:342, 1979
7. Tourtellotte WW: Therapeutics of multiple sclerosis. *Clin Neuropharmacol* 2:179, 1977
8. From A, Heltberg A: A double blind trial with baclofen (Lioresal) and diazepam in spasticity due to multiple sclerosis. *Acta Neurol Scand* 51:158, 1975
9. Jameson RM: Management of the bladder in non-traumatic paraplegia. *Paraplegia* 12:92, 1974
10. Nordling J: Alpha-blockers and urethral pressure in neurological patients. *Urol Int* 33:304, 1978
11. Bradley WE, Logothetis JL, Timm GW: Cystometric and sphincter abnormalities in multiple sclerosis. *Neurology* 23:1131, 1973