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PREVALENCE AND CLINICAL CHARACTERISTICS OF INVOLUNTARY HOSPITALISATION IN PSYCHIATRY

Summary of Doctoral Dissertation

Biomedical sciences, Medicine (07 B)

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Vytautas Raškauskas

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ABBREVIATIONS

FIH patients – formally involuntarily hospitalised patients

IIH patients – informally involuntarily hospitalised patients

VHNFC patients – voluntarily hospitalised not feeling coerced patients

VMHC – Vilnius Mental Health Centre

MPSC – MacArthur Perceived Coercion Scale

VAS – Visual Analogue Scale

CAT – Clients' Scale for Assessment of Treatment

BPRS – Brief Psychiatric Rating Scale

GAF – Global Assessment of Functioning

MANSA – Manchester Short Assessment of Quality of Life

MOAS – Modified Overt Aggression Scale

INTRODUCTION

Providers of health care services in psychiatry often employ coercive treatment interventions, such as involuntary hospitalisation, seclusion, physical restraint and forced medication, which are atypical of other fields of medicine. The aforementioned measures restrict the freedom of a patient to different extents. Modern psychiatry adheres to the principle that determination whether public protection complies with the rights of an individual is of utmost importance when assessing coercion in psychiatry. Regulation of the application of coercive measures in psychiatry is a complicated and ongoing process. This regulation needs to combine potentially inter-conflicting principles: the autonomy of a patient, the necessity of (right to) adequate treatment even when a patient's capacity to adopt a competent decision is decreased, and concern of the public about its safety. As coercion experienced during admission to psychiatric inpatient facilities may be followed by a lot of negative consequences, ways of its reduction and prevention have to be developed. Currently, many European states aim at developing new or improving the existing guidelines on coercive measures, including involuntary hospitalisation, and drawing up international guidelines on the best clinical practices. The use and likely misuse of coercion in psychiatry were extensively discussed in different countries and

even though initially this discussion was based on abstract principles, a gradual shift to research-based arguments has taken place. As the predominant form of coercion in psychiatry is involuntary hospitalisation, no wonder that this aspect of coercion has received major attention and comments from those concerned.

Contemporary investigations of coercion in psychiatry are chiefly based on the concept of formal and informal coercion in psychiatry that was formulated in the nineties of the last century. It is important that investigations should cover assessment of the prevalence of formal coercion in psychiatry, i.e. coercion regulated by legislation and applicable on the basis thereof, clinical characteristics of the patients who experience it and coercion-impacting factors; however, yet more important is the determination of the prevalence of informal coercion in psychiatry, i.e. perceived coercion, as well as the factors having an impact on its degree. Assessment of coercion in psychiatry is needed in order to measure the quality of mental health care services by impacting amendment of legislation, identifying the coercion-influencing factors and determining the outcomes of the application of coercion.

Assessment of the outcomes of coercion in psychiatry provides relevant information on the significance of coercion as well as reasons for developing methods for preventing coercion and mitigating its consequences, and encourages their introduction into clinical practice. Among a wide variety of indicators used for the assessment of the outcomes of coercion in psychiatry the objective indicators reflecting the use of inpatient services, such as the indicators of a length of hospitalisation and subsequent re-hospitalisations, are regarded as the most precise ones.

THE AIM OF THE STUDY

The study is aimed at determining the prevalence of formal and informal involuntary hospitalisation, the clinical profile of involuntarily hospitalised patients, the factors that have an impact on the degree of coercion and the objective outcomes of involuntary hospitalisation.

OBJECTIVES

1. To determine the prevalence of formal involuntary hospitalisation in the catchment area of Vilnius Mental Health Centre.

2. To determine the frequency of manifestation of coercion perceived in the process of hospitalisation between formally involuntarily and voluntarily hospitalised patients.

3. To determine and compare the socio-demographic, clinical and treatment characteristics of formally involuntarily hospitalised patients and informally involuntarily hospitalised patients.

4. To determine and compare the degree of coercion perceived by formally involuntarily hospitalised and informally involuntarily hospitalised patients as well as the factors impacting it.

5. To determine and compare the three-year indicators of hospitalisation and rehospitalisation of formally involuntarily hospitalised patients and informally involuntarily hospitalised patients.

DEFENSIVE STATEMENTS

1. Part of the patients voluntarily admitted to acute psychiatric facilities experience informal coercion and by their socio-demographic characteristics and clinical symptoms as well as the degree of perceived coercion are similar to formally involuntarily hospitalised patients.

2. The degree of coercion perceived during hospitalisation is related with socio-demographic factors, psychopathology, the quality of life, patient aggression, formal involuntary hospitalisation and prescribed treatment.

3. The indicators showing the length of hospitalisation and rehospitalisation of formally involuntarily hospitalised and informally involuntarily hospitalised patients are poorer than those of voluntarily hospitalised patients who do not feel coerced.

SCIENTIFIC NOVELTY OF THE STUDY

This work for the first-ever time in Lithuania assessed the prevalence of formal involuntary hospitalisation in the catchment area of an inpatient psychiatric facility and established the frequency of perceived coercion between formal involuntary and voluntary psychiatric admissions.

The work presents a comparison of voluntarily hospitalised patients but who feel coerced, i.e. informally involuntarily hospitalised patients, with formally involuntarily hospitalised patients, and the analysis of the relationship of aggression with a degree of perceived coercion which was not addressed in any previous investigations, as well as the possible links of the psychopathological and other factors with coercion that were scarcely researched before this study.

It also evaluated the objective outcomes of coercion experienced during hospitalisation. The work for the first-ever time evaluated and compared the three-year indicators of rehospitalisation of formally involuntarily hospitalised, informally involuntarily hospitalised, and voluntarily hospitalised patients who do not feel coerced.

The findings of this work show the prevalence of the main forms of formal and informal coercion, supplement the available knowledge of the factors impacting perceived coercion and provide information on the similarities and differences between the patients who experience formal and informal coercion and on the indicators of rehospitalisation of these patients.
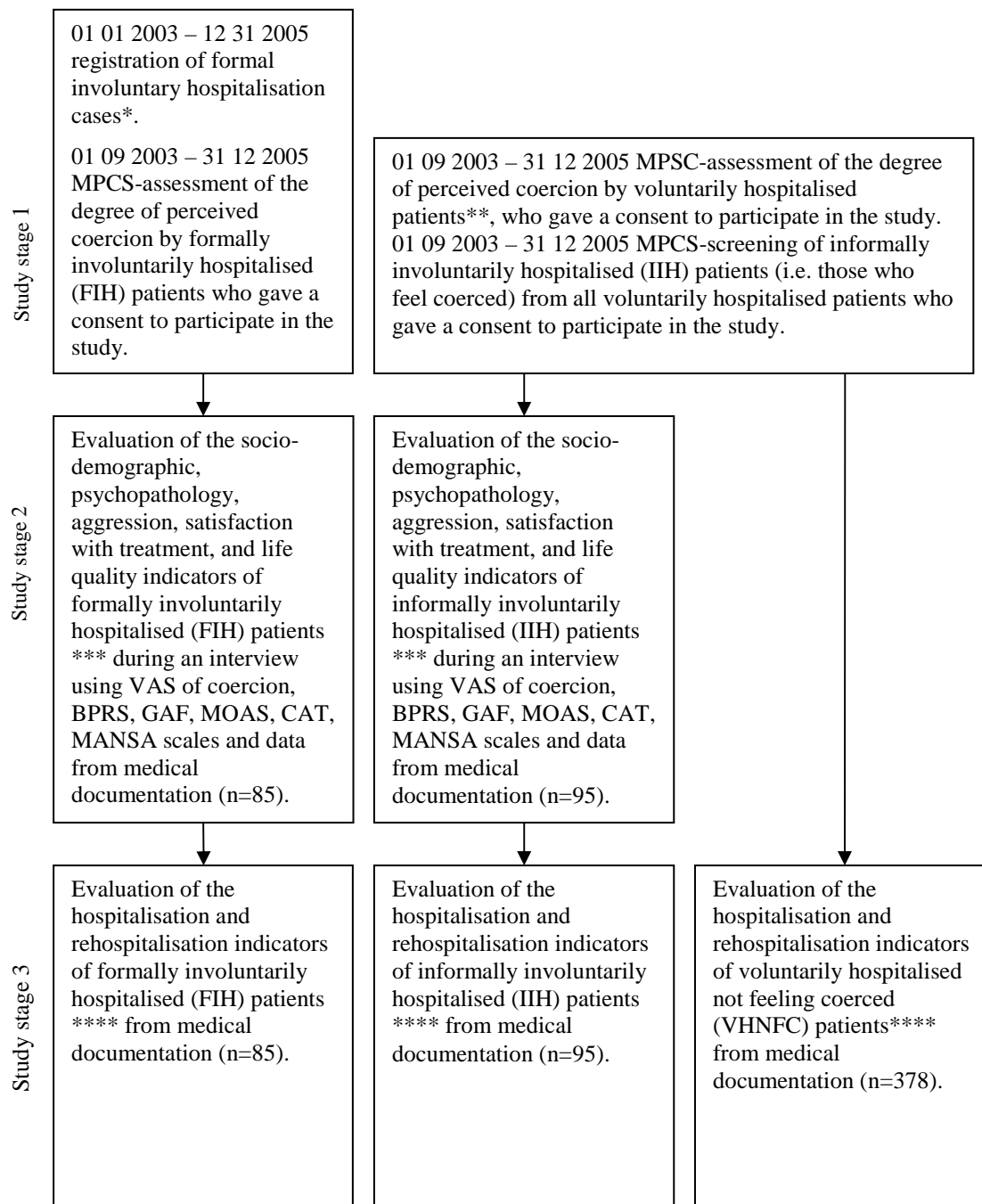
LITERATURE REVIEW

A review of literature presents the historical aspects and a modern concept of involuntary hospitalisation, and surveys the principles of legal regulation. It also presents the epidemiological data on involuntary hospitalisation in different countries of the world. It contains the analysis of the concept of objective and subjective coercion, the methodology of research carried out in this field as well as the published findings. Apart from that, it discussed the factors related with the degree of coercion and the objective outcomes of experienced coercion.

MATERIALS AND METHODS

This study employed the epidemiological descriptive, comparative and prospective comparative research models. The study covered the patients hospitalised in the departments of acute psychiatry (1st women and 1st men departments) of Vilnius Mental Health Centre. The study was started on 1 January 2003 and completed on 19 April 2009. The Lithuanian Bioethics Committee issued Authorisation No 45 (2003) to conduct this study.

Study stages, studied patients and study instruments

The study consisted of 3 stages (Fig. 1).

Study stage		
Study stage 1	01 01 2003 – 12 31 2005 registration of formal involuntary hospitalisation cases*. 01 09 2003 – 31 12 2005 MPCS-assessment of the degree of perceived coercion by formally involuntarily hospitalised (FIH) patients who gave a consent to participate in the study.	01 09 2003 – 31 12 2005 MPSC-assessment of the degree of perceived coercion by voluntarily hospitalised patients**, who gave a consent to participate in the study. 01 09 2003 – 31 12 2005 MPCS-screening of informally involuntarily hospitalised (IIH) patients (i.e. those who feel coerced) from all voluntarily hospitalised patients who gave a consent to participate in the study.
Study stage 2	Evaluation of the socio-demographic, psychopathology, aggression, satisfaction with treatment, and life quality indicators of formally involuntarily hospitalised (FIH) patients *** during an interview using VAS of coercion, BPRS, GAF, MOAS, CAT, MANSA scales and data from medical documentation (n=85).	Evaluation of the socio-demographic, psychopathology, aggression, satisfaction with treatment, and life quality indicators of informally involuntarily hospitalised (IIH) patients *** during an interview using VAS of coercion, BPRS, GAF, MOAS, CAT, MANSA scales and data from medical documentation (n=95).	
Study stage 3	Evaluation of the hospitalisation and rehospitalisation indicators of formally involuntarily hospitalised (FIH) patients **** from medical documentation (n=85).	Evaluation of the hospitalisation and rehospitalisation indicators of informally involuntarily hospitalised (IIH) patients **** from medical documentation (n=95).	Evaluation of the hospitalisation and rehospitalisation indicators of voluntarily hospitalised not feeling coerced (VHNFC) patients**** from medical documentation (n=378).

*assessment covered hospitalisation cases (including the cases of rehospitalisation of the same patient during the period concerned)
** assessment covered hospitalisation cases (including the cases of rehospitalisation of the same patient during the period concerned); if a patient was already included into FIH or IIH patient group under study stage 2, his repeat evaluation in the cases of subsequent rehospitalisation was not carried out in study stage 1.
***the patients included into study stage 2 were not repeatedly included into the study in the event of rehospitalisation during the studied period
****study stage 3 evaluated the length of the studied hospitalisation in stage 2 and re-hospitalisations in the period of three years from the day of discharge from an inpatient facility of FIH and IIF group patients
*****VHNFC patient group was composed of voluntarily hospitalised patients who were MPCS-assessed as those not feeling coerced in study stage 1

Fig. 1. Study scheme

Assessment covered patients who met the following general criteria of the study: patient residence was in the catchment area of Vilnius Mental Health Centre (VMHC), i.e. in the wards of Antakalnis, Justiniškės, Old Town, Šnipiškės, Verkiai, Viršuliškės, Žirmūnai, and Žvėrynas, age $\geq 18 - \leq 64$, was not suffering from dementia, not transferred from another department, and hospitalised in the acute psychiatry department (1st men and 2nd women departments) of Vilnius Mental Health Centre.

The **first** stage of the study assessed the prevalence of formal involuntary hospitalisations as well as the frequency and degree of perceived coercion among formally involuntarily hospitalised patients and voluntarily hospitalised patients. Patient-perceived coercion was evaluated using the MacArthur Perceived Coercion Scale (MPCS). This study used a modified version of the scale with statements rephrased into questions.

Assessment of the prevalence of formal involuntary hospitalisation was carried out from 01 01 2003 through to 31 12 2005 at VMHC Reception Room by recording in a special register all the patients who arrived at the reception room and whose condition was assessed by a psychiatrist on duty at the reception room, who refused to be hospitalised and did not sign a consent for hospitalisation and were hospitalised against their will. This stage of the study assessed the number of hospitalisation cases and, upon occurrence of several cases of involuntary hospitalisation of the same patient during the assessment period, all such cases were added to this number.

All the patients who were formally involuntarily hospitalised in the period 01 09 2003 to 31 12 2005 were invited to participate in the study's second stage. Prior to carrying out the assessment planned under the study's second stage, those who gave consent for participation were assessed with the MPCS and the assessment results were used for a comparison of the degree of perceived coercion in formally involuntarily hospitalised patients and voluntarily hospitalised patients.

The frequency and degree of perceived coercion among voluntarily hospitalised patients were evaluated on the basis of the cases of voluntary hospitalisation that occurred in the period 01 09 2003 – 31 12 2005. There were 1 341 cases of voluntary hospitalisation which met the general criteria of the study in the aforementioned period; however, considering the fact that the patients that had already been included into FIH or IIH patient group of the study's second stage were not repeatedly interviewed, 895 cases

of involuntary hospitalisation were suitable for a survey in the study's first stage. 734 out of 895 cases of voluntary hospitalisation were assessed with the MPCS. 161 cases of hospitalisation were not evaluated due to a clinical situation preventing a patient interview, a quick discharge or refusal to participate in the study. The MPCS results were used to make a comparison between the degree of perceived coercion in voluntarily hospitalised patients and the degree of coercion felt by involuntarily hospitalised patients.

The frequency of perceived coercion among formally involuntarily hospitalised patients and voluntarily hospitalised patients was measured on the basis of the MPCS results. In this study, like in the previous ones, where the MPCS was employed to measure coercion in terms of quality, MPCS's scores from 0 to 2 points inclusive were treated as the absence of perceived coercion, and the score of 3 to 5 points was evaluated as the presence of perceived coercion, i.e. a patient who negatively replied to 3 or more of 5 questions on the MPCS was evaluated as perceiving coercion during hospitalisation. On the basis of these findings, a percentage of formally involuntarily hospitalised patients who perceive coercion in the total number of formally involuntarily hospitalised patients, and that of voluntarily hospitalised patients who feel coerced in the total number of voluntarily hospitalised patients was measured.

In the study's first stage the author of this work evaluated voluntarily hospitalised patients using the MPCS in cooperation with other researchers within the framework of the research project *European Evaluation of Coercion in Psychiatry and Harmonisation of Best Clinical Practise* (EUNOMIA).

The **second** stage of the study focused on two groups of studied patients: formally involuntarily hospitalised (FIH) patients and informally involuntarily hospitalised (IIH) patients. The study focused on the patients hospitalised in the period 01 09 2003 – 31 12 2005.

The first group of studied patients (FIH) was composed by inviting all the patients involuntarily hospitalised pursuant to Article 27 of the Law on Mental Health Care of the Republic of Lithuania, and Article 2.26 of the Civil Code of the Republic of Lithuania to participate in the study (including those who did not sign a consent on inpatient admission during hospitalisation, but did so within the nearest 48 hours and the administration of a mental hospital did not apply to the court concerning their

involuntary hospitalisation). There were 152 cases of involuntary hospitalisation in VMHC Departments of Acute Psychiatry (1st women and 1st men departments) during the period concerned of the second stage (01 09 2003 – 31 12 2005). In 152 cases of involuntary hospitalisation 120 patients were admitted to hospital as part of the patients were involuntarily hospitalised more than once during the period of the study. 85 (70.8 per cent) formally involuntarily hospitalised patients out of 120 involuntarily hospitalised patients were included into the study. The remaining 35 patients either refused to participate in the study or were not interviewed due to a quick discharge or severe psychopathology. Patients included into the second stage of the study were not repeatedly interviewed in the case of their rehospitalisation during the period concerned.

The second group of informally involuntarily hospitalised (IIH) studied patients was composed by inviting all the patients voluntarily hospitalised in the first stage of the study with their MPCS screening scores 3 and above, i.e. those perceiving coercion, to participate in the study. In this study voluntarily hospitalised patients but who feel coerced were defined as informally involuntarily hospitalised patients. 95 (76.6 per cent) out of 124 patients with their MPCS scores 3 and above were included into the study. The remaining 29 patients either refused to participate in the study or were not interviewed due to a quick discharge or severe psychopathology.

Socio-demographic and clinical data were collected from medical records and patient interviews.

This stage of the study involved additional quantitative measurement of perceived coercion. The Visual Analogue Scale (VAS) of coercion was used for a more precise comparison of the degree of coercion (i.e. quantitative measurement), i.e. for a better differentiation of severely felt coercion, among formally involuntarily hospitalised patients and informally involuntarily hospitalised patients. The VAS of coercion (as a dependent variable) was also used to analyse the factors that are related to the degree of perceived coercion.

In the second stage of the study the studied patients from FIH and IIH patient groups were assessed through an interview within the first 7 days after hospitalisation on the below-mentioned scales. The Clients' Scale for Assessment of Treatment (CAT) was used to determine how a patient assesses treatment. A 24-item version of the Brief Psychiatric Rating Scale (BPRS) was employed to evaluate general psychopathology.

Overall functioning was assessed by using the Global Assessment of Functioning (GAF) scale. The quality of life was measured by using the Manchester Short Assessment of Quality of Life (MANSA) scale. Patient aggression was evaluated with the Modified Overt Aggression Scale (MOAS). To measure the internal consistency of MPCS, BPRS, CAT, and MANSA scales, the Cronbach's alfa was applied. Evaluations of the MPCS, BPRS, GAF, CAT, MOAS, and VAS of coercion and part of socio-demographic indicators were carried out under the research project *European Evaluation of Coercion in Psychiatry and Harmonisation of Best Clinical Practise* (EUNOMIA). While working on this research project, the work's author received continuous training on the application of the BPRS and GAF scale.

The **third** stage of the study. Among the most often selected criteria for the measurement of the outcomes of involuntary hospitalisation are the indicators of long-term re-hospitalisation classified as the objective criteria, which were selected for this study. Medical documentation was used to measure the duration of the studied hospitalisation and the following indicators of re-hospitalisations within 3 years after discharge from the studied hospitalisation: the presence of at least one rehospitalisation, the number of re-hospitalisations and time to rehospitalisation. Three groups of studied patients were compared in the third stage. Apart from the groups of formally involuntarily hospitalised (FIH) and informally involuntarily hospitalised (IIH) patients assessed through interviews of the second stage of the study, a third group of studied patients was formed from the patients who gave ≤2 negative responses to MPCS questions during the screening done in the first stage of the study, who were evaluated as voluntarily hospitalised but not feeling coerced (VHNFC). The patients of these three groups were compared in terms of their age, gender, diagnostic category, type of referral for hospitalisation, time to rehospitalisation within 3 years after discharge, and the number of re-hospitalisations within 3 years after discharge.

Methods for statistical processing and submission of data

Data were processed using the statistical packages SPSS 15.0 for Windows, JMP 7, StatGraphic Plus 5.1, and Minitab 15. The Kolmogorov-Smirnov test was employed to evaluate whether or not the distribution of data in a sample conform to a normal distribution. By comparing proportions according to frequency tables, the non-

parametric chi-square (χ2) test or the Fisher's exact two-way test was applied for the establishment of proportions, and the graphic view was presented using a mosaic diagram.

In the event of a normal data distribution, the analysis of variance (ANOVA) was used for a comparison of continuous variables among the groups. In the event of the absence of a normal data distribution or categorical variables, the non-parametric tests of Kruskal-Wallis (with Bonferroni method for pairwise comparison) and Mann-Whitney were applied, and their results were presented using medians and their confidence intervals. For the graphical depicting of continuous and categorical variables notched box plots were used.

To estimate the survival function (time to rehospitalisation), the Kaplan-Meier estimator was used, and the Breslow test (generalised Wilcoxon test) was employed to measure differences among groups. To establish the strength of relationship among signs in the absence of a normal data distribution or in the event of categorical variables, the non-parametric Spearman's rank correlation coefficient or non-parametric gamma correlation coefficient was employed. To evaluate the factors predetermining the dependent variable, a multiple regression, a stepwise method, was used.

The statistical significance of a difference among variables was determined on the basis of the exact p value. A difference was considered as a statistically significant difference with a probability of 95 per cent when p≤0.05, and with a probability of 99 per cent, when p≤0.01.

STUDY RESULTS

First stage of the study

Prevalence of formal involuntary hospitalisation

Assessment of the prevalence of involuntary hospitalisation was done using data about all the cases of involuntary hospitalisation in 2003, 2004 and 2005 in Vilnius Mental Health Centre's Acute Psychiatry Departments (1st men and 1st women departments) of the patients living in the catchment area of this inpatient facility, which were recorded by the medical staff on duty at VMHC Reception Room in a separate register, developed for the purpose of this study. Assessment in this study stage focused

on the number of cases. Upon occurrence of several cases of involuntary hospitalisation of the same patient within the assessment period, all such cases were included into this number. The surveyed area includes the Vilnius-based wards of Antakalnis, Justiniškės, Old Town, Šnipiškės, Verkiai, Viršuliškės, Žirmūnai, and Žvėrynas. According to the data of the Total Population and Dwelling Census 2001, they had a population of 217 702. Upon evaluating the obtained data, the number of involuntary hospitalisations per 10^5 residents per year was calculated. Data are presented in Table 1.

Table 1. The number of involuntary hospitalisations and the number of involuntary hospitalisations per 10^5 residents in the catchment area of VMHC

Involuntary hospitalisations	Year		
	2003	**2004**	**2005**
Number	86	83	50
Indicator per 10^5 residents	39.5	38.1	23.0

The established indicator of involuntary hospitalisations per 10^5 residents in the period concerned was from 23.0 to 39.5.

A percentage of involuntary admissions in the total number of hospitalisations in acute psychiatry departments in the period of patient inclusion into the second stage of the study, i.e. from 01 09 2003 to 31 12 2005, was also calculated. There were 1 341 cases of patient hospitalisation that met the general criteria of the study with 1 189 voluntary hospitalisations (88.7 per cent) and 152 involuntary hospitalisations (11.3 per cent) among them within this period (Fig. 2).
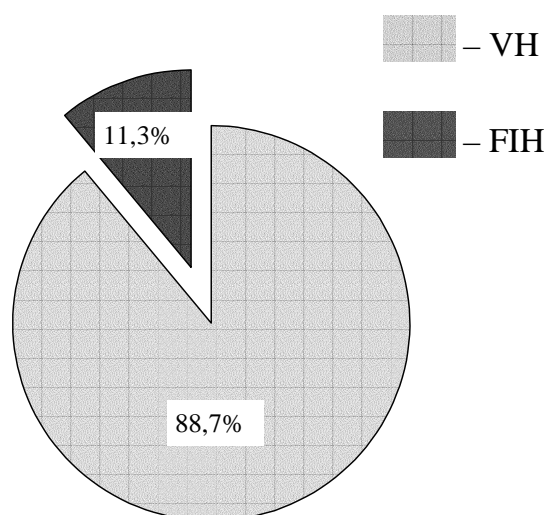
Fig. 2. A percentage of involuntary hospitalisations in the total number of hospitalisation cases (VH – voluntarily hospitalised, FIH – formally involuntarily hospitalised)

Frequency of informal involuntary hospitalisation (perceived coercion among voluntarily hospitalised patients)

The study employed the MPCS for the screening of patients who perceive coerced in the process of hospitalisation (i.e. those informally involuntarily hospitalised). On the basis of the total score of VH and FIH studied patients, the MPCS' Cronbach alfa coefficient was 0.914. 734 out of 895 cases of voluntary hospitalisation were assessed on the MPCS. Out of 734 MPCS-interviewed patients during the screening, 124 studied patients (16.9 per cent) received 3 points or more and were regarded as informally involuntarily hospitalised (IIH), and 610 (83.1 per cent) were rated by less than 3 points and were regarded as voluntarily hospitalised not feeling coerced (VHNFC) (Fig. 3).
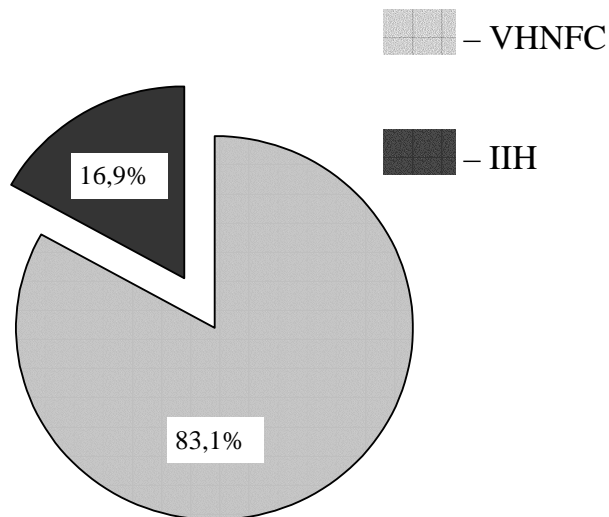
Fig. 3. Percentage of informal involuntary hospitalisations (perceived coercion among voluntarily hospitalised patients) (VHNFC – voluntarily hospitalised not feeling coerced, IIH – informally involuntarily hospitalised)

Frequency of coercion perceived by formally involuntarily hospitalised patients

In the group of FIH patients, 2 out of 85 studied patients or 2.3 per cent negatively responded to less than 3 questions of the MPCS and, therefore, should be regarded as not perceiving coercion. The remaining 83 patients gave negative responses to 3 or more questions of the MPCS and were assessed as those perceiving coerced. These results show that the majority of involuntarily hospitalised patients felt coerced.

Degree of coercion perceived by formally involuntarily hospitalised patients and voluntarily hospitalised patients

The degree of perceived coercion by 85 formally involuntarily hospitalised patients who agreed to participate in the study was measured with the MPCS. The degree of coercion felt by formally involuntarily hospitalised (FIH) and voluntarily hospitalised (VH) patients was compared by using these data and the data of the measurement of voluntarily hospitalised patients on the MPCS during screening. The Mann-Whitney test was used for studied patient comparison. Data are presented in Table 2 and Fig. 4.

Table 2. The degree of perceived coercion by formally involuntarily hospitalised (FIH) and voluntarily hospitalised (VH) patients

	FIH (n=85)				VH (n=734)				U	p
	Me (M)	MeCI	Min	Max	Me (M)	MeCI	Min	Max		
MPCS score	5 (4,5)	5,0–5,0	0	5	0 (1,1)	0,0–1,0	0	5	4603,0	0,0001

n – number of cases, Me – median, M – mean, MeCI – confidence interval for the median, Min – minimum, Max – maximum, U – Mann-Whitney U, p – p-value
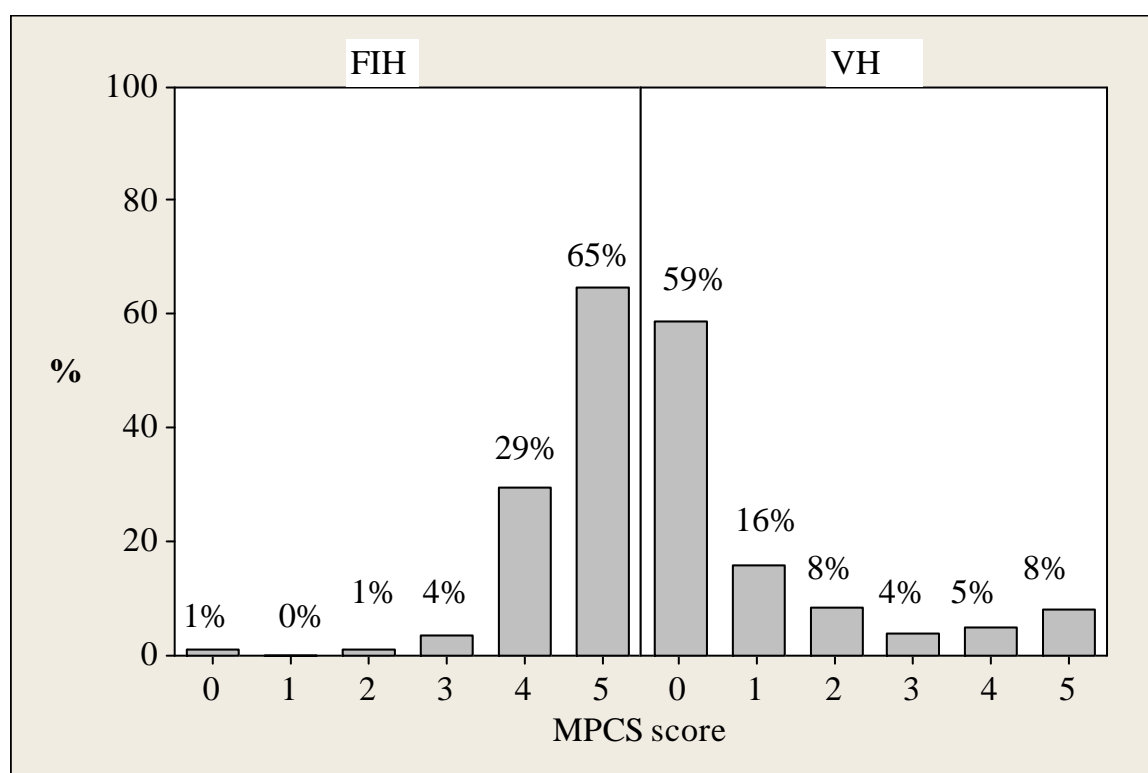

Fig. 4. MPCS score of FIH and VH patients

The obtained data show higher degrees of perceived coercion in formal involuntary admissions than in voluntary admissions.

Second stage of the study

The second stage of the study included 85 formally involuntarily hospitalised (FIH) and 95 informally involuntarily hospitalised (IIH) patients who met the criteria for inclusion and agreed to participate in the study.

Socio-demographic characteristics

FIH and IIH patient groups were compared by age, gender, diagnostic category and type of referral for the studied hospitalisation.

In FIH group patient age ranged from 20 to 64 years. The age average was 40.9 years. In IIH group the youngest patient was aged 18 and the oldest 63, and their age average was 39.7 years. The performed analysis of variables (ANOVA) did not show any statistically significant differences in age between the groups. Data of the analysis are presented in Table 3.

Table 3. Comparison by age of the studied patients in FIH and IIH patient groups

Patient group	n	Min	Max	M	CI (95 %)	SD	SE
FIH	85	20	64	40,9	37,9–43,0	11,678	1,267
IIH	95	18	63	39,7	37,2–42,1	12,114	1,243
Total	180	18	64	40,1	38,3–41,8	11,815	0,500

n – number of patients, Min – minimum, Max – maximum, M – mean age, CI – confidence interval SD – standard deviation, SE – standard error
$F_{(1,178)}=0,207$, p=0,65

According to the performed comparison of the studied patients in FIH and IIH groups by gender, FIH patient group included 46 (54.1 per cent) females and 39 (45.9 per cent) males, and IIH group – 41 (43.2 per cent) females and 54 (56.8 per cent) males. No statistically significant difference was present between these groups ($\chi2=2,158$, ll=1, n=180, p=0,142).

FIH and IIH patient groups were also compared by nationality of the studied patients. FIH patient group included 58 (68.2 per cent) Lithuanians, 8 (9.4 per cent) Poles, 15 (17.6 per cent) Russians, 4 (4.7 per cent) representatives of other nationalities, and IIH patient group had 62 (65.3 per cent) Lithuanians, 8 (8.4 per cent) Poles, 20 (21.1 per cent) Russians, and 5 (5.3 per cent) representatives of other nationalities. There was no statistically significant difference by nationality between the studied groups ($\chi2=0.404$, ll=3, n=180, p=0.939).

FIH and IIH patient groups were also compared according to the main source of income. The respondents of FIH patient group specified the main sources of income as follows: 16 (18.8 per cent) – wages, 48 (56.5 per cent) – disability, old-age pensions or social benefits, 21 (24.76 per cent) – family support, savings and other income sources;

in IIH patient group 17 (17.9 per cent) respondents specified wages as the main source of income, 63 (66.3 per cent) – disability, old-age pensions or social benefits, 15 (15.8 per cent) – family support, savings and other sources of income. There was no statistically significant difference according to the main source of income between the interviewed groups ($\chi 2=2.51$, ll=2, n=180, p=0.285).

FIH and IIH patient groups were compared by employment. In the group of FIH patients, 17 (20.0 per cent) studied patients were employed, 20 (23.5 per cent) – unemployed, 42 (49.4 per cent) – persons with disability or pensioners, 6 (7.1 per cent) – students or those pursuing other activities. In IIH patient group, 20 (21.1 per cent) studied patients were employed, 12 (12.6 per cent) – unemployed, 56 (62.1 per cent) – persons with disability or pensioners, 4 (4.2 per cent) –students or those pursuing other activities. There was no statistically significant difference by employment between the studied groups ($\chi 2=4.964$, ll=3, n=180, p=0.174).

The groups of FIH and IIH patients were compared by marital status. In IIH patient group, 47 (56.0 per cent) studied patients were single, 19 (22.6 per cent) – married, 16 (19.0 per cent) – divorced, 2 (2.4 per cent) – widowers. In IIH patient group, 47 (50.0) per cent studied patients were single, 27 (28.7 per cent) – married, 18 (19.1 per cent) – divorced, 2 (2.1 per cent) – widowers. There was no significant statistical difference by marital status among the studied groups ($\chi 2=0.95$, ll=3, n=178, p=0.813).

Diagnoses

The main diagnoses established for the patients of the studied groups are presented in Tables 4 and 5.

Table 4. Main diagnosis of FIH patient group

ICD-10 diagnosis	n
Organic delusional disorder (F06.2)	1
Organic mood (affective) disorder (F06.3)	2
Organic personality disorder (F07.0)	1
Paranoid schizophrenia (F20.0)	40
Simple schizophrenia (F20.6)	1
Schizotypal disorder (F21)	1
Delusional disorder (F22.0)	1
Acute polymorphic psychotic disorder without symptoms of schizophrenia (F23.0)	1
Acute polymorphic psychotic disorder with symptoms of schizophrenia (F23.1)	4
Schizoaffective disorder, manic type (F25.0)	9
Schizoaffective disorder, depressive type (F25.1)	6
Schizoaffective disorder, mixed type (F25.2)	15
Severe depressive episode without psychotic symptoms (F32.2)	1
Recurrent depressive disorder, current episode severe without psychotic symptoms (F33.2)	1
Adjustment disorder (F43.2)	1
Total	85

n – number of patients

Table 5. Main diagnosis of IIH patient group

ICD-10 diagnosis	n
Organic delusional disorder (F06.2)	2
Organic mood (affective) disorder (F06.3)	7
Paranoid schizophrenia (F20.0)	48
Acute polymorphic psychotic disorder with symptoms of schizophrenia (F23.1)	1
Acute and transient psychotic disorder, unspecified (F23.9)	1
Schizoaffective disorder, manic type (F25.0)	4
Schizoaffective disorder, depressive type (F25.1)	10
Schizoaffective disorder, mixed type (F25.2)	9
Bipolar affective disorder, current episode manic with psychotic symptoms (F31.2)	1
Bipolar affective disorder, current episode severe depression with psychotic symptoms (F31.5)	1
Bipolar affective disorder, current episode mixed (F31.6)	1
Severe depressive episode without psychotic symptoms (F32.2)	3
Recurrent depressive disorder, current episode severe without psychotic symptoms (F33.2)	5
Recurrent depressive disorder, current episode severe with psychotic symptoms (F33.3)	2
Total	95

n – number of patients

The groups of FIH and IIH patients were compared by patient attribution to the group of the diagnostic categories of schizophrenia, schizotypal and delusional disorders (F20-F29) of ICD-10 or other F diagnostic categories of ICD-10. In FIH patient group the diagnoses of the diagnostic categories F20-F29 were made for 78 (91.8 per cent), other F diagnostic categories – 7 (8.2 per cent) studied patients; in IIH patient group 78 (76.8 per cent) patients were diagnosed with the diseases of the diagnostic categories F20-F29 and 22 (23.2 per cent) – other F diagnostic categories. There was established a statistically significant difference between the surveyed groups ($\chi2=7.391$, ll=1, n=180, p=0.007). These findings show that the diagnoses of the diagnostic categories F20-F29 were more often established for patients from FIH patient group compared to those from IIH group.

Factors related with arrival at an inpatient facility

FIH and IIH patient groups were compared by type of referral for the studied hospitalisation (referral from an emergency medical service (EMS) or an outpatient personal health care institution (PHCI) or without any referral). In FIH patient group: EMS referral – 52 (61.2 per cent), outpatient PHCI referral – 24 (28.2 per cent) without referral – 9 (10.6 per cent); in IIH patient group: EMS referral – 52 (54.7 per cent), outpatient PHCI referral – 29 (30.5 per cent), without referral – 14 (14.7 per cent). There was no statistically significant difference by the type of referral for the studied hospitalisation between the surveyed groups ($\chi2=1.114$, ll=2, n=180, p=0.573).

Attempted suicides

FIH and IIH patient groups were compared by attempted suicides before the studied hospitalisation. In FIH patient group, 5 (5.9 per cent) studied patients attempted to commit suicide, 80 (94.1 per cent) – did not; in the group of informally involuntarily hospitalised patients 13 (13.7 per cent) studied patients attempted to commit suicide, 82 (86.3 per cent) – did not attempt to commit suicide. By attempted suicide before the studied hospitalisation there was no significant statistical difference between the groups of the studied patients ($\chi2=3.034$, ll=1, n=180, p=0,082).

Indicators of the previous use of inpatient services

The study also evaluated the indicators of the previous use of inpatient services.

FIH and IIH patient groups were compared according to the fact whether it was a patient's first psychiatric hospitalisation. In FIH patient group there were 9 (10.8 per cent) cases of the first (primary) hospitalisation and 74 (80.2 per cent) cases of rehospitalisation; in IIH patient group 12 (13.2 per cent) studied patients were hospitalised for the first time (i.e. primary hospitalisation) and 79 (86.8 per cent) ones re-hospitalised. According to the fact whether a patient was hospitalised for the first time there was no significant statistical difference between the groups of the studied patients ($\chi2=0.225$, ll=1, n=174, p=0.651).

No statistically significant differences were established between the studied groups according to the number of hospitalisations before the studied hospitalisation, the period from the first hospitalisation in the anamnesis to the studied hospitalisation (in years), the period from the last discharge from an inpatient facility to the studied hospitalisation (in days). Data are presented in Table 6.

Table 6. Indicators of the use of inpatient services by the studied patients of FIH and IIH patient groups

	FIH (n=85)				IIH (n=95)				U	p
	Me	MeCI (95 %)	Min	Max	Me	MeCI (95 %)	Min	Max		
Number of hospitalisations before the studied hospitalisation	5	3,0–7,0	0	52	5	4,0–7,0	0	61	3720,5	0,866
Period from the first hospitalisation in the anamnesis to the studied hospitalisation (in years)	9	7,0–12,0	0	47	8	5,8–11,0	0	48	3370,0	0,320
Period from the last discharge from an inpatient facility to the studied hospitalisation (in days)	259	188,1–325,6	0	7631	199	133,0–278,1	2	4820	1725,5	0,989

n – number of patients, Me – median, MeCI – confidence interval for the median, Min – minimum, Max – maximum, U – Mann-Whitney U, p – p-value

Percentage of the patients who were formally involuntarily hospitalised by a court order

17 (20 per cent) out of 85 formally involuntarily hospitalised studied patients were hospitalised by a court order.

Medication within 3 days after hospitalisation

Medication within the first 3 days after hospitalisation was compared between FIH and IIH patient groups. Comparison of whether typical anti-psychotic drugs, atypical anti-psychotic drugs, mood stabilisers, tranquilisers, intramuscular injection and intravenous drugs were prescribed did not show any statistically significant difference between the groups of the studied patients. Data are presented in Table 7.

Table 7. Drugs prescribed for the studied patients in FIH and IIH groups within the first 3 days after hospitalisation

Drugs prescribed for the studied patients in FIH and IIH groups within the first 3 days after hospitalisation	FIH		IIH	
	n	%	n	%
Typical anti-psychotic[1]	63	80,8	66	76,7
Atypical anti-psychotic[2]	7	9,0	19	22,1
Mood stabilisers[3]	15	19,2	15	17,4
Tranquilisers[4]	61	78,2	63	73,3
Intramuscular injection[5]	63	80,8	71	82,6
Intravenous drugs[6]	16	20,5	14	16,1

n – number of patients
[1]$\chi^2=0,395$, ll=1, N=164, p=0,530 between FIH and IIH
[2]$\chi^2=0,18$, ll=1, N=164, p=0,892 between FIH and IIH
[3]$\chi^2=0,088$, ll=1, N=164, p=0,767 between FIH and IIH
[4]$\chi^2=0,543$, ll=1, N=164, p=0,461 between FIH and IIH
[5]$\chi^2=0,088$, ll=1, N=164, p=0,767 between FIH and IIH
[6]$\chi^2=0,540$, ll=1, N=164, p=0,462 between FIH and IIH

Psychopathology

Psychopathology of FIH and IIH patient groups was compared and measured with the BPRS. The total BPRS Cronbach alpha's rating for both studied groups was 0.716. BPRS data are presented in Table 8 and notched box plots in Fig. 5.

Table 8. BPRS scores of the studied patients in FIH and IIH groups

BPRS item or subscale	FIH (n=85)		IIH (n=95)		U	p
	Me	MeCI (95 %)	Me	MeCI (95 %)		
1. Somatic Concern	2	1,0–2,0	2	2,0–2,0	3874,0	0,625
2. Anxiety	3	3,0–3,0	3	3,0–4,0	4011,5	0,940
3. Depression	2	2,0–3,0	2	2,0–3,0	3788,0	0,461
4. Suicidality	1	1,0–1,0	1	1,0–1,0	3722,5	0,281
5. Guilt	1	1,0–1,0	1	1,0–1,0	3806,0	0,439
6. Hostility	2	2,0–3,0	2	1,0–2,0	3204,5	0,013
7. Elevated Mood	1	1,0–2,0	1	1,0–1,0	3480,0	0,068
8. Grandiosity	1	1,0–1,0	1	1,0–1,0	3529,0	0,067
9. Suspiciousness	3	2,0–3,0	2	2,0–3,0	3290,0	0,028
10. Hallucinations	1	1,0–1,0	1	1,0–1,0	3966,0	0,810
11. Unusual Thought Content	4	4,0–5,0	4	4,0–4,0	3222,0	0,016
12. Bizarre Behavior	3	2,0–4,0	3	2,0–3,0	3582,5	0,182
13. Self-Neglect	3	2,0–3,0	2	2,0–2,0	3357,0	0,044
14. Disorientation	1	1,0–1,0	1	1,0–1,0	3542,0	0,072
15. Conceptual Disorganization	3	3,0–4,0	3	3,0–4,0	3639,0	0,241
16. Blunted Affect	3	3,0–3,0	3	3,0–4,0	3814,5	0,511
17. Emotional Withdrawal	3	2,0–3,0	3	3,0–3,0	3720,0	0,349
18. Motor Retardation	1	1,0–2,0	2	1,0–2,0	3710,0	0,305
19. Tension	3	3,0–3,0	3	3,0–3,0	3783,0	0,450
20. Uncooperativeness	2	2,0–2,0	2	1,0–2,0	3730,0	0,351
21. Excitement	2	2,0–2,0	2	1,0–2,0	3475,0	0,088
22. Distractibility	2	2,0–2,0	2	2,0–2,0	3928,0	0,739
23. Motor Hyperactivity	1	1,0–1,0	1	1,0–1,0	3722,0	0,279
24. Mannerisms and Posturing	2	1,0–2,0	1	1,0–2,0	3916,0	0,706
Positive Symptom Subscale (Items 9,10,11,12,14)	13	12,0–14,0	13	11,0–13,0	3325,5	0,041
Negative Symptom Subscale (Items 13,16,17,18)	10	9,0–11,0	10	9,0–11,0	4021,5	0,963
Depression/Anxiety Symptom Subscale (Items 2,3,4,5)	8	7,0–10,0	8	7,0–9,5	3773,0	0,447
Manic/Excitement Symptom Subscale (Items 6,7,8,21,22,23)	11	10,0–13,0	9	8,0–10,5	3062,5	0,005
BPRS total score	58	54,0–61,0	55	52,0–58,5	3460,0	0,098

n – number of patients, Me – median, MeCI – confidence interval for the median, U – Mann-Whitney U, p – p-value
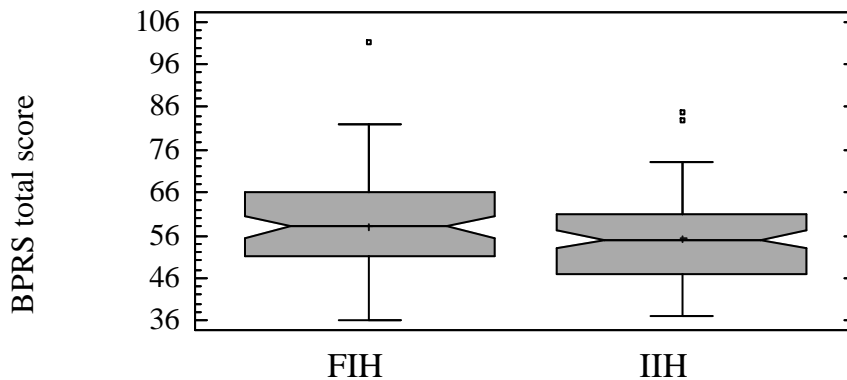Subscales were composed according to J. Ventura.

Fig. 5. The BPRS total score of the studied patients of FIH and IIH patient groups

It was determined that the group of FIH patients received statistically more significant scores of BPRS items 6, 9, 11, 13 and Mania/Excitement Symptom Subscales. Even though the Mann-Whitney test shows the presence of a statistically significant difference in BPRS Positive Symptom Subscale scores between the groups, the uniform medians of the studied patient groups along with their overlapping confidence intervals having insignificant differences allow a conclusion that the presence of this difference is doubtful.

Global functioning level

The global functioning level was assessed using the Global Assessment of Functioning (GAF) scale. Even though FIH patient group received slightly lower scores than IIH patient group they did not reach a statistically significant difference. Data are presented in Table 9.

Table 9. The GAF scale score of the studied patients of FIH and IIH patient groups

	FIH (n=83)				IIH (n=93)				U	p
	Me	MeCI (95 %)	Max	Min	Me	MeCI (95 %)	Max	Min		
GAF score	22	20,0–29,1	10	48	28	24,0–30,5	10	58	3452,0	0,093

n – number of patients, Me – median, MeCI – confidence interval for the median, Min – minimum, Max – maximum, U – Mann-Whitney U, p – p-value

Aggression

FIH and IIH patient groups were compared by manifestation of aggression. Since distribution of MOAS data was non-normal, to rate the total aggression, patients were divided into two categories: aggressive patients with their MOAS total weighted score $\geq$3 points and non-aggressive patients with their MOAS total weighted score <3 points. FIH and IIH patient groups were compared according to the presence or absence of aggression using the chi-square (χ2) test. As the results show, aggression in FIH patient group (MOAS$\geq$3 points) was displayed by 37 (43.5 per cent) patients, and in IIH group – 26 (27.4 per cent) patients (χ2=5,150, ll=1, N=180, p=0.023), i.e. aggression was more typical of formally involuntarily hospitalised patients than of informally involuntarily hospitalised patients. The comparison also focused on the manifestation of aggression in both groups of the studied patients according to individual categories of aggression. In this case, behaviour of each aggression category was considered as aggressive if the category's score was $\geq$1 point. Choice of the minimal score of the scale in assessing individual categories of aggression allows us to measure the manifestation of minor aggression (in particular of verbal aggression).

As the findings show, it was verbal aggression that was most frequently manifested in both groups of the studied patients, while comparison of differences in aggression manifestation between the two groups of the studied patients shows statistically significant more frequent manifestation of verbal and physical aggression in FIH patient group vs IIH patient group. Data are presented in Table 10.

Table 10. Aggression of the studied patients of FIH and IIH patient groups

| Category of aggression | Patient group | | | | | |
| | FIH and IIH total | | FIH | | IIH | |
	n[1]	%[1]	n[2]	%[2]	n[3]	%[3]
Verbal aggression[4]	107	59,4	60	70,6	47	49,5
Aggression against property	17	9,4	9	10,6	8	8,4
Auto-aggression	17	9,4	10	11,8	7	7,4
Physical aggression[5]	34	18,9	22	25,9	12	12,6

n – number of patients
[1] – 180 patients, [2] – 85 patients, [3] – 95 patients
[4] χ2=8,296, ll=1, N=180, p=0,004 between FIH and IIH
[5] χ2=5,141, ll=1, N=180, p=0,023 between FIH and IIH

How do patients assess treatment they receive?

Patient satisfaction with their treatment and nursing was measured using the Clients' Scale for Assessment of Treatment (CAT). The total CAT scale Cronbach alpha's rating for both groups of the studied patients was 0.907. CAT scale data are presented in Table 11 and Fig. 6.

Table 11. CAT scale scores of the studied patients of FIH and IIH patient groups

	FIH (n=85)		IIH (n=95)		U	p
	Me	MeCI (95 %)	Me	MeCI (95 %)		
CAT total score	27	21,9–32,0	39	36,0–45,0	2868,0	0,001

n – number of patients, Me – median, MeCI – confidence interval for the median, U – Mann-Whitney U, p – p-value
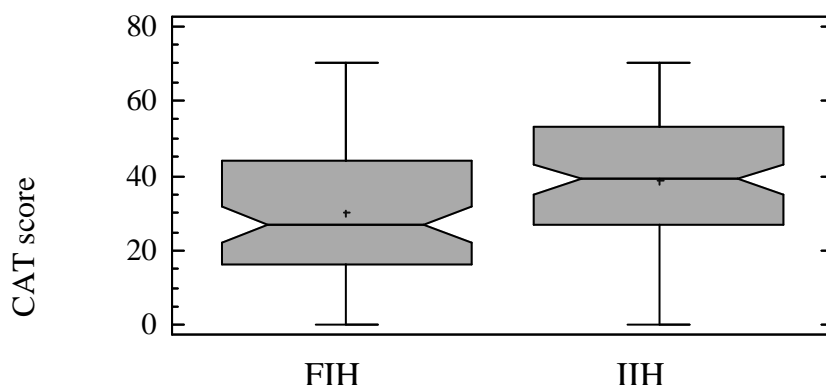

Fig. 6. CAT score of the studied patients of FIH and IIH patient groups

The total CAT scale's score was statistically significantly higher in IIH patient group, which shows that the group's patients better evaluate the majority of treatment and nursing aspects at the beginning of inpatient treatment.

Quality of life

The Manchester Short Assessment of Quality of Life (MANSA) scale was employed to assess the quality of life of FIH and IIH patient groups. The total assessed

MANSA scale's Cronbach alpha score for both groups of the studied patients was 0.717. MANSA scale's total score is presented in Table 12.

Table 12. MANSA score of the studied patients of FIH and IIH patient groups

	FIH (n=85)		IIH (n=95)		U	p
	Me	MeCI (95 %)	Me	MeCI (95 %)		
MANSA total score	51	46,0–56,0	50	47,0–53,5	3817,5	0,528

n – number of patients, Me – median, MeCI – confidence interval for the median, U – Mann-Whitney U, p – p-value

The performed analysis did not reveal any statistically significant differences of MANSA scale scores between the groups of the studied patients.

Use of physical restraints

Comparison of the use of physical restraints (fixation) within the first day after hospitalisation shows that these restraints in FIH patient group were used on 8 (9.4 per cent) studied patients and not used on 77 (90.6 per cent) patients, and physical restraints in IIH patient group were applied on 3 (3.2 per cent) studied patients and not applied on 92 (96.8 per cent). By applying the Fisher's exact two-way test no statistically significant difference was recorded among the groups of the studied patients according to the use of physical restraints (fixation) (n=180, p=0.118).

Perceived coercion measured with the Visual Analogues Scale (VAS) of coercion

Coercion felt by the studied patients in FIH and IIH patient groups was measured with the VAS of coercion. Data are presented in Table 13 and Fig. 7.

Table 13. VAS of coercion score of the studied patients of FIH and IIH patient groups

	FIH (n=83)				IIH (n=93)				U	p
	Me	MeCI (95 %)	Min	Max	Me	MeCI (95 %)	Min	Max		
VAS of coercion score	9	8,0–10,0	1	10	5	5,0–6,0	1	10	2467,0	0,0001

n – number of patients, Me – median, MePI – confidence interval for the median, Min – minimum, Max – maximum, U – Mann-Whitney U, p – p-value
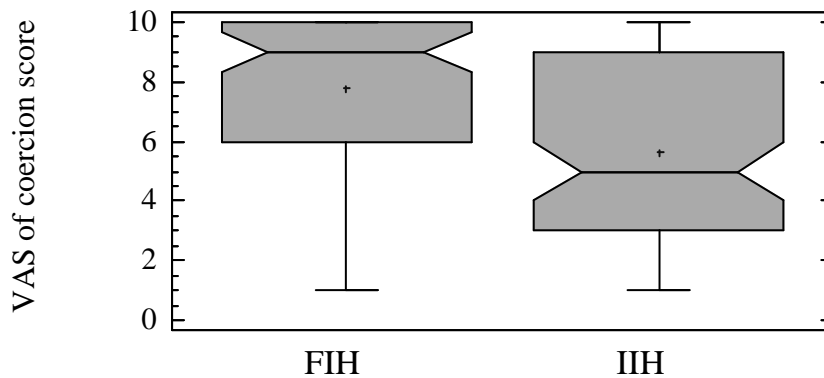
Fig. 7. VAS of coercion score of the studied patients of FIH and IIH patient groups

As the obtained findings show, according to the scores of the VAS of coercion, the degree of coercion felt by the studied patients in FIH patient group was statistically more significant compared with that in IIH patient group.

Correlation of the degree of perceived coercion with various factors

With the aim determining the factors that have an influence on the degree of coercion perceived by patients hospitalised in acute psychiatry departments, a correlation analysis was performed. Due to a discontinuous data distribution VAS data were grouped into 3 groups: points 1-3 were recoded to 1 (low), 4-7 – 2 (medium) and 8-10 – 3 (high degree of coercion). Assessment covered the correlation of the degree of perceived coercion measured on the VAS of coercion with socio-demographical characteristics and clinical factors. The analysis of coercion correlations with various factors employed a spectrum of scores from 0 to 4 of MOAS verbal aggression, MOAS aggression against property, MOAS auto-aggression and MOAS physical aggression. It also employed two variables, i.e. $MOAS_{40}$ and $MOAS_{28.}$ The variable $MOAS_{40}$ was obtained upon summing up the following components: multiplying the MOAS verbal aggression score by coefficient 1, multiplying the MOAS aggression against property scores by coefficient 2, multiplying the MOAS auto-aggression scores by coefficient 3 and multiplying the MOAS physical aggression scores by coefficient 4. Thus, the total weighted score of aggression with its maximum value of 40 is obtained. The variable $MOAS_{28}$ was obtained upon summing up the scores of MOAS verbal aggression multiplied by coefficient 1, the scores of MOAS aggression against property multiplied

by coefficient 2, the scores of MOAS physical aggression multiplied by coefficient 4. In this event the total weighted score of aggression with its maximum potential value of 28 is obtained. This variable does not include auto-aggression as it is assumed that this form of aggression is distinguished by specific features and, therefore, when assessing the total aggression in some cases it is better to refrain from including it into the total weighted score of the MOAS in order to achieve higher accuracy.

Correlations of the variables with VAS of coercion scores were established by applying a non-parametric method of gamma correlation as it is the most suitable method in case of many tied observations, which was determined during this study.

FIH and IIH patient groups were assessed separately and jointly, i.e. all patients feeling coerced. These data are presented in Tables 14-16.

Table 14. Correlations with various factors of coercion perceived by the studied patients in FIH patient group

Factor	n	Gamma correlation with VAS of coercion	p value
Gender (female)	83	0,551	0,004
Age	83	0,108	0,420
Employed	83	-0,222	0,409
Married	83	-0,156	0,547
Nationality – Lithuanian	83	-0,186	0,419
Involuntary hospitalized by courts order	83	-0,364	0,185
GAF	83	-0,113	0,347
MOAS verbal aggression	83	0,492	0,0001
MOAS aggression against property	83	0,227	0,517
MOAS auto-aggression	83	-0,03	0,924
MOAS physical aggression	83	0,294	0,186
$MOAS_{28}$ scores	83	0,367	0,01
$MOAS_{40}$ scores	83	0,312	0,032
BPRS Manic/Excitement Symptom Subscale	83	0,109	0,455
BPRS Negative Symptom Subscale	83	0,024	0,858
BPRS Positive Symptom Subscale	83	-0,029	0,822
BPRS Depression/Anxiety Symptom Subscale	83	-0,173	0,144
BPRS total score	83	0,045	0,737
MANSA total score	83	-0,015	0,911
CAT total score	83	-0,295	0,013
Number of hospitalisations before the studied hospitalisation	81	-0,238	0,054
Period from the first hospitalisation in the anamnesis to the studied hospitalisation (in years)	81	0,002	0,988
Period from the last discharge from an inpatient facility to the studied hospitalisation (in days)	72	0,158	0,240
Not the first hospitalization	81	-0,650	0,044
Emergency medical service referral	82	0,195	0,370
Suicide attempt before the studied hospitalization	83	1,0	0,021
Intramuscular injection within the first 3 days after hospitalisation	76	-0,308	0,256
Intravenous drugs within the first 3 days after hospitalisation	76	-0,007	0,981
Attribution to the group of the diagnostic categories of schizophrenia, schizotypal and delusional disorders (F20-F29)	83	-0,167	0,639
The use of physical restraints (fixation) within the first day after hospitalisation	83	1,0	0,0001

n – number of patients

33

Table 15. Correlations with various factors of coercion perceived by the studied patients in IIH patient group

Factor	n	Gamma correlation with VAS of coercion	p value
Gender (female)	93	0,129	0,432
Age	93	0,119	0,247
Employed	93	0,193	0,344
Married	93	-0,158	0,373
Nationality – Lithuanian	93	0,097	0,583
GAF	93	-0,105	0,331
MOAS verbal aggression	93	0,663	0,0001
MOAS aggression against property	93	0,552	0,073
MOAS auto-aggression	93	-0,458	0,160
MOAS physical aggression	93	0,281	0,267
$MOAS_{28}$ score	93	0,519	0,0001
$MOAS_{40}$ score	93	0,346	0,005
BPRS Manic/Excitement Symptom Subscale	93	0,204	0,067
BPRS Negative Symptom Subscale	93	0,101	0,381
BPRS Positive Symptom Subscale	93	0,155	0,145
BPRS Depression/Anxiety Symptom Subscale	93	-0,303	0,002
BPRS total score	93	0,001	0,992
MANSA total score	93	0,001	0,991
CAT total score	93	-0,405	0,0001
Number of hospitalisations before the studied hospitalisation	91	0,095	0,342
Period from the first hospitalisation in the anamnesis to the studied hospitalisation (in years)	89	0,154	0,127
Period from the last discharge from an inpatient facility to the studied hospitalisation (in days)	76	0,096	0,349
Not the first hospitalization	91	-0,031	0,875
Emergency medical service referral	92	-0,156	0,354
Suicide attempt before the studied hospitalization	93	-0,384	0,122
Intramuscular injection within the first 3 days after hospitalisation	86	-0,068	0,765
Intravenous drugs within the first 3 days after hospitalisation	87	0,07	0,721
Attribution to the group of the diagnostic categories of schizophrenia, schizotypal and delusional disorders (F20-F29)	93	0,574	0,002
The use of physical restraints (fixation) within the first day after hospitalisation	93	0,692	0,264

n – number of patients

Table 16. Correlations with various factors of coercion perceived by all involuntarily hospitalised studied patients (FIH and IIH patient groups)

Factor	n	Gamma correlation with VAS of coercion	p value
Gender (female)	176	0,311	0,011
Age	176	0,105	0,164
Employed	176	0,054	0,734
Married	176	-0,072	0,612
Nationality – Lithuanian	176	0,014	0,918
Formal involuntary hospitalization	176	0,572	0,0001
Involuntary hospitalized by courts order	83	-0,364	0,185
GAF	176	-0,137	0,81
MOAS verbal aggression	176	0,627	0,0001
MOAS aggression against property	176	0,421	0,054
MOAS auto-aggression	176	-0,101	0,643
MOAS physical aggression	176	0,385	0,11
$MOAS_{28}$ score	176	0,501	0,0001
$MOAS_{40}$ score	176	0,385	0,0001
BPRS Manic/Excitement Symptom Subscale	176	0,237	0,004
BPRS Negative Symptom Subscale	176	0,07	0,4
BPRS Positive Symptom Subscale	176	0,130	0,102
BPRS Depression/Anxiety Symptom Subscale	176	-0,248	0,001
BPRS total score	176	0,065	0,402
MANSA total score	176	0,017	0,815
CAT total score	176	-0,421	0,0001
Number of hospitalisations before the studied hospitalisation	172	-0,02	0.794
Period from the first hospitalisation in the anamnesis to the studied hospitalisation (in years)	170	0,117	0,125
Period from the last discharge from an inpatient facility to the studied hospitalisation (in days)	148	0,146	0,061
Not the first hospitalization	172	-0,124	0,481
Emergency medical service referral	174	-0,067	0,603
Suicide attempt before the studied hospitalization	176	-0,215	0,338
Intramuscular injection within the first 3 days after hospitalisation	162	-0,148	0,375
Intravenous drugs within the first 3 days after hospitalisation	163	0,031	0,846
Attribution to the group of the diagnostic categories of schizophrenia, schizotypal and delusional disorders (F20-F29)	176	0,486	0,004
The use of physical restraints (fixation) within the first day after hospitalisation	176	0,849	0,002

n – number of patients,

Factors impacting the degree of perceived coercion

Upon determining significant correlations, the method of multiple regression was employed for the analysis of the factors impacting the degree of coercion. A stepwise method was used. The most significant factors having correlated with the VAS of coercion were included into verification of the likely predictors. As in the case of gamma correlation, the VAS data were divided into 3 groups: points 1-3 were recoded to 1 (low degree of coercion), 4-7 recoded to 2 (medium) and 8-10 – 3 (high). FIH and IIH patient groups were assessed separately and jointly (FIH and IIH groups together), i.e. all the studied patients feeling coerced. First, multicollinearity, i.e. inter-correlation of independent variables, was assessed and the variables without significant inter-correlation were left for the final analysis. Upon applying the stepwise multiple regression, statistically significant factors were established in predictive models.

FIH patient group analysis. Upon applying the stepwise multiple regression, statistically significant factors were left in the obtained predictive models which are shown in Tables 17, 18. In model 1, the factor "verbal aggression" explains 10 per cent of variation of the dependent variable (i.e. a degree of coercion). Upon supplementing model 1 with the factor "gender (female)", explanation of variation of the dependent variable increased up to 15 per cent. Upon adding the factor "CAT score" to model 3, explanation of dependent variable variation increased up to 20 per cent. Upon adding the fourth factor "attempted suicide" to model 4, explanation of dependent variable variation grew up to 23 per cent.

Table 17. The quality parameters of the degree of coercion model of the studied patients of FIH group

Model	R	R^2	AR^2
1	0,326(a)	0,106	0,095
2	0,413(b)	0,171	0,150
3	0,483(c)	0,233	0,203
4	0,521(d)	0,271	0,233

a – verbal aggression, b – verbal aggression; gender (female); c – verbal aggression; gender (female); CAT score, d – verbal aggression; gender (female), CAT score, attempted suicide, R – multiple correlation coefficient, R^2 – coefficient of determination, AR^2 – adjusted coefficient of determination

Table 18. The coefficients and statistical values of the final model of regression of the studied patients of FIH group

Model		B	β	t	p	B CI (95 %)	
						Lower Bound	Lower Bound
1	(Constant)	2,297		20,573	0,0001	2,074	2,519
	Verbal aggression	0,189	0,326	3,062	0,003	0,066	0,312
2	(Constant)	2,852		11,412	0,0001	2,355	3,350
	Verbal aggression	0,162	0,278	2,655	0,01	0,04	0,283
	Gender (female)	0,356	0,259	2,467	0,016	0,643	0,069
3	(Constant)	3,140		11,719	0,0001	2,606	3,673
	Verbal aggression	0,156	0,270	2,654	0,01	0,039	0,274
	Gender (female)	0,363	0,264	2,602	0,011	0,641	0,085
	CAT score	-0,009	-0,249	-2,497	0,015	-0,16	-0,002
4.	(Constant)	2,473		5,821	0,001	1,627	3,319
	Verbal aggression	0,177	0,306	3,018	0,003	0,06	0,294
	Gender (female)	0,346	0,252	2,521	0,014	0,619	0,073
	CAT score	-0,008	-0,239	-2,434	0,017	0,015	-0,002
	Attempted suicide	0,567	0,199	1,998	0,049	0,002	1,132

B – unstandardized coefficients, β – standardized coefficients, CI – confidence interval

IIH patient group analysis. Upon applying the stepwise multiple regression, statistically significant factors were left in the obtained predictive models which are shown in Tables 19, 20. In model 1, the factor "verbal aggression" explains 24 per cent of variation of the dependent variable (i.e. a degree of coercion). Upon adding the factor "attribution to the group of the diagnostic categories F20-F29" to model 2, explanation of variation of the dependent variable increased up to 31 per cent. Upon adding the third factor "CAT score" to model 3, explanation of variation of the dependent variable increased up to 37 per cent.

Table 19. The quality parameters of the degree of coercion model of the studied patients of IIH group

Model	R	R^2	AR^2
1	0,500(a)	0,250	0,242
2	0,571(b)	0,327	0,312
3	0,628(c)	0,394	0,374

a – verbal aggression, b – verbal aggression; attribution to the group of the diagnostic categories F20-F29; c – verbal aggression; attribution to the group of the diagnostic categories F20-F29; CAT score, R – multiple correlation coefficient, R^2 – coefficient of determination, AR^2 – adjusted coefficient of determination

Table 20. The coefficients of the final model of regression of the studied patients of IIH group and their statistical values

Model		B	β	t	p	B CI (95 %) Lower Bound	B CI (95 %) Lower Bound
1	(Constant)	1,677		17,928	0,0001	1,491	1,863
	Verbal aggression	0,417	0,500	5,514	0,0001	0,267	0,568
2	(Constant)	2,338		10,363	0,0001	1,890	2,787
	Verbal aggression	0,399	0,478	5,513	0,0001	0,255	0,543
	Attribution to the group of the diagnostic categories F20-F29	0,523	0,277	3,191	0,002	0,849	0,198
3	(Constant)	2,930		10,254	0,0001	2,362	3,498
	Verbal aggression	0,308	0,369	4,106	0,0001	0,159	0,456
	Attribution to the group of the diagnostic categories F20-F29	0,516	0,273	3,296	0,001	0,827	0,205
	CAT score	-0,014	-0,282	-3,149	0,002	-0,022	-0,005

B – unstandardized coefficients, β – standardized coefficients, CI – confidence interval

An overall analysis of formally and informally involuntarily hospitalised (FIH and IIH) patients. Upon applying the stepwise multiple regression, statistically significant factors were left in the obtained predictive models which are shown in Tables 21, 22. In model 1, the factor "verbal aggression" explains 22 per cent of variation of the

dependent variable (i.e. the degree of coercion). Upon adding the factor "CAT score" to model 2, explanation of variation of the dependent variable increased up to 30 per cent. Upon adding the third factor "formal involuntary hospitalisation" to model 3, explanation of variation of the dependent variable increased up to 33 per cent. Upon adding the factor "attribution to the group of the diagnostic categories F20-F29" to model 4, explanation of variation of the dependent variable increased up to 35 per cent.

Table 21. The quality parameters of the degree of coercion model of formally and informally hospitalised patients (FIH and IIH groups together)

Model	R	R^2	AR^2
1	0,468(a)	0,219	0,215
2	0,556(b)	0,310	0,302
3	0,584(c)	0,341	0,330
4	0,602(d)	0,363	0,348

a – verbal aggression, b – verbal aggression; CAT score; c – verbal aggression; CAT score; formal involuntary hospitalization; d – verbal aggression; CAT score; formal involuntary hospitalization; attribution to the group of the diagnostic categories F20-F29, R – multiple correlation coefficient, R^2 – coefficient of determination, AR^2 – adjusted coefficient of determination

Table 22. The coefficients of the final model of regression of formally and informally hospitalised patients (FIH and IIH groups together) and their statistical values

Model		B	β	t	p	B CI (95 %)	
						Lower Bound	Upper Bound
1	(Constant)	1,908		25,733	0,0001	1,762	2,055
	Verbal aggression	0,338	0,468	6,994	0,0001	0,242	0,433
2	(Constant)	2,429		18,686	0,0001	2,172	2,685
	Verbal aggression	0,281	0,389	5,961	0,0001	0,188	0,374
	CAT score	-0,013	-0,310	-4,751	0,0001	-0,019	-0,008
3	(Constant)	1,961		9,509	0,0001	1,554	2,368
	Verbal aggression	0,250	0,347	5,278	0,0001	0,156	0,343
	CAT score	-0,012	-0,274	-4,193	0,0001	-0,017	-0,006
	Formal involuntary hospitalization	0,303	0,189	2,884	0,004	0,096	0,511
4	(Constant)	2,436		8,556	0,0001	1,874	2,998
	Verbal aggression	0,234	0,325	4,964	0,0001	0,141	0,327
	CAT score	-0,012	-0,284	-4,406	0,0001	-0,018	-0,007
	Formal involuntary hospitalization	0,259	0,162	2,459	0,015	0,051	0,467
	Attribution to the group of the diagnostic categories F20-F29	0,324	0,150	2,385	0,018	0,592	0,056

B – unstandardized coefficients, β – standardized coefficients, CI – confidence interval

Restriction on patients' freedom of movement during inpatient treatment

Further, there was made a comparison of restrictions imposed on the free movement out of department within the entire term of the studied hospitalisation for two groups of the studied patients. A percentage of the time spent under prescribed regime I (when a patient is not permitted to leave the department at all), regime II (when a patient can leave the department if accompanied by another person) and regimes I and II together during the term of inpatient treatment was compared. The comparison of FIH and IIH patient groups showed that the time spent under prescribed regime I by the studied patients of FIH group during inpatient treatment had been longer than that of the studied patients of IIH group. Assessment of the total length of time spent under regime

II, and regimes I and II did not show any statistically significant differences between the studied groups. Data are presented in Table 23.

Table 23. Restrictions imposed on the studied patients of FIH and IIH groups with regard to free movement out of the department within the entire period of the studied hospitalisation

	FIH (n=83)				IIH (n=93)				U	p
	Me	MeCI (95 %)	Min	Max	Me	MeI (95%)	Min	Max		
A percentage of the time spent under prescribed regime I	31,6	21,2–41,7	0	100	16	11,7–24,1	0	100	2971,5	0,008
A percentage of the time spent under prescribed regime II	33	23,4–44,1	0	100	39,6	33,2–51,0	0	100	3459,5	0,235
A percentage of the time spent under prescribed regimes I and II together	88	76,9–100,0	14,3	100	90	75,5–98,0	0	100	3628,5	0,481

n – number of patients, Me – median, MeCI – confidence interval for the median, Min – minimum, Max – maximum, U – Mann-Whitney U, p – p-value

Third stage of the study

Assessment done in the third stage of the study focused on the duration of the studied hospitalisation, the risk of rehospitalisation (i.e. whether a patient was re-hospitalised at least once), the number of re-hospitalisations and time to rehospitalisation within 3 years from discharge from the surveyed hospitalisation in the studied groups of formally involuntarily hospitalised (FIH), informally involuntarily hospitalised (IIH) and voluntarily hospitalised not feeling coerced (VHNFC) patients. Data on the durations of the studied hospitalisation and re-hospitalisations were obtained from medical documentation.

Group of diagnostic categories, age, gender and type of referral for hospitalisation

The groups of the studied FIH, IIH and VHNFC patients were compared by inclusion into a group of diagnostic categories, age, gender and type of referral for hospitalisation.

Comparison of the diagnoses established for the patients of three groups according to inclusion into the group of the diagnostic categories F20-F29 or other ICD-10 F categories showed a statistically significant difference among the three groups. In VHNFC patient group, diagnoses of the group of the diagnostic categories F20-F29 were established for 274 (72.5 per cent) and diagnoses of other F diagnostic categories were made for 104 (27.5 per cent) studied patients; in IFH patient group 78 (91.8 per cent) patients were diagnosed with the disorders of the group of the diagnostic categories F20-F29 and 7 (8.2 per cent) patients – other disorders of the F diagnostic categories; in VHNFC group 73 (76.8 per cent) patients were diagnosed with the disorders of the group of the diagnostic categories F20-F29 and 22 (23.2 per cent) studied patients – with other disorders of the F diagnostic categories ($\chi2=14.235$, ll=2, n=558, p=0.01). Statistically significant differences were determined between FIH and IIH patient groups ($\chi2=14,15$, ll=1, n=463, p=0.0001) and FIH and VHNFC groups ($\chi2=7.391$, ll=1, n=180, p=0.007), in the meantime no statistically significant difference was recorded between VHNFC and IIH patient groups ($\chi2=0.737$, ll=1, n=473, p=0.391). These findings show that the diagnoses of the diagnostic categories F20-F29 were more often established for patients from FIH group compared to those from the two other groups.

The performed analysis of variance (ANOVA) of FIH, IIH and VHNFC patient groups did not show statistically significant differences among the groups according to age. Data of the analysis are presented in Table 24.

Table 24. Comparison by age of the studied patients of the FIH, IIH and VHNFC groups

	Patient group	n	Mn	Max	M	CI (95 %)	SD	SE
1.	VHNFC	378	18	64	40,8	39,6–42,0	11,791	0,606
2.	FIH	85	20	64	40,9	37,9–43,0	11,678	1,267
3.	IIH	95	18	63	39,7	37,2–42,1	12,114	1,243
	Total	558	18	64	40,6	39,6–41,5	11,815	0,500

n – number of patients, Min – minimum, Max – maximum, M – mean age, CI – confidence interval SD – standard deviation, SE – standard error
$F_{(2,555)}=0,342$, p=0,710

Comparison by gender of the three studied groups did not show a statistically significant difference. VHNFC patient group included 188 (49.7 per cent) females and

190 (50.3 per cent) males, FIH group – 46 (54.1 per cent) females and 39 (45.9 per cent) males, and VHNFC group – 41 (43.2 per cent) females and 54 (56.8 per cent) males ($\chi2$=2.252, ll=2, n=558, p=0.324).

According to the type of referral for the studied hospitalisation (referral from an emergency medical service (EMS), referral from an outpatient personal health care institution (PHCI), without referral) no differences were present among the three studied groups. In VHNFC patient group the aforementioned types distributed as follows: EMS referral – 183 (48.4 per cent), outpatient PHCI referral – 141 (37.3 per cent), without referral – 54 (14.3 per cent); in FIH group: EMS referral – 52 (61.2 per cent), outpatient PHCI referral – 24 (28.2 per cent), without referral – 9 (10.6 per cent); in IIH patient group: EMS referral – 52 (54.7 per cent), outpatient PHCI referral – 29 (30.5 per cent), without referral – 14 (14.7 per cent) ($\chi2$=5.434, ll=4, n=558, p=0.246).

Duration of hospitalisation, risk of rehospitalisation, the number of re-hospitalisations, time to the 1st rehospitalisation

Considering the fact that the most frequent diagnoses established for involuntarily hospitalised patients in this and previous studies are those from the group of the diagnostic categories F20-F29, assessment of the indicators of hospitalisation and rehospitalisation covered not only the total sample of the studied patients, but also separately the patients included into to the group of the diagnostic categories F20-F29.

The Kruskal-Wallis non-parametric test was used to compare the three groups. A statistically significant difference was established among the three groups of the studied patients according to the duration of the studied hospitalisation (Table 25).

Table 25. Duration of the studied hospitalisation (in days) of the patients of VHNFC, FIH and IIH patient groups

Patient group	n	Me	MeCI (95 %)	Min	Max
VHNFC	378	31	29,0–34,0	0	1231
FIH	85	44	37,0–49,0	3	233
IIH	95	39	33,5–47,5	3	323

$\chi2$=18,356, ll=2, N=558, p=0,001, n – number of patients, Me – median, MeCI – confidence interval for the median, Min – minimum, Max – maximum

The three groups were also compared with each other using the Mann-Whitney test. Statistically significant differences were established between VHNFC and FIH patient groups (Mann-Whitney U=11965.5, p=0.001) as well as VHNFC and IIH patient groups (Mann-Whitney U=14562.5, p=0.004), in the meantime no statistically significant difference was recorded between FIH and IIH patient groups (Mann-Whitney U=3736.0, p=0.387). Patients from the groups of the diagnostic categories F20-F29 were also compared by the Kruskal-Wallis non-parametric test. The results of this test showed a statistically significant difference between the three groups of the studied patients ($\chi2$=7.771, ll=2, n=425, p=0.021). Afterward, the three groups were compared with each other using the Mann-Whitney test. The test showed a statistically significant difference between VHNFC and FIH patient groups (Mann-Whitney U=8656.0, p=0.01). There was a difference between VHNFC and IIH groups, but it did not reach statistical significance (Mann-Whitney U=8766.5, p=0.105). No statistically significant difference was recorded between FIH and IIH patient groups (Mann-Whitney U=2651.5, p=0.466). According to these findings, the length of hospitalisation of the patients from VHNFC group is shorter than that of FIH and IIH group patients (except for the case when the difference in hospitalisation duration of VHNFC and IIH patient groups did not reach statistical significance) and no differences between FIH and IIH groups is present.

The performed comparison of the risk of rehospitalisation among 3 groups of the studied patients showed a statistically significant difference between them. In VHNFC patient group: 189 (50.0 per cent) patients were re-hospitalised, 189 (50.0 per cent) were not re-hospitalised; in FIH patient group: 56 (65.9 per cent) patients were re-hospitalised, 29 (34.1 per cent) were not re-hospitalised; and in IIH patient group: 64 (67.4 per cent) patients were re-hospitalised, and 31 (32.6 per cent) were not re-hospitalised. ($\chi2$=13.747, ll=2, n=558, p=0.001) (Fig. 8).
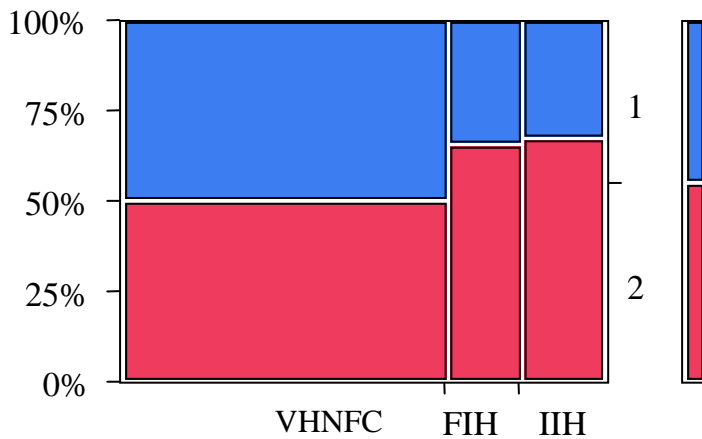
Fig. 8. Distribution of re-hospitalised and not re-hospitalised patients in VHNFC, FIH and IIH studied patient groups (1 – not re-hospitalised, 2 – re-hospitalised)

Statistically significant differences were established between FIH and VHNFC patient groups ($\chi2=7.026$, ll=1, n=463, p=0.008) and VHNFC and IIH groups ($\chi2=9.206$, ll=1, n=473, p=0.002), in the meantime no statistically significant difference was recorded between FIH and IIH patient groups ($\chi2=0.045$, ll=1, n=180, p=0.833). A comparison of the indicator of the risk of rehospitalisation among the patients of the group of the diagnostic categories F20-F29 was also made. In VHNFC patient group: 154 (56.2 per cent) patients were re-hospitalised and 120 (43.8 per cent) were not re-hospitalised, in FIH patient group 54 (69.2 per cent) patients were re-hospitalised and 24 (30.8 per cent) were not re-hospitalised, in IIH group 53 patients (72.6 per cent) were re-hospitalised and 20 (27.4 per cent) were not re-hospitalised ($\chi2=9.006$, ll=2, n=425, p=0.011). Statistically significant differences were established between FIH and VHNFC patient groups ($\chi2=4.262$, ll=1, n=352, p=0.039), and VHNFC and IIH groups ($\chi2=6.44$, ll=1, n=347, p=0.011), meanwhile no statistically significant difference was recorded between FIH and IIH patient groups ($\chi2=0.208$, ll=1, n=151, p=0.649). These findings show that the number of re-hospitalisations in VHNFC group was lesser versus FIH and IIH patient groups. There were no differences in re-hospitalisations between the two latter groups.

To compare the number of re-hospitalisations among the three groups of the studied patients, the Kruskal-Wallis non-parametric test was employed. This comparative analysis focused only on those patients who were re-hospitalised at least

once within a period of 3 years. A statistically significant difference among the three studied groups was established. Data are presented in Table 26.

Table 26. The number of re-hospitalisations of the studied patients from VHNFC, FIH and IIH patient groups

Patient group	n	Me	MeCI (95 %)	Min	Max
VHNFC	189	1	1,0–2,0	1	10
FIH	55	3	2,0–3,0	1	7
IIH	64	2	1,7–3,0	1	8

$\chi 2$=13,925, ll=2, N=308, p=0,001, n – number of patients, Me – median, MeCI – confidence interval for the median, Min – minimum, Max – maximum

Afterward, the three groups were compared with each other using the Mann-Whitney test. Statistically significant differences were established between VHNFC and FIH patient groups (Mann-Whitney U=3791.0, p=0.001), and VHNFC and IIH groups (Mann-Whitney U=4799.0, p=0.008), in the meantime no statistically significant difference was recorded between FIH and IIH patient groups (Mann-Whitney U=1675.0, p=0.641). Patients from the group of the diagnostic categories F20-F29 were also compared using the Kruskal-Wallis non-parametric test. The results of this test showed a statistically significant difference between the three groups of the studied patients ($\chi 2$=15.644, ll=2, N=259, p=0.0001). Afterward, the three groups were compared with each other using the Mann-Whitney test. Statistically significant differences were established between VHNFC and FIH patient groups (Mann-Whitney U=2804.5, p=0.001), and VHNFC and IIH groups (Mann-Whitney U=3077.0, p=0.004), meanwhile no statistically significant difference was recorded between FIH and IIH patient groups (Mann-Whitney U=1332.0, p=0.762). These findings show that patients from VHNFC group were less frequently re-hospitalised compared with those from FIH and IIH groups and there are no differences in the number of re-hospitalisations between FIH and IIH groups.

The three groups of the studied patients were compared by the time to the first rehospitalisation (in days) using the Kaplan-Meier estimator. The findings are presented in Table 27 and Figure 9. In order to determine a statistically significant difference

among the groups, the Breslow test (the generalised Wilocoxon test) was used as it is the most expedient at the presence of the biggest number of events at the beginning of the period concerned (Table 28).

Table 27. Comparison of the patients of VHNFC, FIH and IIH groups by a length of time (in days) before the first rehospitalisation

Patient group	Me	SD	CI (95 %)
VHNFC	276,000	21,306	234,240–317,760
FIH	163,000	52,383	60,329–265,671
IIF	184,000	33,500	118,340–249,660
All groups	243,000	18,128	207,470–278,530

Me – median, SD – standard deviation, CI – confidence interval

Table 28. Estimation of the statistical significance of a difference in time (in days) before the first rehospitalisation of the studied patients from VHNFC, FIH and IIH groups using the Breslow test (the generalised Wilocoxon test)

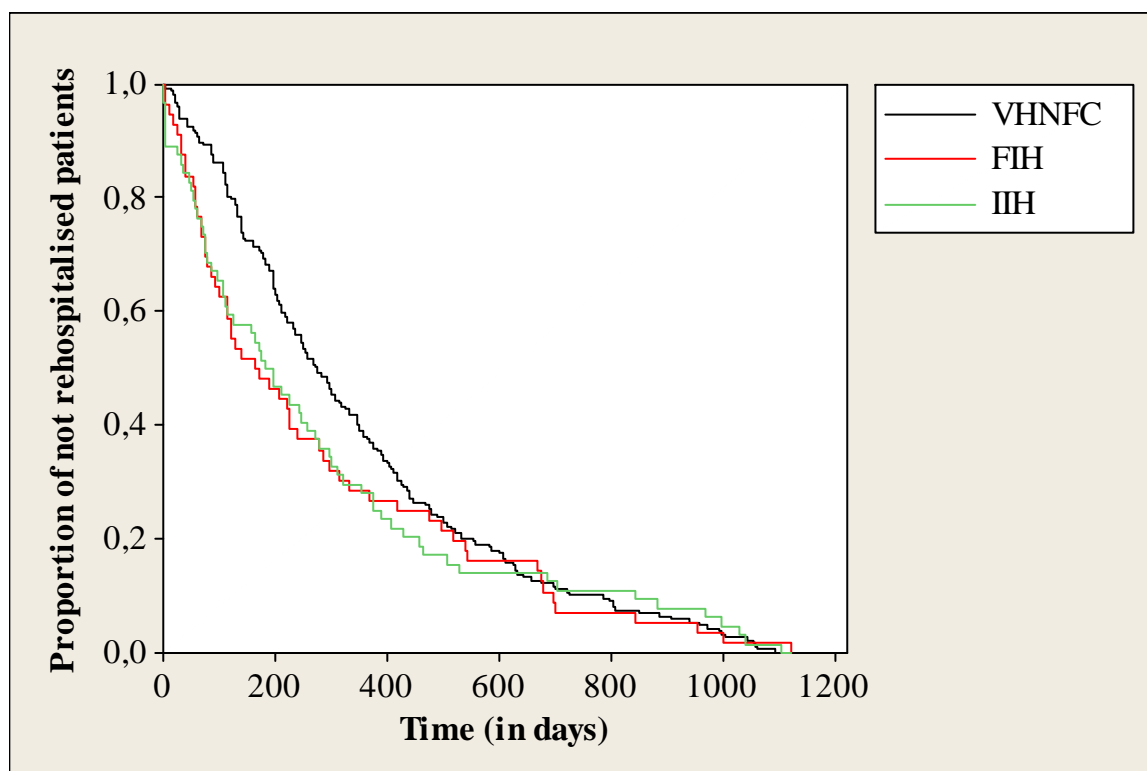| Patient group	VHNFC		FIH		IIH	
	χ^2	p	χ^2	p	χ^2	p
VHNFC			7,127	0,008	7,367	0,007
FIH	7,127	0,008			0,000	0,985
IIH	7,367	0,007	0,000	0,985		

Fig. 9. Comparison of patients from VHNFC, FIH and IIH groups by a length of time (in days) before the first rehospitalisation

The Kaplan-Meier estimator was repeatedly applied exceptionally for the patients of the group of the diagnostic categories F20-F29, and the three groups were compared according to the time to the first rehospitalisation. Results are presented in Tables 29 and 30.

Table 29. Comparison of the studied patients of VHNFC, FIH and IIH groups (only those included into to the group of the diagnostic categories F20-F29) by the length of time (in days) before the first rehospitalisation

Patient group	Me	SD	CI (95 %)
VHNFC (F20–F29)	267,000	23,359	221,216–312,784
FIH (F20–F29)	163,000	51,439	62,179–263,821
IIH (F20-F29)	176,000	45,233	87,344–264,656
All groups (F20–F29)	237,000	19,039	199,683–274,317

Me – median, SD – standard deviation, CI – confidence interval

Table 30. Estimation of the statistical significance of a difference in time (in days) before the first rehospitalisation of the studied patients from VHNFC, FIH and IIH groups (only those included into to the group of the diagnostic categories F20-F29) using the Breslow test (the generalised Wilocoxon test)

Patient group	VHNFC (F20–F29)		FIH (F20–F29)		IIH (F20–F29)	
	χ^2	p	χ^2	p	χ^2	p
VHNFC (F20–F29)			7,750	0,005	11,479	0,001
FIH (F20–F29)	7,750	0,005			0,156	0,693
IIH (F20–F29)	11,479	0,001	0,156	0,693		

As the obtained data show, time to rehospitalisation of the patients of VHNFC group is longer compared with FIH and IIH group patients, meanwhile there is no difference between FIH and IIH group patients.

CONCLUSIONS

1. The indicator of formally involuntarily hospitalised patients per 10^5 residents per year in the catchment area of Vilnius Mental Health Centre is similar to the indicators of the European Union states with relatively low involuntary hospitalisations, such as Italy, Denmark or the Netherlands.

2. Formal involuntary hospitalisations account for 11 per cent of the patients treated in acute psychiatry departments; however, considering the fact that 17 per cent of voluntarily hospitalised patients experience coercion, the total number of the patients who feel coerced in the process of hospitalisation more than doubles and makes up more than a quarter of the total hospitalisations.

3. Nearly all formally involuntarily hospitalised patients feel coerced in the process of hospitalisation.

4. The majority of the socio-demographic, psychopathology, quality of life and treatment characteristics of formally involuntarily hospitalised patients and informally involuntarily hospitalised patients are similar.

5. Formally involuntarily hospitalised patients feel stronger coercion, more often display aggression and are less satisfied with treatment than informally involuntarily hospitalised patients.

6. The degree of coercion felt during hospitalisation is chiefly related with verbal aggression, dissatisfaction with treatment, formal involuntary hospitalisation and the diagnoses of the group of the diagnostic categories of schizophrenia, schizotypal and delusional disorders (F20-29).

7. The indicators of hospitalisation and rehospitalisation within three years after discharge from hospital do not differ between formally involuntarily hospitalised patients and informally involuntarily hospitalised patients.

8. Compared with voluntarily hospitalised patients, formally involuntarily and informally involuntarily hospitalised patients are treated longer during the studied hospitalisation, more of them are re-hospitalised, stay shorter not re-hospitalised and are more often re-hospitalised within three years from the studied hospitalisation.

RECOMMENDATIONS

1. To develop and integrate into the system of medical statistical documentation a system of registration of involuntary hospitalisations in a psychiatric inpatient facility and use it in the provision of inpatient mental healthcare services. This system would comprise: the registration of all cases of involuntary hospitalisation in the process of hospitalisation, registration of involuntary hospitalisation indications, registration of the duration of involuntary hospitalisation, and registration of involuntary hospitalisations by a court order.

2. When assessing the quality of services provided at acute psychiatry inpatient facilities, to assess all patients under hospitalisation with regard to perceived coercion.

3. Due to the risk of experiencing strong coercion, to apply the assessment of perceived coercion and the measures of coercion prevention and mitigation for aggressive patients.

4. Considering the poorer objective outcomes of inpatient treatment of coerced patients compared with those were not coerced, to introduce measures for the prevention of coercion in clinical practice, and develop and apply methods for mitigating coercion consequences for the patients who suffered coercion.

5. To carry out research on coercion in psychiatry at Lithuania's other inpatient facilities by assessing the prevalence of formal and informal hospitalisation and other measures of coercion.

PUBLICATIONS

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2. V. Raškauskas, A. Dembinskas, A.Navickas, V.Danilevičiūtė. Priverstinai į ūmios psichiatrijos skyrius hospitalizuotų pacientų rehospitalizavimo dažnis *(Frequency of rehospitalisations in involuntary patients hospitalized to acute psychiatric wards)*. Visuomenės sveikata 2009; 4: 122-129.

3. V. Raškauskas, A. Dembinskas, A.Navickas, V.Danilevičiūtė. Priverstinio hospitalizavimo į psichiatrijos stacionarą Lietuvoje teisinio reguliavimo ir paplitimo aspektai Europos valstybių kontekste *(Aspects of legal regulation and prevalence of involuntary hospitalisation in Lithuania within the context of European countries)*. Sveikatos mokslai 2010; 2: 3000-3005.

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SANTRAUKA

Darbo tikslas

Nustatyti formalaus ir neformalaus priverstinio hospitalizavimo paplitimą, priverstinai hospitalizuojamų pacientų klinikinį profilį, prievartos stiprumo veiksnius ir priverstinio hospitalizavimo objektyvias baigtis.

Darbo uždaviniai

1. Nustatyti formalaus priverstinio hospitalizavimo paplitimą Vilniaus miesto psichikos sveikatos centro aptarnaujamoje teritorijoje.

2. Nustatyti formaliai priverstinai ir savo noru hospitalizuotų pacientų jaučiamos prievartos pasireiškimo dažnį.

3. Nustatyti ir palyginti formaliai priverstinai hospitalizuotų ir neformaliai priverstinai hospitalizuotų pacientų socialines demografines, klinikines bei gydymo charakteristikas.

4. Nustatyti ir palyginti formaliai priverstinai hospitalizuotų ir neformaliai priverstinai hospitalizuotų pacientų jaučiamos prievartos stiprumą ir jo veiksnius.

5. Nustatyti ir palyginti formaliai priverstinai hospitalizuotų ir neformaliai priverstinai hospitalizuotų pacientų hospitalizavimo ir rehospitalizavimo trejų metų laikotarpiu rodiklius.

Ginamieji teiginiai

1. Dalis savo noru į ūmios psichiatrijos skyrius guldomų pacientų patiria neformalią prievartą ir pagal socialinius demografinius, klinikinius požymius bei prievartos jutimo stiprumą yra panašūs į formaliai priverstinai hospitalizuojamus pacientus.

2. Hospitalizuojant jaučiamos prievartos stiprumas susijęs su socialiniais demografiniais veiksniais, psichopatologija, gyvenimo kokybe, paciento agresija, formaliu priverstiniu hospitalizavimu ir taikomu gydymu.

3. Formaliai priverstinai hospitalizuotų ir neformaliai priverstinai hospitalizuotų pacientų hospitalizavimo trukmės ir rehospitalizavimo rodikliai yra blogesni nei savo noru hospitalizuotų, prievartos nejaučiančių pacientų.

Darbo mokslinis naujumas

Šiame darbe pirmą kartą Lietuvoje įvertintas psichiatrijos stacionaro aptarnaujamos teritorijos formalaus priverstinio hospitalizavimo paplitimas ir nustatytas formaliai priverstinai ir savo noru į psichiatrijos stacionarą hospitalizuotų pacientų subjektyviai jaučiamos prievartos dažnis.

Darbe atliktas savo noru hospitalizuotų, bet subjektyviai jaučiančių prievartą, t. y. neformaliai priverstinai hospitalizuotų, pacientų palyginimas su formaliai priverstinai hospitalizuotais pacientais bei analizuotas anksčiau netirtas agresijos ryšys su subjektyvaus prievartos jutimo stiprumu, taip pat nedaug iki šio tyrimo tirtos galimos psichopatologinių ir kitų veiksnių sąsajos su prievarta.

Taip pat buvo įvertintos hospitalizavimo metu patirtos prievartos objektyvios baigtys. Pirmą kartą buvo įvertinti ir palyginti formaliai priverstinai hospitalizuotų, neformaliai priverstinai hospitalizuotų ir savo noru hospitalizuotų, bet subjektyviai nejaučiančių prievartos pacientų rehospitalizavimo trejų metų laikotarpiu rodikliai.

Šio darbo rezultatai rodo pagrindinių formalios ir neformalios prievartos formų paplitimą, papildo turimas žinias apie subjektyvaus prievartos jutimo veiksnius, suteikia informacijos apie formalią ir neformalią prievartą patiriančių pacientų panašumus ir skirtumus bei šių pacientų rehospitalizavimo rodiklius.

Tyrimo metodika

Tyrimui naudoti epidemiologinis aprašomasis, lyginamasis ir perspektyvusis lyginamasis tyrimo modeliai. Buvo tiriami į Vilniaus miesto psichikos sveikatos centro ūmios psichiatrijos skyrius (I vyrų ir I moterų) hospitalizuoti pacientai. Pirmajame tyrimo etape buvo vertinamas formalių priverstinių hospitalizavimų paplitimas, taip pat formaliai priverstinai hospitalizuotų ir savo noru hospitalizuotų pacientų subjektyviai jaučiamos prievartos pasireiškimo dažnis ir jos stiprumas. Antrajame tyrimo etape buvo palyginti formaliai priverstinai hospitalizuotų pacientų ir neformaliai priverstinai hospitalizuotų (t. y. subjektyviai jaučiančių prievartą) pacientų socialinės demografinės, psichopatologinės ir kitos klinikinės charakteristikos. Trečiajame tyrimo etape buvo įvertinti ir palyginti formaliai priverstinai hospitalizuotų, neformaliai priverstinai hospitalizuotų ir savo noru hospitalizuotų, bet subjektyviai nejaučiančių prievartos pacientų rehospitalizavimo trejų metų laikotarpiu rodikliai.

Duomenys apdoroti naudojant „SPSS 15.0 for Windows", „JMP 7", „StatGraphic Plus 5.1", „Minitab 15" statistinius paketus. Lyginant proporcijas pagal dažnių lenteles taikytas neparametrinis chi kvadrato (χ2) kriterijus arba dvipusis tikslusis Fisherio testas proporcijoms nustatyti. Esant normaliam duomenų pasiskirstymui, tolydiesiems grupių kintamiesiems palyginti naudota dispersinė analizė (ANOVA). Nesant normalaus duomenų pasiskirstymo arba esant kategoriniams kintamiesiems, taikyti neparametriniai Kruskalo–Walliso (su Bonferonnio kriterijumi poriniams palyginimams) ir Manno–Whitney'o testai, o rezultatai pateikti naudojant medianas ir jų pasikliautinius intervalus. Išgyvenamumo funkcijai (laikui iki rehospitalizavimo) įvertinti naudotas Kaplano–Meierio metodas, skirtumai tarp grupių įvertinti Breslow (generalizuotu Wilcoxono) testu. Ryšių tarp požymių stiprumui nustatyti nesant normalaus duomenų pasiskirstymo arba esant kategoriniams kintamiesiems naudotas neparametrinis Spearmano koreliacijos koeficientas. Ryšių tarp požymių stiprumui nustatyti, kai kategoriniai duomenys turi daug sutapimų (vienodų rangų), naudota neparametrinė gama koreliacija. Priklausomą požymį lemiantiems veiksniams įvertinti pasitelkta daugybinė regresija, „laiptinis" metodas. Skirtumo tarp požymių statistiniam reikšmingumui nustatyti remtasi tikslia p reikšme. Skirtumas laikytas statistiškai reikšmingu esant 95 proc. tikimybei tada, kai p≤0,05, o esant 99 proc. tikimybei, kai p≤0,01.

Tyrimo rezultatai

Nustatyta, kad tiriamuoju laikotarpiu priverstinių hospitalizavimų rodiklis 10^5 gyventojų buvo nuo 39,5 – 2003 m., 38,1 – 2004 m., 23,0 – 2005 m. Taip pat buvo apskaičiuota priverstinių hospitalizavimų procentinė dalis iš visų hospitalizavimų į ūmios psichiatrijos skyrius, kuri sudarė 11 proc.

Iš tyrimo metu 734 MacArhtur subjektyviai jaučiamos prievartos skale apklaustų savo noru hospitalizuotų pacientų, 17 proc. subjektyviai jautė prievartą ir šiame tyrime buvo įvardinti, kaip neformaliai priverstinai hospitalizuoti. Iš visų formaliai priverstinai hospitalizuotų pacientų 98 proc. subjektyviai jautė prievartą. Lyginant savo noru hospitalizuotų pacientų ir formaliai priverstinai hospitalizuotų pacientų prievartos stiprumą, formaliai priverstinai hospitalizuoti pacientai jautė žymiai stipresnę prievartą.

Lyginant formaliai ir neformaliai priverstinai hospitalizuotus pacientus tarpusavyje pagal daugelį socialinių demografinių ir klinikinių charakteristikų šios dvi grupės buvo

vienodos, tačiau formaliai priverstinai hospitalizuoti pacientai buvo agresyvesni, mažiau patenkinti gydymu ir jautė stipresnę prievartą. Vertinant įvairių veiksnių ryšį su subjektyviai jaučiamos prievartos stiprumu, buvo nustatytas statistiškai reikšmingas ryšys su žodine agresija, nepasitenkinimu gydymu, formaliu priverstiniu hospitalizavimu ir šizofrenijos, šizotipinio ir kliedesinių sutrikimų (TLK-10 F20–F29) diagnostinių kategorijų grupės diagnozėmis.

Formaliai priverstinai ir neformaliai priverstinai hospitalizuotų pacientų buvimo stacionare trukmė (atitinkamai 44 ir 39 paros) buvo ilgesnė nei savo noru hospitalizuotų, prievartos nejaučiančių pacientų buvimo stacionare trukmė (31 para). Šio tyrimo metu formaliai priverstinai hospitalizuotų ir neformaliai priverstinai hospitalizuotų pacientų buvimo stacionare trukmė nesiskyrė, ir tai rodo, kad šiuo aspektu neformaliai priverstinai hospitalizuotų pacientų grupė nesiskiria nuo formaliai priverstinai hospitalizuotų, tačiau abi šios grupės skiriasi nuo savo noru hospitalizuotų, prievartos nejaučiančių pacientų grupės.

Tyrimo metu neišryškėjo formaliai priverstinai ir neformaliai priverstinai hospitalizuotų tiriamųjų grupių rehospitalizavimo rodiklių (rehospitalizavimo buvimo, rehospitalizavimo skaičiaus, laiko iki pirmojo rehospitalizavimo) skirtumų, ir tai leidžia teigti, jog šiuo aspektu formaliai priverstinai ir neformaliai priverstinai hospitalizuotų tiriamųjų grupės yra vienodos. Tačiau šių dviejų grupių rezultatai yra blogesni nei savo noru hospitalizuotų ir prievartos nejaučiančių pacientų. Analogiški hospitalizavimo trukmės ir rehospitalizavimo rezultatai gauti ir analizuojant atrinktus tik šizofrenijos, šizotipinio ir kliedesinių sutrikimų (F20–F29) diagnostinių kategorijų grupei priklausančius pacientus.

Išvados

1. Formaliai priverstinai hospitalizuotų pacientų rodiklis 10^5 gyventojų per metus Vilniaus miesto psichikos sveikatos centro aptarnaujamoje teritorijoje yra panašus į santykinai nedidelio priverstinių hospitalizavimų skaičiaus Europos Sąjungos valstybių, pavyzdžiui, Italijos, Danijos, Nyderlandų, rodiklius.

2. Formaliai priverstinai hospitalizuojama 11 proc. ūmios psichiatrijos skyriuose gydomų pacientų, tačiau atsižvelgiant į tai, kad 17 proc. savo noru hospitalizuotų pacientų patiria prievartą, bendras prievartą hospitalizavimo metu patiriančių

pacientų skaičius padidėja daugiau nei du kartus ir sudaro daugiau kaip ketvirtadalį visų hospitalizavimų.

3. Beveik visi formaliai priverstinai hospitalizuoti pacientai jaučia prievartą hospitalizavimo metu.

4. Dauguma formaliai priverstinai hospitalizuotų ir neformaliai priverstinai hospitalizuotų pacientų socialinių demografinių, psichopatologijos, gyvenimo kokybės bei gydymo charakteristikų yra panašios.

5. Formaliai priverstinai hospitalizuoti pacientai jaučia stipresnę prievartą, pasižymi dažnesne agresija, mažiau patenkinti gydymu nei neformaliai priverstinai hospitalizuoti pacientai.

6. Hospitalizavimo metu jaučiamos prievartos stiprumas labiausiai susijęs su žodine agresija, nepasitenkinimu gydymu, formaliu priverstiniu hospitalizavimu ir šizofrenijos, šizotipinio ir kliedesinių sutrikimų (TLK-10 F20–F29) diagnostinių kategorijų grupės diagnozėmis.

7. Formaliai priverstinai ir neformaliai priverstinai hospitalizuotų pacientų hospitalizavimo ir rehospitalizavimo per trejus metus po išrašymo rodikliai nesiskiria.

8. Formaliai priverstinai ir neformaliai priverstinai hospitalizuoti pacientai, palyginti su savo noru hospitalizuotais pacientais, yra ilgiau gydomi tiriamojo hospitalizavimo metu, daugiau jų būna rehospitalizuojama, jie trumpiau išbūna nerehospitalizuoti ir daugiau kartų rehospitalizuojami per trejus metus nuo tiriamojo hospitalizavimo.

Rekomendacijos

1. Sukurti, integruoti į medicininės statistinės dokumentacijos sistemą ir teikiant stacionarines psichikos sveikatos priežiūros paslaugas visuotinai taikyti priverstinių hospitalizavimų į psichiatrijos stacionarą registravimo sistemą. Ši sistema apimtų: visų priverstinio hospitalizavimo atvejų registravimą hospitalizavimo metu, priverstinio hospitalizavimo indikacijų registravimą, priverstinio hospitalizavimo trukmės registravimą, teismo nutartimi vykdomų priverstinių hospitalizavimų registravimą.

2. Ūmios psichiatrijos stacionaruose vertinant teikiamų paslaugų kokybę taikyti subjektyviai patiriamos prievartos įvertinimą visiems hospitalizuotiems pacientams.

3. Agresyviems pacientams dėl rizikos patirti stiprią prievartą taikyti subjektyviai jaučiamos prievartos įvertinimą ir prievartos prevencijos bei padarinių mažinimo priemones.

4. Atsižvelgiant į prievartą patiriančių pacientų blogesnes nei prievartos nepatiriančių pacientų objektyvias stacionarinio gydymo baigtis, įdiegti į klinikinę praktiką prievartos prevencijos priemones, o prievartą patyrusiems pacientams sukurti ir taikyti prievartos padarinių mažinimo metodus.

5. Atlikti mokslinius prievartos psichiatrijoje tyrimus kituose Lietuvos stacionaruose siekiant įvertinti formalaus ir neformalaus priverstinio hospitalizavimo bei kitų prievartos priemonių paplitimą.

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