Functional Health Status Of Relocated Nursing Home Residents

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***Abstract*: This article presents the functional health status results of 49 nursing home residents who were involuntarily relocated from one institution to another. The purpose of the study was to determine whether there would be pre- to postmove changes in health status. Nursing personnel on both the day and evening shifts completed separate assessments of the residents' functional health status using the Long-Term Health Care Minimum Data Set instrument. These assessments were completed 2 to 3 months before and 3 to 4 months after the move. The interrater reliability was high; overall day-evening agreement was 82 percent. After the move, only receptive communication was rated higher; dressing, transferring, using the toilet, continence, and mobility were rated lower. Six functional activities showed no significant changes. Relocation does not appear to have a uniformly negative impact on functional status. (J Am Board Fam Pract 1990; 3:157-62.)**

Relocation is almost an inevitable fact of life for the elderly. Previous studies have examined relocations from home to home,[1-5] home to institution,[6,7] and institution to institution.[8-16] The following health outcomes have been studied: mortality, morbidity, functional status, and personal and social adjustment. Mortality has been extensively studied, but conflicting results have generated substantial controversy.[17-24] The studies of functional status have produced similar results with reports of positive effect,[8-15] no effect,[14] and negative effect[13,16] on ambulation-mobility, sensory function, and self-care activities of daily living.

These results are problematic for the physicians who care for persons experiencing relocation, because it is unclear whether vigilance and anticipatory care are needed or reassurance of those involved is sufficient. The equivocal functional status results are further limited because they have been reported as aggregate scores instead of by individual functions.[8,13-16] This method might be useful for testing "relocation effects" in general, but the aggregate scores have hampered efforts to provide services to those being relocated. Knowing how particular functions might be affected can guide specific interventions. We address this issue by reporting changes for 12 separate functions.

The involuntary relocation of 49 nursing home residents from one institution to another provided an opportunity for this descriptive study of the functional health status of relocated residents. Our purpose was to determine whether there would be pre- to postmove changes in functional health status as measured by the nursing staff. Due to the inconsistent results and aggregate scores in the available literature, precise hypotheses about the impact of relocation on specific functions could not be articulated before data collection. The study is exploratory because the overall purpose and approach to data reporting do not follow the methodology of previous studies.

Methods

Participants in this study were 49 men and women who were living in a 50-bed unit operated by a county in Central New Jersey for its Medicaid or Medicare residents. The unit was being closed for financial and building code reasons, resulting in the involuntary relocation of the residents. All of the residents were moved to a new county facility located approximately 10 miles from the old one. The closed unit housed nearly equal numbers of men and women on separate floors in a 30-year-old, 2-story structure. A majority stayed in 6- to 12-bed wards with a few residents

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in semi-private rooms. The receiving facility was a new 250-bed unit with 50 residents on each floor. With the exception of 2 seriously ill patients, all of the residents were transferred to one floor of the new facility in semi-private rooms. At the closed facility, 37 staff had direct resident contact; of these, 33 were employed at the new facility and had contact with the relocated residents.

The nursing personnel on both the day and evening shifts completed separate functional health status assessments for each of the residents. At least 2 staff members on each shift met as a group to provide an assessment of each aspect of functioning. They were directed to respond to each question on the basis of the patient's usual level of functioning during the previous week. The Long-Term Health Care Minimum Data Set from the National Committee on Vital and Health Statistics[21] was the basis for the assessments of functional status. For the postmove assessment, at least one of the staff had worked with the residents at the closed facility, and at least one had not had contact with the residents before relocation. This combination of raters was used in order to include some of the same observers for both the pre- and postmove assessments and to control any response bias by the nursing staff at the closed facility who, in general, believed that the move would have a deleterious effect on the residents. Table 1 outlines the aspects of health status that were assessed. For each aspect of functioning, there were three to five ordinal categories describing specific observable behaviors indicating levels of dependence and a "not determined" category.

Table 1. Aspects of Functional Health Status Assessed.

Vision
Hearing
Expressive communication
Receptive communication
Basic activities of daily living
Bathing
Dressing
Transferring in and out of bed or chair
Using toilet
Continence
Eating
Walking
Mobility

The functional assessments were conducted 2 to 3 months before and 3 to 4 months after the move. Our rationale for this timing was that the patients' functional status would be stable and not temporarily affected by premove preparations or by postmove adjustments. We expected that this interval would miss acute changes in function that could be attributed to the relocation process and would show residual changes. We also recognized that any observed changes over this rather substantial interval could be attributed to the normal aging process instead of the relocation process.[13] On the other hand, a shorter testing interval might have detected changes in function that were temporary and not sustained, and these were not believed to be as important clinically. This assessment interval was consistent with those used in the other studies of functional status.[8,13-16]

Results

Premove assessments of functional health status were completed by the nursing staff on 49 residents. There were 25 women and 24 men. Median age was 76 years (range 52 to 96). Of these 49 residents, 4 died before the move, leaving 23 women and 22 men to be relocated. An additional 3 residents died after the move and before the postmove assessment, and 4 others died after the postmove assessment. The 12-month and postmove mortality rates were 22 percent and 16 percent, respectively. Both of these rates were consistent with those observed by others.[9,13] Hence, the mortality experience and relocation effect for this study group were not atypical when compared with relocated groups previously reported in the literature.

The premove assessments of functional capabilities on which both the day and evening shifts agreed are presented in Table 2. Table 3 shows interrater reliability. Vision, receptive communication, and using the toilet had the highest proportion of agreement (90 percent or greater). Bathing had the poorest level of agreement but was not assessed for more than 60 percent of the patients. The overall premove day-evening agreement was 82.2 percent, with 88.7 percent of the disagreements concerning a difference of only one level of functioning. The postmove day-evening agreement was 81.3 percent for an overall study agreement of 81.8 percent.

Table 2. Premove Ratings of Function: Number of Residents at Each Level, Based on Day-Evening Concurrence (n = 49).

Functional Area	Category	Number	% of Residents
Vision	See adequately	33	67.3
	See obstacles	2	4.1
	Tell light from dark	2	4.1
	No vision	2	4.1
	Agreement	39	79.6
	Disagreement	4	8.2
	Not assessed	6	12.2
Hearing	Hear adequately	25	51.0
	Hear clear diction	7	14.3
	Hear with difficulty	1	2.0
	No hearing	0	0.0
	Agreement	33	67.3
	Disagreement	12	24.6
	Not assessed	4	8.2
Expressive communication	Usually understood	23	46.9
	Understood with difficulty	12	24.5
	Writes to communicate	0	0.0
	Uses gestures, grunts	1	2.0
	Does not convey needs	3	6.1
	Agreement	39	79.5
	Disagreement	10	20.5
	Not assessed	0	0.0
Receptive communication	Usually understands	25	51.0
	Limited comprehension	12	24.5
	Depends on lip reading	1	2.0
	Understands primitive gestures	0	0.0
	Does not understand	2	4.1
	Agreement	40	81.6
	Disagreement	6	12.2
	Not assessed	3	6.1
Bathing	Without supervision	3	6.1
	With supervision	0	0.0
	Bathed, does not participate	8	16.3
	Agreement	11	22.4
	Disagreement	8	16.3
	Not assessed	30	61.2
Dressing	Without supervision	10	20.4
	With supervision	3	6.1
	Dressed, does not participate	16	32.7
	Agreement	29	59.2
	Disagreement	12	24.5
	Not assessed	8	16.3
Transferring	Without supervision	13	26.5
	With supervision	14	28.6
	Transferred, does not participate	10	20.4
	Remains in bed	2	4.1
	Agreement	39	79.6
	Disagreement	10	20.4
	Not assessed	0	0.0
Using toilet	Without supervision	18	36.7
	With supervision	11	22.5
	Does not use toilet room	16	32.7
	Agreement	45	91.9
	Disagreement	4	8.1
	Not assessed	0	0.0

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Table 2. (continued).

Functional Area	Category	Number	% of Residents
Continence	Continent	16	32.7
	Occasionally incontinent	6	12.2
	Incontinent more than once/week	16	32.7
	Agreement	38	77.6
	Disagreement	6	12.2
	Not assessed	5	10.2
Eating	Some help — cut meat/butter bread	25	51.0
	More help than cutting/buttering	11	22.4
	Fed totally by others	7	14.3
	Agreement	43	87.7
	Disagreement	5	10.2
	Not assessed	1	2.1
Walking	Without supervision	4	8.2
	Walker or cane	6	12.2
	With supervision	4	8.2
	Does not walk	27	55.1
	Agreement	41	83.7
	Disagreement	8	16.3
	Not assessed	0	0.0
Mobility	Goes outdoors without help	0	0.0
	Goes outdoors with help	35	71.4
	Confined to house/institution	1	2.1
	Bed disabled	2	4.1
	Agreement	38	77.6
	Disagreement	9	18.4
	Not assessed	2	4.1

Despite the good interrater reliability, it is possible that the disagreements were systematic in some way, i.e., day ratings for specific functions higher or lower than evening ratings on both the pre- and postmove assessments. The specific question asked was whether there were significant day-evening differences for particular functions. Only hearing had consistent significant differences between the two shifts (Table 3).

To determine whether there were pre- to postmove changes in functional health status, the day and evening ratings on each aspect of functioning were averaged to provide a single measure for the pre- and the postmove assessments. For each element of functional health status, the number of persons for whom the postmove measure was higher or lower was determined (Table 4). Only receptive communication was higher after the move than before the move for a significant number of patients. Seven residents were rated higher postmove on both hearing and receptive commu-

Table 3. Interrater Reliability: Proportion of Agreement and Number of Residents with Day-Evening Discrepancies of Ratings.

Functional Area	Premove Proportion of Agreement % Agree	n Rated	Premove		Postmove	
			Day Lower	Day Higher	Day Lower	Day Higher
Vision	90.7	43	4	0	1	1
Hearing	73.3	45	1*	11	1†	8
Expressive communication	79.6	49	1†	9	1	5
Receptive communication	90.0	46	4	2	5	3
Bathing	57.9	19	8†	0	3	5
Dressing	70.7	41	11*	1	4	1
Transferring	79.6	49	2	8	1	7
Using toilet	91.8	49	4	0	0*	9
Continence	86.4	44	3	3	0	4
Eating	89.6	48	4	1	0*	10
Walking	83.7	49	2	6	5	3
Mobility	80.9	47	5	4	12*	0

*$P < 0.01$, 1×2 chi-square with continuity correction.[25]
†$P < 0.05$.

nication. The functions of vision, hearing, expressive communication, bathing, eating, and walking showed no trend toward higher or lower postmove ratings. Parenthetically, meaningful comments about bathing must be tempered because more than 60 percent of the residents were not assessed. Dressing, on the other hand, transferring, using the toilet, continence, and mobility were rated lower after the move than before the move for a significant number of patients. Ten residents had lower postmove ratings on three or more of these functions, and an additional 3 residents had lower postmove ratings on two of the functions.

Table 4. Number of Residents with Pre- and Postmove Differences in Ratings (n = 42).

Functional Area	Postmove Lower	Postmove Higher
Vision	0	4
Hearing	5	12
Expressive communication	7	5
Receptive communication	2*	13
Bathing	12	8
Dressing	16*	2
Transferring	14†	4
Using toilet	11†	2
Continence	14†	3
Eating	5	10
Walking	5	6
Mobility	15*	3

*$P < 0.01$, 1×2 chi-square with continuity correction.[25]
†$P < 0.05$.

For the observed pre- and postmove differences in the ratings of functioning, we contemplated whether there was a response bias on the part of the nursing staff who, in general, believed that the move would have a deleterious effect on the residents. It appears that there was not a response bias, because 6 of the 12 areas of functioning had similar numbers of residents with lower or higher postmove ratings, and one had more residents with higher ratings than with lower postmove ratings. These seven functions (vision, hearing, expressive and receptive communication, bathing, eating, and walking) are potentially vulnerable to a covert response bias.

Discussion

This study of the impact of relocation on individual functions for daily living is constrained by three factors. First, the assessments of function do not differentiate between the ability to perform a function and the actual performance of a function; the assessments are only the observers' perception of functioning. High interrater reliability attenuates but does not directly eliminate this constraint on the interpretation of the results. Second, although longitudinal studies of the functional status of institutionalized elderly have been conducted, the results have been reported at an aggregate level.[8,13-16] Hence, information on the natural course of specific functions of residents in this population is not available for comparison with these results. Because there was

no control or comparison group for this study, it is open to debate whether the observed changes in individual functions for some patients are due to time or to the relocation.[13,15]

The third factor involves a conceptual understanding of how relocation could affect functional health status. The physical act of moving from one institution to another can have impacts on function, but it seems likely that it is the adjustment to the change in environment that is stressful and affects functioning. Changes in functional ratings from one environment to another can reflect real changes in the ability to perform. On the other hand, the two environments may present different opportunities or otherwise affect performance without inducing changes in the person's ability to perform the function. For example, institutional differences in acoustics or background noise can affect perceived receptive communication for residents with hearing deficits affecting discrimination. The distance to bathrooms can affect perceived continence or use of the toilet (e.g., bathroom in semi-private room versus one large bathroom for entire ward or floor). Finally, seasonal variations in weather conditions, institutional policies, and physical barriers to access can affect perceptions of residents' mobility, i.e., going outdoors with or without supervision versus confined to the institution. Further conceptual work and research are required in order to understand the relative impact of these factors on observed changes in functional health status and to explain how relocation leads to apparent improvement of some functions and deterioration of other functions.

The observed results are clearly preliminary, inasmuch as this is the first study to provide data on specific functions. Although the exploratory nature of this project must be kept in mind, the findings can provide specific testable hypotheses for further investigations and may assist clinicians. Given the caveats about this study, and the uncertainties about the relocation literature in general, what are the implications of these results for the physicians caring for patients being relocated? It appears that clinicians need not be overly concerned about several functions and can focus their efforts on the five basic activities of daily living most likely to deteriorate around the time of the move. Attention to the environmental conditions and staff supports that could directly influence these functions (dressing, transferring, using the toilet, continence, and mobility) would appear to be a high priority. These issues could be a focus of the premove preparations and postmove adjustments. Family physicians involved in the process could assure attention to these important, basic details.

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