Effectiveness of Occupational Therapy for Reducing Restraint Use in a Psychiatric Setting

Janene M. Carlson, Margo B. Holm

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Among the known hazards of restraint use are impaired circulation, loss of bone mass, pressure sores (Evans & Strumpf, 1991), and even death (Benson, 1992; Miles & Irvine, 1992). According to McHutchison and Morse, "Restraining patients jeopardizes patient's future mobility rather than increasing patient safety" (1989, p. 16). Muscles can atrophy and thus lose tone, strength, or mass and develop contractures (Blakeslee, Goldman, Papougenis, & Torelli, 1991). Cognitive problems, such as disorientation and memory impairment, and emotional problems, such as depression, humiliation, and stress, are aggravated (Strumpf & Evans, 1991). General health problems are also noted, including decreased appetite and food intake, restricted breathing, incontinence, and chronic constipation (Werner, Cohen-Mansfield, Braun, & Marx, 1989).

Restraint reduction is one of the goals of the Omnibus Budget Reconciliation Act of 1987 (OBRA '87, Public Law 100–203, 1987) and a primary concern of quality assurance in any long-term care facility (Davidson, Hensingway, & Wysocki, 1984; Gurguis, 1978; Hay & Cromwell, 1980). Distraction, validation, reminiscence, reframing, and behavior contracts are some interventions recommended by Smith (1990) to reduce the need for restraints. Several authors have recommend activities as an alternative to restraints (Cutchins, 1991; Gold, 1991).

In many long-term care facilities, including state psychiatric hospitals, the occupational therapist administers or provides the consultation regarding therapeutic activities; therefore, occupational therapy intervention may provide alternatives to restraints.

At one Pacific Northwestern state psychiatric hospital that employs occupational therapists, the average monthly census for 1990 was 1,043 patients. During this period there were 5,509 incidents of restraints involving 1,426 patients. During the same period there were also 40,079 incidents of safety restraint and 4,940 incidents of seclusion involving 2,388 patients for a total of 50,528 restraint incidents. The effect of occupational therapy services on restraint reduction in this setting had not been studied, and constituted the focus of this study.

Background

Physical restraints and seclusion have a long history of use in psychiatric settings. Violent or socially aversive behavior is the best known reason for restraint use (Rosen, DiGiacomo, 1978; Werner et al., 1989; Wring & Schirm, 1989). Wring and Schirm (1989) reported that incidents of patient violence frequently occur in conjunction with activities of daily living (ADLs). Hay and Cromwell (1980) pointed out that a patient who is acting out in a threatening way usually feels threatened. When several staff members approach such patients to place them in restraints, this feeling is compounded and the patient usually becomes more frighten. Werner et al. (1989) suggested
that the act of restraining itself may contribute to manifestations of agitation.

Violation of community and administrative limits was a common rationale given for restraining patients (Barnstein, 1985; Soloff, 1978). Soloff (1978) maintained that the enforcement of this nonspecific rationale by staff members was too often a reason for restraints. That nonspecific nature of the rationale also leads to conflicts among the staff (Rosen & DiGiacomo, 1978) because, although physical restraints are widely used, there are few guidelines that effectively control their use. As a result, the incidents leading to their use vary from ward to ward and from hospital to hospital (Carpenter, Hannon, McCleery, & Wanderling, 1988; Moss & La Puma, 1991; Okin, 1985; Phillips & Nasr, 1983; Way & Banks, 1990).

Contrary to ward staff members' beliefs, restrained residents actually require more valuable staff time than do nonrestrained residents (Blakeslee et al., 1991; Way & Banks, 1990).

Use of restraints in compliance with the Department of Health and Human Services, long-term care guidelines requires an estimated 2.8 hours per resident per day of staff coverage, as compared with the 2.7 hours per resident per day that is typically provided in Pennsylvania nursing facilities (Blakeslee et al., 1991, p. 5).

William, Morton, and Patrick (1990) pointed out that in most states, staff members must monitor the well-being of restrained patients at least every 15 min. That is the case in Washington state, the location of the hospital examined in this study (Nursing Service Standards Manual, 1989). Staff members' time is thus diverted from other therapeutic activities. In addition to the valuable time taken for monitoring of restrained patients, the act of restraining itself frequently leads to staff member injuries (Carmel & Hunter, 1989; Engel & Marsh, 1986).

During much of the history of restraining patients in psychiatric hospitals, patient advocates and hospital administrators have looked for alternatives. Guirguis (1978) and Davidson et al. (1984) have recommended staff member training and feedback as ways to reduce restrictive treatment procedures such as restraint and seclusion. Fletcher (1990) suggested first discovering the cause of the problem and taking care of that, if possible. Gold (1991) recommended activities as an alternative to restraints.

Are occupational therapy activities programs effective in decreasing the need for restraints in a psychiatric setting? The purpose of this study was to examine the differences in the amount of time spent in restraint and seclusion in an adult psychiatric population at a state hospital between those patients who received occupational therapy and those who did not.

**Method**

A retrospective review of the records at a psychiatric hospital in Washington state was used to examine the differences in amount of time spent in confinement between patients who participated in occupational therapy and those who did not. Currently, written referrals for treatment from medical personnel or the treatment team are being implemented. However, at the time these retrospective data were generated, written referrals were not required. Occupational therapy services were provided on the basis of screening or word of mouth.

**Subjects**

Criteria for inclusion in the study were (a) hospitalization on an adult ward of the selected Pacific Northwest state psychiatric hospital during 1990; (b) an Axis I diagnosis (i.e., principal admitting diagnosis) (American Psychiatric Association [APA], 1987); (c) no confounding Axis II diagnosis (i.e., personality disorder) (APA, 1987); and (d) a minimum continuous 90-day inpatient status.

Subjects who met the inclusion criteria were systematically designated as belonging to either an occupational therapy group (OT Group) or a non—occupational therapy group (NOT Group) until each group numbered 60. To qualify for the OT Group, a subject had to have received occupational therapy treatment at least one time in each 30-day period of the first 90 days, that is, a minimum of three occupational therapy sessions spaced over 90 days. NOT Group subjects had to meet all the inclusion criteria but had to have gone without occupational therapy during at least one of the 30-day periods. Subjects were not excluded because of age, gender, race, education level, length of stay, or use of prescribed psychotropic medications.

**Procedures**

From the first 2,284 admissions in 1990, 354 met the minimum 90-day inpatient criterion. Of these 354, 68 had an Axis II diagnosis and therefore were excluded, 74 were readmitted so their charts were not available, and 11 had charts that were held by physicians or review committees. From the remaining 201 patient charts, 60 qualified for the OT Group. For the NOT Group, 141 charts qualified; the first 60 charts were selected for use in the study.

Receipt of occupational therapy services (OT Group) or no receipt of occupational therapy services (NOT Group) were the independent variables. Dependent variables were length of time a patient had been restrained, secluded, restrained and secluded, and free from confinement. For the purposes of this study, the following mutually exclusive definitions were used:

1. *Restraint* is use of a device to control physical movement of the patient.
2. *Seclusion* is solitary confinement to a locked non—stimulating room.
3. **Restraint and seclusion** is binding of part or all of the patient's body while the patient is in a locked, secure room.

4. **Free from confinement** means the patient is not restrained, secluded, or restrained and secluded.

Modifying variables recorded included each subject's age, gender, education level, ward, psychotropic medications, race, number of prior admissions, and length of stay in the hospital. Only data from the first 90 days of each patient's stay were used.

### Results

Mean group characteristics for the dependent variables of restraint, seclusion, and restraint and seclusion, as well as the modifying variables of age, education level, length of stay, and number of admissions, are shown in Table 1. Group characteristics for race, gender, and condition are shown in Table 2.

Despite the sequential sampling techniques, the two groups were remarkably similar. The two most common Axis I diagnoses (Chronic Paranoid Schizophrenia, 295.32; and Schizoaffective Disorder, 295.70) and Axis III diagnoses (Extrapyramidal Symptoms, 333.90; and Insomnia, 780.52) were also the same for each group.

Analysis of covariance (ANCOVA) was used to examine differences between the groups for time restrained (R), secluded (S), restrained and secluded (R/S), and free from confinement (Free) with group as the main effect and the other independent variables as covariates. This procedure first adjusted for all covariates. Thus the main effect of group on hours of restraint, seclusion, and restraint and seclusion occurred while the other independent variables were held constant. Under these conditions the main effect of group did not approach significance for R\(^2\) (F\(_{1,113}\) = .852, P < .36), S\(^2\) (F\(_{1,113}\) = 1.512, P < .22), R/S\(^2\) (F\(_{1,113}\) = .267, P < .61), or Free\(^2\) (F\(_{1,113}\) = .422, P < .52).

### Table 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>OT Group (n = 60)</th>
<th>NOT Group (n = 60)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>47.6 18.3 20-89</td>
<td>45.5 15.8 22-81</td>
</tr>
<tr>
<td>Education (years)</td>
<td>11.7 1.9 8-17</td>
<td>11.8 2.7 3-18</td>
</tr>
<tr>
<td>Length of stay (days)</td>
<td>162.8 76.0 90-476</td>
<td>165.0 69.5 91-395</td>
</tr>
<tr>
<td>Restraint hours total</td>
<td>9.5 39.7 0-214</td>
<td>24.1 113.9 0-793</td>
</tr>
<tr>
<td>Seclusion hours total</td>
<td>9.9 28.8 0-202</td>
<td>5.3 14.3 0-83</td>
</tr>
<tr>
<td>Restraint/seclusion hours total</td>
<td>2.8 7.2 0-40</td>
<td>4.1 10.2 0-48</td>
</tr>
<tr>
<td>Free hours total</td>
<td>6218.9 64.2 5826-6240</td>
<td>6206.7 117.3 5440-6240</td>
</tr>
</tbody>
</table>

### Table 2

<table>
<thead>
<tr>
<th>Variables</th>
<th>OT Group (n = 60)</th>
<th>NOT Group (n = 60)</th>
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</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>29 48</td>
<td>31 52</td>
</tr>
<tr>
<td>Female</td>
<td>31 52</td>
<td>29 48</td>
</tr>
<tr>
<td>Race</td>
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<td></td>
</tr>
<tr>
<td>White</td>
<td>49 82</td>
<td>51 85</td>
</tr>
<tr>
<td>Black</td>
<td>4 7</td>
<td>3 5</td>
</tr>
<tr>
<td>Asian</td>
<td>4 7</td>
<td>4 7</td>
</tr>
<tr>
<td>Other</td>
<td>3 5</td>
<td>2 3</td>
</tr>
<tr>
<td>Axis I diagnoses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>295.70(^a)</td>
<td>10 16.7</td>
<td>13 21.7</td>
</tr>
<tr>
<td>295.32(b)</td>
<td>10 16.7</td>
<td>12 18.4</td>
</tr>
<tr>
<td>Axis III diagnoses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>780.50(c)</td>
<td>18 30</td>
<td>20 33.4</td>
</tr>
<tr>
<td>333.90(d)</td>
<td>17 28.3</td>
<td>22 36.7</td>
</tr>
</tbody>
</table>

\(^a\)Schizoaffective disorder  
\(^b\)Schizophrenia, paranoid type, chronic  
\(^c\)Insomnia related to a known organic factor  
\(^d\)Extrapyramidal symptoms

### Discussion

The finding that the two groups did not differ significantly for amount of time in restraint and time out of restraint could have several explanations, as follows:

1. When in restraints, a patient was not available for occupational therapy.
2. All of the time that patients spent in occupational therapy was unknown, due to unclear documentation.
3. The time spent in occupational therapy may not have been frequent enough, of enough duration, or efficacious enough to make a difference.
4. A few patients in both groups were confined for an extended amount of time, thus skewing the results.
5. The number of incidents of confinement, rather than the hours of confinement, may have been a more sensitive measure for analysis.

Those persons restrained, secluded, or restrained and secluded early in the 90 days in the admission wards were frequently the same persons so confined later. Of the 120 subjects, 55 were never restrained, secluded, or restrained and secluded (see Table 3).
With a retrospective study and a sequential sampling, it is recognized that differences in the dependent variables (R, S, R/S, Free) may have occurred due to differences in certain characteristics of the groups that were not matched. The ANCOVA test showed no significant differences due to the main effect of group. It can also be argued that the minimum of one therapy session every 30 days was not adequate to influence the behaviors that led to confinement.

Because this was a retrospective study, the controls that a prospective study would have had were absent. For instance, those selected for occupational therapy (i.e., OT Group) may initially have been at a higher risk for restraint or seclusion. Conversely, occupational therapists may have avoided those they considered inappropriate for therapy due to behavioral problems (i.e., NOT Group). Either situation would have created a potential selection bias.

Psychotropic medications were recorded but not considered a variable in this study. Records indicated that all subjects were given medications; however, some of the medications were used only one time and many subjects received several different drugs. Most subjects (76%) received lorazepam for psychosis: 60% received benztpine mesylate for extrapyramidal symptoms (EPS). Many staff members at this hospital believed that only medications effectively reduced the need for behavioral confinement, and Fischer (1991) suggested that psychotherapeutic interventions in the absence of adequate drug therapy of psychotic disorders leads to suboptimal outcomes.

Several factors kept patients from qualifying for OT Group in addition to the shortage of therapists. When patients were confined, they were not available for therapy, and once stabilized behaviorally, patients were often discharged to a less restrictive living situation. One such situation, the Program for Adaptive Living Skills (PALS), which was developed and implemented by an occupational therapist, was located on the hospital grounds, but is no longer administratively connected with the hospital grounds. Therefore, the number of hours spent in the occupational therapy program PALS was not available in the records. Lack of these data severely affected the outcome of this study and was a study limitation.

The major factor disqualifying subjects from the OT Group, as well as affecting the integrity of the data for this group, was inadequate documentation. One such example, “Patient has been attending relaxation group last 888...” was not specific enough to establish whether the dates qualified the patient for OT Group on the basis of the minimum of one session every 30 days, and made it impossible to determine how many hours were spent in occupational therapy sessions.

Future studies should consider random assignment to groups that require specific and uniform documentation of occupational therapy services that could be quantified. This would increase the integrity and usefulness of the occupational therapy data. If occupational therapy data are specific and uniform, a prospective study might better ascertain the effectiveness of occupational therapy in decreasing the need for behavioral confinement in a psychiatric setting.

Conclusion

A retrospective record review showed no significant differences between patients who did and did not receive occupational therapy services, for time spent in confinement. Because retrospective record reviews must rely on the data available, a major limitation in this study was the lack of specificity in the documentation of occupational therapy services.

References


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