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## **The Power of Day-to-Day Motivational Techniques and Family Participation in Reducing Seclusion**

**A Comparison of Two Admission Wards With  
and Without a Seclusion Prevention Protocol**

*ABSTRACT: The use of seclusion in psychiatric practice is a controversial issue in the Netherlands, as a number of recent studies have shown seclusion to be a predominant restrictive measure. In contrast to many surrounding countries, Dutch legislation is arranged in such a way that the protection of the physical integrity of the patient is more important than professional considerations with respect to the treatment of severe mental illness. The opening of a new admission ward provided the opportunity to study the effect of a number of preventive measures both before and after admission on the use of seclusion. Two admission wards with the approximately the same staff compilation, the same*

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*admission criteria, and a comparable catchment area were followed for 29 months. In the experimental ward, a project was started with the aim to abandon seclusion in three years while, at the same time, reducing all other forms of restraint; the comparable ward had care as usual. The data show a decrease of number and duration of seclusion in the experimental ward in comparison to the ward providing care as usual. This difference could be related to a number of patient and ward characteristics.*

In the Netherlands, seclusion of psychiatric patients is a frequently applied intervention aimed at protection, control, and containment of potentially dangerous, aggressive behavior. Patients are locked up with or without their permission in specially designed rooms for care, nursing, and treatment to reduce environmental stimuli and protect against self-infliction of any harm [1]. Following the introduction of the Special Admissions Act for Psychiatric Hospitals (Bijzondere Opnemingen in Psychiatrische Ziekenhuizen) [1], governmental health-care inspectorate data show an increase in the use of restraint measures, especially seclusion [2], which may be related to a powerful curtailment of the “best will criterion” allowing psychiatrists before 1994 to coerce treatment following their judgment in the interest of the patient [3]. In the opinion of many Dutch psychiatrists, nurses, and policymakers, secluding patients is an unethical intervention with disputable therapeutic effects [4]. Moreover, no rationale for seclusion is yet substantiated through empirical research [5]. In line with this development from 2000 onward, a number of Dutch hospitals developed [6] and tested a set of quality criteria aimed at prevention of seclusion and other restraint measures [7].

The use of seclusion as a restrictive measure in psychiatry is associated mostly with aggression by the patient [8–10]. Friends or family members often have a high degree of expertise in the behavior of the patient and on how to deal with the acting out and aggression, despite often extreme conduct. Despite being ill, a patient also remains husband, child, neighbor, or parent [11–13]. Acting out or aggressive behavior may be understood as failing to cope with deranged mental processing within the context of a mental illness or a deranged personality [14–15], but it also may be seen as a reaction of the patient to being hospitalized and confronted with a set of limitations [16] or even aversive to staff behavior [17]. Such insight may be very helpful for nurses in determining the reasons for patients’ conduct.

Seclusion incidence and endurance varies wildly across Europe due to important differences in the organization of mental health-care. Most

of the European sources indicate an incidence of between 24 and 86 seclusion incidents per 1,000 admissions and a duration between 0.24 and 3.7 days per 1,000 patient days [18]. Some countries, however, apply seclusion sparsely [19–20].

After an admission, the patient must deal with a number of often confusing situations within the context of a ward with other patients being as ill or more seriously ill as themselves. Especially in involuntary admission, nurses are confronted with aggression [21]. Within this context, nurses feel the need to contain risk [22]. Bowers, Brennan, Flood, Lipang, and Oladapo [23] found that the ability of the staff to regulate their natural reactions in dealing with patients, together with the application of effective rules and routines for ward life, may successfully reduce conflicts on the ward and consequently reduce the need for containment measures. Efforts to reduce restraint measures must be clearly prioritized as a core ward objective supplemented by leadership [24] and embedded in repeated performance monitoring and feedback procedures [25–26]. A well-educated [27–28] and trained staff [29–31] also prove to be related to a decrease in the development of aggressive behavior in patients and, therefore, the frequency of seclusions. Well-educated nurses are trained in such areas as recognizing and applying preventive measures when confronted with aggression, ability to use self-defense techniques, awareness of the impact restraint and seclusion on patients, and knowledge of the patient as obtained by the patient's family or social network [7, 29, 31].

After the opening of a new built ward (Siependaal ward), a number of these considerations were taken into account in developing experimental conditions. On the assumption that seclusion did more harm as being traumatic and the assumption that restrain in general reflected more the relation between staff and clients, a project was started to abandon seclusion and diminish other forms of restrain in three years. The project was accompanied by a process evaluation built on and supported by a project leader and a researcher to supply data to the staff of the experimental ward. The experimental ward had a number of interventions developed during the project in comparison to care as usual:

1. All personnel were selected on consent with the main goals of the ward, aimed at prevention of seclusion as restrictive measure.
2. Team cohesion, which was necessary as the personnel were new to each other and needed to grow confidence in dealing with aggression, was stimulated by frequent team meetings.

3. Team training was aimed at prevention of aggression and at dealing with conflict and focused on restoring the relation with the patient.
4. Individual job coaching was provided as a follow-up of team training.
5. A proactive approach in detecting behavior preceding aggression was implemented by using information of the patient, the family, and community nurses in developing means to deal with patient behavior, which were described within a specified signaling plan.
6. Clear boundaries and limitations with respect to acting out behavior were communicated at admission.
7. After an involuntary admission, the dangerousness criteria as formulated within the home environment were reevaluated within the context of the admission.
8. During a first admission, information was gathered to compile specified signaling plans (i.e., plans aimed at early detection of behavior preceding aggression).
9. Agreement with the patient on treatment and signaling plan was valued as an important means in early detection of behavior preceding aggression.
10. Family participation was appreciated as a main component of treatment both in developing treatment goals as well as in describing specified signaling plans aimed at detection of behavior preceding aggression.
11. All staff members had an important input in developing treatment planning as opposed to the care as usual ward where the medical discipline dominated the decision process.
12. Finally, at regular intervals, a researcher collaborating with the experimental ward gave feedback on development of the numbers of restraint measures to the team.

The experimental ward was located in a rural township with a population of approximately 240,000 inhabitants in the middle of the Netherlands. The control ward providing care as usual (Riethorst ward) had the same function as the experimental ward and was located 30 miles from the experimental ward in a different rural township with a comparable catchment area. Both wards had a nonselective admission policy and the same staff patient ratio, with respect to various types of professionals. The experimental ward was equipped with the same number of seclusion rooms as the control ward. Treatment provided in the experimental ward was aimed at less and shorter seclusions and aimed at preventing the use of seclusion as a whole.

The main goal of this study was to explore the effects of different ward cultures on two wards on the use of seclusion. The following questions were addressed:

1. Does a different ward culture lead to
  - A. a difference in the number of seclusion incidents in an experimental ward as compared to a control ward?
  - B. shorter seclusion episodes in an experimental ward as compared to a control ward?
2. Does the number of seclusion incidents and the length of seclusion episodes develop through time in the experimental ward as compared to the control ward?
3. Are patient characteristics such as age, marital status, diagnosis and admission data related to the chance to be secluded?

## **Material and Methods**

### ***Setting***

The Siependaal ward had a capacity of 45 beds, and a patient–staff ratio of 0.79. The Riethorst ward had a capacity of 38 beds, and a patient–staff ratio of 0.82. Each department could rely on psychiatrist, a resident, a psychologist, and a social worker. Both wards were equipped with two seclusion rooms. The nursing teams on both wards were staffed with three nurses in the day and evening shift and two nurses in the nightshift. Data on the restraint measures were gathered on a day-to-day basis on a registration form filled in by nurses and checked on weekly rounds on both wards. Data of the Dutch Mental Health Inspectorate were used as a second check of this registration. Diagnosis were made in clinical routine procedures according to the DSM–IV criteria. Background data and information on admissions were gathered from the hospitals financial databases.

### ***Outcome***

The study design is a prospective cohort study. The wards were first compared on the variables as age, sex, marital status, diagnosis, admission duration, and readmission rate to investigate whether the admitted population was comparable. Diagnosis on Axis 1 of the DSM–IV was categorized in five main groups with a hierarchy of severity in deranged

behavior [32]: first, anxiety disorders; second, depressive disorders; third, bipolar disorders; fourth, psychotic disorders; and fifth, dementias and other brain disorders. On Axis 2, the 11 main categories of the DSM-IV were used.

The effect of the treatment experiment was investigated by comparing seclusion use between January 1, 2003, and June 1, 2005. Both seclusion incidence, expressed as the number of stated seclusion per 1,000 admissions [18], and seclusion duration, expressed in the number of seclusion days per 1,000 patient days [18], were calculated. Next to these main data, three seclusion patterns were identified and counted: (a) full seclusion, (b) partial seclusion, and (c) seclusion for nighttimes only.

The application of isolation rooms, fixation, coerced medication, and food and fluids was counted in the same way. Counting all restraint measures, such as isolation, fixation, and coerced medication and food was done to investigate whether a reduction in all measures or only in the use of seclusion was achieved. In theory, other measures could substitute seclusion, not necessarily leading to a reduction of restraint measures as a whole. These data were related to the number of admissions to compare the data to international incidence and prevalence rates.

### *Analysis*

The use of the seclusion rooms and other restraint measures over time was compared by the following means:

1. counts per quarterly tested by means of a  $\chi^2$  on the frequencies;
2. the duration in days of different seclusion patterns (full, partial, and night-time) tested by means of a stratified student test; and
3. a survival analysis using a stepwise Cox regression, in which the both the number of seclusion incidents as well as the duration of the seclusion measures compared between the wards as an outcome measure were imputed together with age, marital status, diagnostic category, time between admission and seclusion, admission duration, and readmission rate as predictors.

The first two analyses were repeated controlling for marital status, main diagnostic category, and admission duration to investigate whether specific patient categories had a different chance to undergo seclusion in both the experimental as well as the control ward. Of the Cox regression analysis, the hazard ratio, the Wald statistic, and significance of the predictors are presented. The hazard ratio represents the difference between

the cumulative chance of an event (i.e., seclusion) as defined in two strata (i.e., the two wards). The Wald statistic represents the power of the relation between predictor and outcome within the multivariate model.

## Results

In the 29 months, 1,470 different patients were admitted to the wards, with a mean duration of 26 days per admission. Of those patients, 708 were admitted more than once, with a maximum up to 15 admissions a patient. In total, these admissions added up to 2,533 admissions. The duration of the admissions in the Siependaal ward was slightly shorter than in the Riethorst ward (24 days vs. 28 days,  $p < 0.015$ ). The number of patients admitted more than once was somewhat higher in the Siependaal ward than in the Riethorst ward, and the bed occupation ratio in the Riethorst ward slightly lower than in the Siependaal ward (96 percent vs. 98 percent). In general, there were no important differences between the two wards that would either possibly confound or modify the outcome.

An important difference between the two wards was the secluded patients in the experimental ward concerned almost exclusively readmitted patients (34 of 39 incidents; 83 percent) whereas in the control ward, the incidents occurred less often in readmitted patients (49 of 130 incidents; 38 percent). Table 1 presents a comparison of ward and patient characteristics of both settings, showing the patients at the Siependaal ward were older, more often married, had more depressive disorders, and less psychotic disorders than in the patients at the Riethorst ward. The use of isolation room, coerced medication, and fixation occurred predominantly in the Riethorst ward. Because of the low frequency in the experimental ward, these measures are left out of the comparative analyses. Table 2 shows the development of the counts per quarterly of all, full partial and nighttimes seclusions over time.

The results show a significant difference between the experimental and the control ward occurring after the second year and remain significant in the third year. In the first year, patients had less chance to be secluded in the experimental ward as shown in the ward incidence ratios. This chance improves in the second year and is enhanced over the third half-year. When the different patterns of seclusion are compared, a difference in full and partial seclusion between the wards is observed. Full seclusion occurred more often in the control ward than in the experimental ward ( $\chi^2 = 14.7$ , d.f. = 21,  $p = 0.001$ ). However, the incidence of full seclu-

Table 1

**Comparison of Background Data Between Experimental Data and Control Ward**

	Siependaal		Riethorst	
	<i>n</i>	%	<i>n</i>	%
<i>Ward Characteristics</i>				
No. of admitted patients	768		702	
No. of admissions (range)	1,392 (1–12)		1,138 (1–17)	
Mean duration of admission (sd)*	24.3 (25.9)		27.6 (42.2)	
Patients with more than 1 admission	264	34.0	202	29.0
Seclusion incidents	39		130	
Patients				
Secluded**	30	4.0	79	11.0
In isolation	1	0.1	17	2.0
Receiving coerced medication*	6	1.0	37	5.0
Fixation incidents	0	—	11	2.0
Receiving coerced fluids and nurture	0	—	0	—
Male	332	43.0	332	46.0
Female	435	57.0	480	54.0
Mean age (sd)**	45.6 (14.8)		38.8 (11.7)	
Age range	17–86		16–77	
<i>Age categories</i>				
<25	52	7.0	91	13.0
25–34	131	17.0	177	25.0
35–44	196	26.0	207	30.0
45–54	187	24.0	151	22.0
>55	202	26.0	76	11.0
<i>Marital status*</i>				
Unmarried*	207	30.0	288	48.0
Married*	311	45.0	192	32.0
Divorced	138	20.0	108	18.0
Widowed	38	6.0	13	2.0
<i>DSM–IV Diagnosis Axis 1*</i>				
V 62.x–V71.09 (psychosocial problem)	21	3.0	23	3.0
300.xx (anxiety disorder)	119	16.0	144	21.0
296.xx (depressive disorder)**	212	28.0	123	18.0
296.x4 (bipolar 1 disorder)	52	7.0	69	10.0
295.x; 297.x, 298.x (psychotic disorder)*	130	17.0	153	22.0
292.2, 293.x, 294.x (dementia & brain disorder)	21	3.0	23	3.0
799.99 (undetermined)	213	28.0	167	24.0
<i>DSM–IV Diagnosis Axis 2</i>				
301.1, 1, 2 (Cluster A personality disorder)	3	0.4	2	0.3
301.5, 7, 81, 83 (Cluster A personality disorder)	31	4.0	55	8.0
301.4, 6, 82 (Cluster A personality disorder)	6	1.0	10	1.0
301.9 (personality disorder NAO)	27	4.0	63	9.0
799.99 (undetermined)	129	17.0	219	31.0
999 (no information)	572	75.0	353	50.0

\* significant difference,  $p < 0.05$ . \*\* significant difference,  $p < 0.01$ .



Table 2

### Number of Seclusions Over Time Counts Per Quarter

Quarterly	Siependaal ward: Experimental ward				Riethorst ward: Control ward			
	Seclusion types				Seclusion types			
	<i>n</i>	Full	Partial	Nighttime	<i>n</i>	Full	Partial	Nighttime
1	4	2	1	1	7	2	4	1
2	7	4	3	0	19	7	10	2
3	11	3	7	1	11	5	5	1
4	2	1	0	1	8	5	3	0
First year incidence	24	10	11	3	45	19	22	4
( <sup>χ</sup> / <sub>1,000</sub> )	6.7				14.7			
5	1	0	1	0	12	4	3	5
6	5	2	0	3	19	7	4	8
7	3	1	1	1	14	4	1	9
8	3	2	1	0	12	3	3	6
Second year incidence	14	5	3	4	57	18	11	28
( <sup>χ</sup> / <sub>1,000</sub> )	4.6				21.4			
9	1	0	0	1	20	1	3	15
10	0	0	0	0	9	0	0	9
Third half-year incidence	1	0	0	0	29	2	3	24
( <sup>χ</sup> / <sub>1,000</sub> )	0.7				26.1			

Note: For yearly and half-year comparisons,  $\chi^2 = 14.5, p < 0.00$ .

Table 3

**Comparison in Duration of Days Over the Seclusion Incidents**

Year	Experimental ward ( <i>n</i> )	Control ward ( <i>n</i> )
2003		
Patients	24	45
Seclusion		
Full	2.5	3.2
Partial	1.9	1.2
Nighttime	0.8	0.8
Total days	5.25	5.36
Total hours	89	95
Mean incident count	1.3*	1.9*
Prevalence (days/1,000 admission days)	8**	17**
2004		
Patients	12	54
Seclusion		
Full	2	3.8
Partial	0.5	0.5
Nighttime	0.7	0.5
Total days	3.7	4.8
Total hours	57**	102**
Mean incident count	1.2	1.4
Prevalence (days/1,000 admission days)	3**	19*

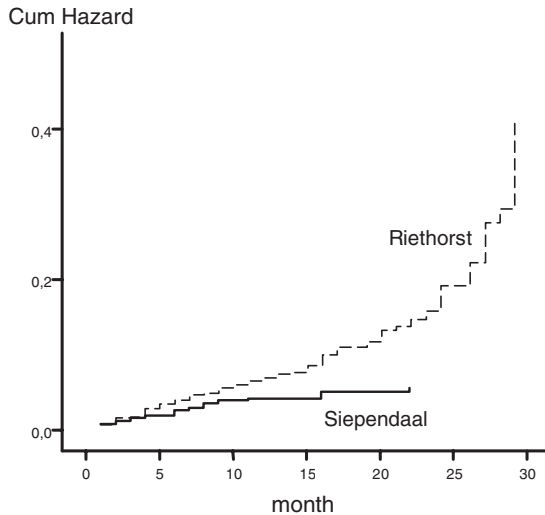
\* significant difference, student *t*-test,  $p < 0.05$ . \*\* significant difference, student *t*-test,  $p < 0.01$ .

sion also diminishes in the control ward over time, especially in the last half-year. Stratification of predictors to investigate effect modification show marital status and female sex prove to protect for seclusion ( $\chi^2 = 21.7$ , d.f. = 3,  $p = 0.000$ ). The Axis 1 diagnoses of bipolar disorder or psychotic disorder occurred in 84 of the 109 seclusions and in all of the seclusions occurring at the Siependaal ward ( $\chi^2 = 44.7$ , d.f. = 7,  $p = 0.000$ ). A personality disorder was registered in only 21 of the 109 seclusions, thus allowing no analysis.

Table 3 presents the comparison in the duration in days over the seclusion incidents, stratified over the years. The last half-year is left out of the comparison, as the Siependaal ward only had one seclusion in that time frame.

It is important to notice that the duration of the seclusions did not differ between the wards. That is, once secluded, the patients' duration

Figure 1

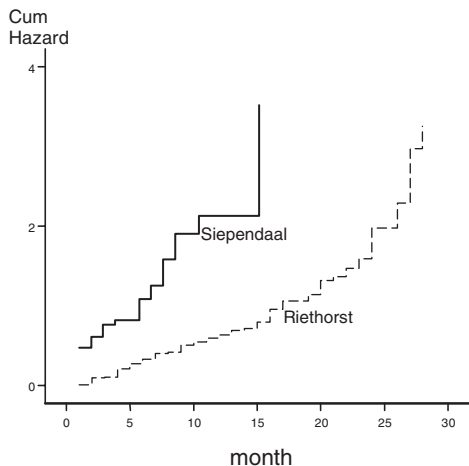
**Hazard Function Over Time (Seclusion Chance)**

in seclusion is not significantly different. The chance to be secluded is, however, far less when the experimental ward is compared to the control ward. Furthermore, our analysis shows that duration of admission was not related to the chance of being secluded on the experimental ward, whereas a longer admission was related to the chance to be secluded on the control ward. Analysis of these counts stratified to diagnostic category shows three main diagnostic categories to have some influence on the duration of the seclusion: a psychotic disorder, a bipolar 1 disorder ( $\chi^2 = 44.9$ , d.f. = 7,  $p = 0.000$ ) and a (borderline) personality disorder ( $\chi^2 = 2.5$ , d.f. = 6,  $p = 0.04$ ). These differences remain significant even in the small numbers of incidents in the experimental ward ( $\chi^2 = 29.7$ , d.f. = 7,  $p = 0.000$ ). The patients with a bipolar disorder had a mean stay of 6.8 days, those with a psychotic disorder had a mean stay of 4.5 days, and those with a borderline personality disorder had a mean stay of 3.7 days.

Figures 1 and 2 and Table 4 present the outcome of a Cox regression analysis, which was done to investigate underlying variables predicting seclusion chance and duration. Figure 1 presents the cumulative chance to be secluded as compared between the wards. Figure 2 shows the cumulative chance of seclusion duration once secluded. Table 4 presents the

Figure 2

**Hazard Function Over Time (Seclusion Duration)**



regression of patient characteristics on chance to be secluded in detail. The number of months the experimental ward existed was imputed as the time variable.

The Cox regression again confirms the findings of the counts per quarterly, showing a significant difference in number of seclusions ( $p = 0.000$ ; 169 seclusions for 109 patients) throughout time. In the Cox regression analysis, chance to being secluded is measured from the start of the experiment onward. The proportion of included cases was 4 percent (30 secluded patients on 768 admissions) in the experimental ward and 11 percent (79 secluded patients on 702 admissions) in the control ward. The hazard ratio of being secluded in the control ward as compared to the experimental ward was 2.8 over the first year and 5.6 over the second year, indicating the decline in the chance to be secluded in the experimental ward. Difference in seclusion chance proved to be predicted by age (younger age; Wald = 6.0,  $p = 0.01$ ), marital status (being married; Wald = 3.6,  $p = 0.05$ ), diagnosis (bipolar 1 disorder, psychotic disorder, and inversely by anxiety disorders; Wald = 33.1,  $p = 0.000$ ), and number of days after admission (the less days, the more

Table 4

**Regression Outcome**

Strata	Patient count	Event count			Censored	
		Total	2003	2004 onward		
Riethorst	79	130	70	60	11	
Siependaal	30	39	34	5	4	
Total	109	169	104	65	1,470	
Predictors	B	SE	Wald	Df	Sig.	Exp(B)
Age	-0.260	0.011	6.055	1	.014	0.974
Marital status			5.842	3	.120	
Unmarried	-0.765	0.685	1.247	1	.264	0.465
Married	-1.240	0.652	3.622	1	.047	0.289
Divorced	-0.798	0.658	1.472	1	.225	0.450
Sex	0.189	0.208	0.831	1	.362	1.208
DSM-IV Diagnosis			33.130	7	.000	
V 62.x-V71.09 (psychosocial problems)	-0.227	0.560	0.165	1	.685	0.797
300.xx (anxiety disorder)	-1.194	0.455	6.879	1	.009	0.303
296.xx (depressive disorder)	-0.811	0.459	3.124	1	.077	0.444
296.x4 (bipolar 1 disorder)	-0.700	0.336	4.346	1	.037	2.013
295.x, 297.x, 298.x (borderline personality disorder)	-0.549	0.282	3.785	1	.049	1.731
292.x, 293.x, 294.x (dementia & brain disorder)	-0.472	0.637	0.550	1	.458	1.604
799.99 (undetermined)	-0.919	0.759	1.466	1	.226	0.399
Separation occurred in days after admission	-0.179	0.014	162.551	1	.000	1.195
Admission duration	0.36	0.425	0.470	1	.465	0.326
Readmission rate (per patient)	-0.067	0.378	0.178	1	.785	0.563

Notes: Overall score:  $\chi^2 = 609.411, p = 0.00$ . Wald is used as strata variable.

chance; Wald 162.5,  $p = 0.000$ ) in both wards. Admission duration and readmission rate proved to have no predictive value for the difference in chance to be secluded.

## Conclusion and Discussion

This study investigates whether a ward that attempted to change the culture of dealing with patients could have an effect on reducing seclusion and other forms of restraint in comparison with care as usual. By using data and self-reflection from teams in two comparable wards (i.e., experimental and care as usual) in the Netherlands, we find that the experimental ward developed different ways of dealing with patients and their significant others.

This study shows a powerful difference between an experimental ward and a comparable control ward in the number of seclusion incidents. This difference already could be observed over the first year but was more powerful after the first year. The results further show that the experimental ward was especially successful in preventing seclusion. Once a patient was secluded, the seclusion duration was only somewhat shorter in the second and third year in the experimental ward than in the control ward. A careful observation of the development of the number of seclusions as well as the type of seclusion either being full, partial, or only nighttimes shows partial and nighttimes seclusion episodes also increased over time in the control ward, suggesting some kind of carryover effect. When we look at characteristics of the secluded patients, the data show seclusions occurred predominantly in male, unmarried patients with a diagnoses of a bipolar disorder, a psychotic disorder, or a borderline personality disorder. These findings are in line with a recent German study suggesting that restraint measures are used in these same diagnostic categories [33–34]. Also, variables such as seclusion on day of admission and readmission determined both seclusion incidence and seclusion duration. In the Siependaal ward (the experimental ward), seclusions occurred mostly in readmitted patients.

An important limitation of this study is that the comparison only shows the combination of interventions provided in the experimental ward was successful. One of the lessons of the study is that some kind of description of the process of change by means of qualitative research could be helpful in developing treatment standards. Because of the level of data acquisition (i.e., few variables on many patients), the study provides no

information on which components of ward culture were successful. This general level of data acquisition and analysis was necessary to allow an epidemiological estimation. Moreover, for a sound analysis among the predictors and chance of seclusion, a full description of all admitted patients at both wards was necessary, thus limiting the gathering of detailed information on an individual level. The continuous process of data acquisition may be expected to be related to an effect of underreport. Nurses had to assess data over a long period of time.

Both in the experimental ward, but maybe even more so in the control ward, the hectic pace of the daily practice of an admission ward may cut an extensive administration of data short. This effect may be expected to be less with respect to the seclusion data but have some impact on the registration of the other restrain measures [2]. Also, some extent of underreporting may be observed in the diagnostic data, especially with respect to the personality disorders. Despite underreporting, a number of diagnoses remain significant predictors of seclusion, suggesting a powerful underlying relationship.

A main problem in the comparison of these data with comparable data in international studies is the lack of an international standard [34] as to how such data should be acquired, calculated, and presented. The day-to-day registration provided understanding of various patterns of seclusion use. Consequently, information at such a detailed level could be compared to only a few recent studies in Europe and a number of outdated studies in the United States. Following Bowers [18], we chose to relate incidence to number of admissions because a comparison with population data is dependent on the mental health system in the country. With this in mind, the incidence of seclusion use in both wards (varying between 0.7 and 26.1 per 1,000 admissions) proved to be far lower than the incidence rates in previous Dutch studies, suggesting a seclusion incidence of between 10 and 25 percent in admission wards [35]. Other European studies [33–34, 36–38] show counts from 66 up to 177 per 1,000 admissions per year. Only American [39–40], Australian [41], Greece, and Italian data [19] show counts of less seclusions, varying between 1.3 and 40 seclusions per 1,000 admissions. The rural location of both wards may explain these relatively low counts. Another explanation could be that both units were competitive in their aim to reduce restrain.

The results in this study show that significantly less seclusions occurred in the experimental ward. Although hard data could not be presented, there is no indication that reducing seclusion gave a shift to other forms of

restrain, such as coerced medication or fixation. This finding suggests that restraint is more a cultural phenomena than a treatment modality. Although the data give some suggestions about what cultural interventions may diminish the risk for seclusion or other forms of restraint, more research is needed.

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