

Exploring the Use of Seclusion and Restraint with Deaf Psychiatric Patients: Comparisons with Hearing Patients

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Abstract Archival data of seclusion and restraint events in a group of deaf adults ($n = 30$) was compared with a random sample of hearing adults with intellectual disabilities (ID) ($n = 30$) and a random sample of hearing adults without ID ($n = 51$) admitted to a state hospital from 1998 to 2008. Only 12% of the hearing non-ID group experienced a seclusion or restraint versus 43% of the deaf group. The ID group also showed significantly higher rates of seclusion and restraint than the hearing non-ID group (30 vs. 12%). Patients in the deaf and ID group were significantly more likely to be diagnosed with impulse control disorders (23 and 23%, respectively), which may have contributed to the higher utilization of seclusion and restraint procedures in these groups. Deafness-related cultural and linguistic variables that impact the use of seclusion and restraint are reviewed.

Keywords Deaf · Seclusion and restraint · Deaf culture

The use of seclusion and restraint in psychiatric hospitals has been under increasing scrutiny with mandates from the Centers for Medicaid and Medicare (CMS) and the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) aimed at reducing the use of these procedures. Although the use of seclusion and restraint remains controversial, most institutions approve the use of these measures as a “last resort” when imminent risk of danger to the patient or others exists. The implementation of seclusion and restraint procedures in special populations (e.g. geriatric patients, patients with comorbid mental illness and intellectual disabilities (ID), children/adolescents) has garnered increased attention from hospital administrators and advocacy groups [1].

A population that requires unique cultural and linguistic competencies is the Deaf and severely hard of hearing community. The use of seclusion and restraint in the deaf inpatient population poses challenges that are overlooked by clinicians unfamiliar with Deaf Culture

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and American Sign Language (ASL). The National Association of State Mental Health Program Directors (NASMHPD) released a technical report on the reduction of seclusion and restraint in the deaf and hard of hearing [2]. In this report, the NASMHPD review some of the modifications to seclusion and restraint needed when applied to a deaf patient (e.g. selecting interventions that allow both or at least one hand free for signing, using interventions that allow the patient to have a clear view of his/her environment and enable the patient to clearly see the interpreter or signing staff) and provide recommendations for interventions at the primary, secondary, and tertiary levels to assist organizations in minimizing the use of seclusion and restraint.

The deaf inpatient population might be particularly susceptible to encountering seclusion or restraint during a hospitalization due to a number of factors. First, reviews of the vast seclusion and restraint literature suggest that common precipitants for the utilization of seclusion and/or restraint include agitation, history of aggression, aggression against staff/patients, threats of physical aggression, and self-injurious behaviors [3]. As opposed to hearing inpatients whose reasons for admission are likely due to an exacerbation of psychotic symptoms or a mood episode, a majority of the deaf patients being treated in state psychiatric hospitals are in need of hospitalization due to problems with behavioral impulsivity, aggression, self-injury, poor self-care and socially inappropriate behavior. Many of these deaf inpatients have diagnoses of impulse control disorders, personality disorders and pervasive developmental disorders as their primary psychiatric illness [4, 5]. Second, patients with a dual diagnosis of psychiatric illness and ID have also been found to be more likely to experience seclusion and/or restraint during a hospitalization [3]. The deaf patients presenting for inpatient psychiatric treatment at state-operated facilities have been shown to have higher rates of ID than hearing patients [4, 5]. Thirdly, researchers in deaf mental health have documented a high prevalence of language dysfluency in deaf adults presenting for inpatient treatment at state psychiatric facilities. In 2006, researchers found that 75% of the deaf inpatients admitted to a specialized deaf psychiatric unit were not fluent in ASL, English or any language [6]. Moreover, in a follow up study published in 2009, 66% of the deaf inpatients sampled were nonfluent in any language [4]. As may be expected, language deficits, sometimes severe language deficits, are likely to contribute to the types of behavioral problems (e.g. aggression) that require physical intervention in the form of seclusion or restraint. In fact, low expressive communication ability in hearing patients with ID and mental illness has been found to be a strong predictor for aggressive behavior [7]. Fourth, the lack of culturally and linguistically competent clinicians and staff may impact the use of seclusion and restraint in the deaf inpatient population. For example, nursing staff may misinterpret the expressive nature of ASL or loud, vocal utterances made by deaf patients as threat signals and inadvertently escalate a situation by responding defensively.

The NASMHPD technical report calls for the collection of data on the rates of seclusion and restraint in deaf and hard of hearing patients [2]. Although the impact of a variety of demographic variables, diagnoses, environmental conditions, and precipitants on the rates of seclusion and restraint have been examined in the hearing inpatient population, no study has investigated the rates of seclusion and restraint in the deaf population. The aim of the present study is to examine the use of seclusion and restraint procedures in a deaf and severely hard of hearing inpatient population in comparison to two hearing psychiatric inpatient groups who were admitted to a state psychiatric hospital from 1998 to 2008.

Methods

Archival data of 111 adult inpatients admitted to a Midwestern state psychiatric hospital between January 1, 1998 and November 20, 2008 was reviewed for this study. All study procedures were reviewed and approved by a university-based institutional review board. Due to the use of only archival data in this study, informed consent from participants was not required. The patients were divided into three comparison groups. The deaf patient group ($n = 30$) comprised individuals with a Diagnostic and Statistical Manual-Fourth Edition-Text Revision (DSM-IV-TR) [8] axis III diagnosis of bilateral deafness or severe hardness-of-hearing (i.e. only partial comprehension of verbal communication even with the use of assistive devices). The ID group ($n = 30$) was comprised of hearing inpatients with a DSM-IV-TR diagnosis of mild or moderate mental retardation on axis II. Lastly, the hearing non-ID group ($n = 51$) was defined as those without a diagnosis of an ID on axis II and without a diagnosis of deafness or hardness-of-hearing on axis III. All patients were 18 years of age or older.

The mean ages of the deaf, ID, and hearing non-ID groups were 36.0 (SD = 13.9), 37.7 (SD = 13.7) and 34.5 (SD = 10.5), respectively. The mean years of education of the deaf, ID, and hearing non-ID groups were 11.2 (SD = 2.1), 9.4 (SD = 2.1), and 12.3 (SD = 2.4). The deaf group was comprised of 16 men (53.3%) and 14 women (46.7%), the ID group was comprised of 15 men (50.0%) and 15 women (50.0%) and the hearing non-ID group was comprised of 23 men (45.1%) and 28 women (54.9%). With regard to racial/ethnic composition, the deaf group was 73.3% Caucasian ($n = 22$), 10.0% African-American ($n = 3$), 10.0% Asian ($n = 3$) and 6.7% Native American ($n = 2$). The ID group was 66.7% Caucasian ($n = 20$), 26.7% African-American ($n = 8$) and 3.3% Hispanic ($n = 1$). The hearing non-ID group was 66.7% Caucasian ($n = 34$) and 33.3% African-American ($n = 17$).

Within the deaf group, type of school attended was 77% ($n = 23$) deaf residential, 3% ($n = 1$) blind residential, 33% ($n = 10$) public and 10% ($n = 3$) unknown. Sixty-seven percent were ($n = 20$) deaf, 3% ($n = 1$) deaf-blind, and 30% ($n = 9$) hard-of-hearing. Sixty-seven percent ($n = 20$) communicated only in ASL, 20% ($n = 6$) with ASL and English, 7% ($n = 2$) with English only, and 7% ($n = 2$) with gestural communication. Patients' ASL fluency and English fluency was not assessed.

Patients included in the sample were all court-committed to psychiatric treatment and admitted to locked psychiatric units. The deaf patients were all admitted to a single, combined hearing and deaf unit with specialized programming for the deaf and full-time ASL interpreters.

Results

The demographic characteristics of the deaf, ID and hearing non-ID groups were examined. One-way analysis of variance was utilized to examine group differences in age and education. The means of the deaf patient group, the ID group and the hearing non-ID group were not significantly different with regard to age. Nevertheless, the groups did differ on years of education $F(2, 101) = 14.58, p < .01$. Not unexpectedly, Bonferroni post hoc t-tests showed that the ID group had significantly fewer years of education than the deaf ($p < .01$) or hearing non-ID ($p < .01$) groups. There was not a significant difference between the deaf and hearing non-ID groups on years of education. Two-way contingency table analyses were used to examine differences in gender and racial composition. No

differences in gender were found among the deaf, ID, and hearing non-ID groups however, the groups did differ significantly in racial/ethnic composition $\chi^2(10, n = 111) = 18.22, p < .05$.

Diagnostic differences between the groups were examined using two-way contingency table analysis (see Table 1). The deaf, ID and hearing non-ID group were found to differ significantly in the rates of impulse control disorders $\chi^2(2, n = 111) = 13.62, p < .01$, pervasive developmental disorders $\chi^2(2, n = 111) = 8.32, p < .01$, personality disorders $\chi^2(2, n = 111) = 7.59, p < .05$, and mental retardation $\chi^2(2, n = 111) = 82.08, p < .01$. As compared to patients in the hearing non-ID group, patients in the deaf group ($p = .001$, Fisher's Exact Test) and ID group ($p = .001$, Fisher's Exact Test) were more likely to be diagnosed with impulse control disorders. Deaf patients were more likely than patients in the hearing non-ID group to be diagnosed with pervasive developmental disorders ($p = .048$, Fisher's Exact Test) and less likely than hearing non-ID patients to be diagnosed with personality disorders ($p = .015$, Fisher's Exact Test). The deaf group had fewer patients diagnosed with mental retardation ($p = .001$, Fisher's Exact Test) than the ID group but had significantly more patients diagnosed with mental retardation than the hearing non-ID group ($p = .001$, Fisher's Exact Test).

Two-way contingency table analyses were used to examine the occurrence of seclusion and restraint episodes in the deaf, ID, and hearing non-ID groups (see Table 2). The groups differed significantly in the percentage of patients experiencing incidents of seclusion $\chi^2(2, n = 111) = 10.27, p < .01$, restraint $\chi^2(2, n = 111) = 6.35, p < .05$, or any incident of seclusion/restraint $\chi^2(2, n = 111) = 10.86, p < .01$. Specifically, patients in the deaf group were more likely to experience a seclusion ($p = .003$, Fisher's Exact Test), restraint ($p = .024$, Fisher's Exact Test) or any incident of seclusion or restraint ($p = .002$, Fisher's Exact Test) during hospitalization than patients in the hearing non-ID group. Patients in the ID group were more likely to experience any incident of seclusion or restraint (Fisher's Exact Test, $p = .024$) during their hospitalization than patients in the hearing non-ID

Table 1 Axis I and axis II diagnoses by group

| | Deaf | | ID | | Hearing non-ID | | χ^2 |
|-------------------------------------|----------|-------------------|----------|---------------------|----------------|-------------------|-----------|
| | <i>n</i> | % | <i>n</i> | % | <i>n</i> | % | |
| <i>Axis I diagnoses</i> | | | | | | | |
| Psychotic disorders | 13 | 43.3 | 20 | 66.6 | 31 | 60.7 | <i>ns</i> |
| Mood disorders | 10 | 33.3 | 8 | 26.6 | 18 | 35.2 | <i>ns</i> |
| Anxiety disorders | 6 | 20.0 | 3 | 10.0 | 11 | 21.5 | <i>ns</i> |
| Impulse control disorders | 7 | 23.3 ^a | 7 | 23.3 ^b | 0 | 0.0 ^{ab} | $p < .01$ |
| Pervasive developmental disorders | 3 | 10.0 ^a | 0 | 0.0 | 0 | 0.0 ^a | $p < .01$ |
| Substance use disorders | 6 | 20.0 | 13 | 43.3 | 23 | 45.0 | <i>ns</i> |
| Learning/language disorders | 3 | 10.0 | 1 | 3.3 | 1 | 1.9 | <i>ns</i> |
| Cognitive disorders (e.g. dementia) | 1 | 3.3 | 1 | 3.3 | 1 | 1.9 | <i>ns</i> |
| <i>Axis II diagnoses</i> | | | | | | | |
| Borderline intellectual functioning | 2 | 6.7 | 0 | 0.0 | 0 | 0.0 | <i>ns</i> |
| Mental retardation | 10 | 33.3 ^a | 30 | 100.0 ^{ab} | 0 | 0.0 ^{ab} | $p < .01$ |
| Personality disorders | 5 | 16.7 ^a | 8 | 26.6 | 23 | 45.0 ^a | $p < .05$ |

ns nonsignificant

Values denoted with a superscript were significantly different from each other, $p < .05$

Table 2 Seclusion and restraint episodes by group

| Variable | Deaf patients (<i>n</i> = 30) | | ID patients (<i>n</i> = 30) | | Hearing non-ID patients (<i>n</i> = 51) | | χ^2 |
|---|-----------------------------------|-------------------|---------------------------------|-------------------|---|--------------------|----------|
| | <i>n</i> | % | <i>n</i> | % | <i>n</i> | % | |
| Patients with episode of seclusion | 10 | 30.0 ^a | 5 | 16.7 | 3 | 6.0 ^a | .006 |
| Patients with episode of restraint | 10 | 30.0 ^a | 8 | 26.7 | 6 | 12.0 ^a | .042 |
| Patients with episode of seclusion or restraint | 13 | 43.0 ^a | 9 | 30.0 ^b | 6 | 12.0 ^{ab} | .004 |

Values denoted with ^a were significantly different from each other at the level of $p < .01$

Values denoted with ^b were significantly different from each other at the level of $p < .05$

group. There was no significant difference between the deaf patients and patients with ID in the occurrence of seclusion or restraint.

Discussion

The results of this preliminary study examining seclusion and restraint among the deaf inpatient psychiatric population show a significant difference in the rates of seclusion and restraint between the deaf and hearing non-ID group. Whereas only 12% of the hearing non-ID group experienced a seclusion or restraint, 43% of the deaf group experienced a seclusion or restraint during hospitalization. The ID group also showed significantly higher rates of seclusion and restraint than the hearing non-ID group (30 vs. 12%). Although the deaf patients were secluded and restrained more than the ID patients (43 vs. 30%), this difference did not reach statistical significance. Interestingly though, only 33% of the deaf patients had comorbid ID, yet had rates of seclusion and restraint equal to or greater than a group composed entirely of patients with ID. This would suggest that other factors beyond ID may have led to seclusion and restraint among the deaf inpatient population.

One possibility is the differing rates of impulse control disorders found between the deaf, ID, and hearing non-ID groups. Whereas, the deaf and ID groups had equivalent rates of impulse control disorders (23.3% in each group) the hearing non-ID group had no patients diagnosed with these disorders. Impulse control disorders, by definition, indicate a lack of inhibition of inappropriate urges/behaviors. Often times, the urges that are ineffectually inhibited are the same behaviors that tend to result in the use of seclusion or restraint (e.g. aggression, self-injury).

There are also numerous deafness-related factors that may potentially lead to seclusion and restraint among the deaf patient population that may have contributed to the findings of this study. These factors could include lack of understanding of Deaf culture and miscommunication or misinterpretation of threat signals. It should be noted that these data were drawn from a general state hospital psychiatric unit that provides treatment to both deaf and hearing inpatients. Full-time interpreters were available; however, none of the treating clinicians or nursing staff were ASL fluent or possessed cultural competence in Deaf culture. As such, the strong possibility existed for cultural misunderstanding and miscommunication and this condition may have contributed to the high rates of seclusion and restraint observed in the deaf group in this study. Although ASL interpreters were available, the level of skill among interpreters varies, as well as the interpreter's comfort and experience working with psychiatric patients. Interpreters also vary in their extent of

exposure to deaf people with significant language dysfluency. Other studies have identified a much higher rate of language dysfluency among deaf psychiatric inpatients than among other deaf populations [4, 6] and while the language fluency of the deaf inpatients in this study was not formally assessed, 7% of the patients relied solely on gesture and mime to communicate as they had no formal language. It is likely that several of the 66.6% of patients who did use ASL may not have been fluent signers.

The technical report published by NASMHPD provides a number of recommendations for clinicians and health care organizations to further the aim of reducing the number of seclusions and restraints used with deaf psychiatric patients. These include utilizing ASL interpreters trained to work with individuals with psychiatric illnesses, a discussion upon admission with the deaf patients about seclusion and restraint where there can be mutual understanding of the reasoning behind the procedure and learning what can facilitate communication, identifying preferred methods of distress reduction, staff education about Deaf culture and ASL proficiency, and communication assessment upon admission designed to identify level of language fluency and preferred language.

This study represents an initial examination of seclusion and restraint in deaf inpatients, however, a few limitations of the study should be noted. As the data from this study was drawn from one state psychiatric hospital, the sample sizes were rather small. Moreover, past research on seclusion and restraint has found that idiosyncratic, institution-specific factors can influence rates of seclusion and restraint and such factors may have played a role in the rates of seclusion and restraint observed in this study [3]. In addition, this study did not examine other variables that have been associated with seclusion and restraint including staff education, staffing levels, and administrative attitudes toward use of seclusion and restraint [9].

Future research should involve larger sample sizes in order to conduct a detailed analysis of diagnostic and demographic data of patients who experience seclusion and restraint. Inclusion of data from a number of psychiatric institutions would minimize idiosyncratic factors that impact seclusion and restraint rates. Detailed analysis of the precipitants of seclusion and restraint episodes should be done to determine the role of miscommunication and cultural misunderstanding. Comparisons of seclusion and restraint rates between generalized and specialized deaf units where staff/clinicians are ASL fluent and culturally competent would also be useful.

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