Post-Discharge Mortality in Patients with Mental Illness Hospitalized Compulsorily in Accordance with the Provisions of Article 29 of the Japanese Mental Health and Welfare Law.

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Introduction

- In Japan, two types of involuntary hospitalization have been defined for patients deemed to be a high risk of causing self-harm or harm to others due to mental illness. The first situation was ordered by the prefectural governor in accordance with the provisions of Article 29 of the Japanese Mental Health and Welfare Law, and is applied in cases involving the highest-risk patients. The second type is mandated for patients who have committed serious crimes, such as homicide, robbery, arson, sexual assault, and grievous bodily harm/battery, and is classified under court orders based on the Medical Treatment and Supervision Act (MTS).
- Mental disorders are strongly associated with premature mortality and remain an important health problem.
- Since the enactment of the MTS in 2005, complete follow-up assessments of patients with MTS have been conducted, and their mortality risks have been evaluated. However, as yet, there have been no large-size cohort studies investigating patients under Article 29, most of whom are presumed to have acute psychosis at the time of hospital admission.

Objectives

- To examine the post-discharge mortality risk in Article 29 patients.

Methods

- We conducted a large-size, three-year prospective cohort study on Article 29 patients admitted to 11 Japanese mental hospitals from May 15th, 2016, to October 3rd, 2023.
- In this cohort study, the following data were collected:
  - ✓ Gender
  - ✓ Age
  - ✓ Psychiatric diagnosis (based on ICD-10 codes)
  - ✓ Physical complications
  - ✓ Administrative process of the Article 29 hospitalization
  - ✓ Treatment history
  - ✓ Psychiatric/behavioral symptoms prior to index hospitalization
  - ✓ Patients' level of social functioning according to the Personal and Social Performance (PSP) scale*
  - ✓ Survival status for three years post-discharge
- We extracted data on patients who had at least one contact with the hospital following discharge from the index hospitalization and estimated the three-year mortality rate using the Kaplan-Meier method and standardized mortality ratio (SMR). The expected mortality rate was calculated based on the life table established by the Ministry of Health, Labour and Welfare, Japan.

* The PSP scale comprises four domains (self-care, socially useful activities, personal and social relationships, and disturbing and aggressive behaviors) and a global score. Each of the four domains is evaluated on a six-point scale (1–6, where lower ratings indicate better functioning). The global score is evaluated from 1 (maximum dysfunction) to 100 (maximum functioning) based on the four domain scores.

Results

Table 1. Demographic and clinical characteristics of the study cohort

Gender, n (%)		
Male	146	(61.9)
Female	90	(38.1)
Age (years)		
Mean (SD)	41.7	(13.9)
Median (IQR)	41	(31-50)
Principal psychiatric diagnosis (ICD-10), n (%)		
F2: Schizophrenia, schizotypal and delusional disorders	114	(48.3)
F3: Mood disorders	52	(22.0)
F1: Mental and behavioural disorders due to psychoactive substance use	20	(5.1)
F0: Organic, including symptomatic, mental disorders	12	(5.1)
F8: Disorders of psychological development	11	(4.7)
F7: Mental retardation	10	(4.2)
F4: Neurotic, stress-related and somatoform disorders	8	(3.4)
F6: Disorders of adult personality and behaviour	7	(3.0)
F9: Behavioural and emotional disorders with onset usually occurring in childhood and adolescence	1	(0.4)
Physical complication, n (%)	10	(4.2)
Treatment history, n (%)		
Previous psychiatric treatment history		
Yes	193	(81.8)
No	41	(17.4)
Unknown	2	(0.8)
Previous psychiatric admission		
Yes	123	(52.1)
No	109	(46.2)
Unknown	4	(1.7)
Previous Article 29 admission		
Yes	52	(22.0)
No	171	(72.5)
Unknown	13	(5.5)

SD: standardized deviation, IQR: inter-quartile range

Table 1. Demographic and clinical characteristics of the study cohort (cont'd)

Reasons for the index admission		
Self-harm behavior	78	(33.1)
Self-harm behavior solely	19	(8.1)
Other-injuring behavior	182	(77.1)
Destruction of things	137	(58.1)
Length of index hospitalization (days)		
Mean (SD)	125.3	(151.8)
Median (IQR)	88	(50-138.25)
PSP global score at discharge		
Mean (SD)	65.4	(13.9)
Median (IQR)	66	(60.75-75)
Length of follow-up period after discharge (days)		
Mean (SD)	766.8	(411.4)
Median (IQR)	1,096	(366-1,096)

- Of the 236 participants, 11 (4.7%) were confirmed to have died during the three-year follow-up period.
- Among these 11 deceased patients, five died by suicide, one in an accident, and two from natural causes. No information regarding the cause of death was available for the remaining three patients.
- The three-year mortality rate, estimated using the Kaplan-Meier method, was 2.8%, whereas the expected three-year mortality rate estimate was 0.772%. Consequently, the standardized mortality ratio (SMR) was calculated at 8.04 (95%CI: 4.41-14.3) (Figure 1).
- The results of the subgroup analyses are presented in Figures 2-5 and Table 2.

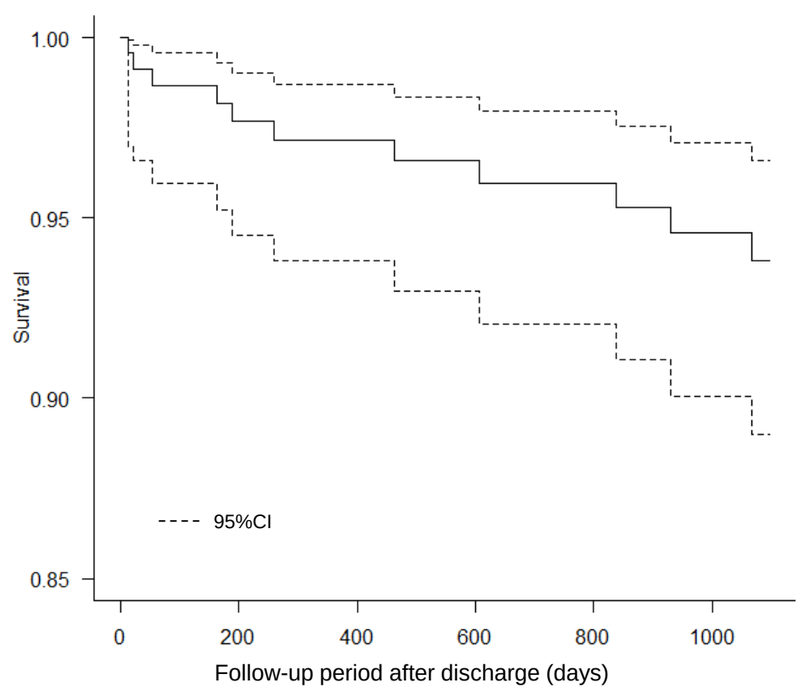
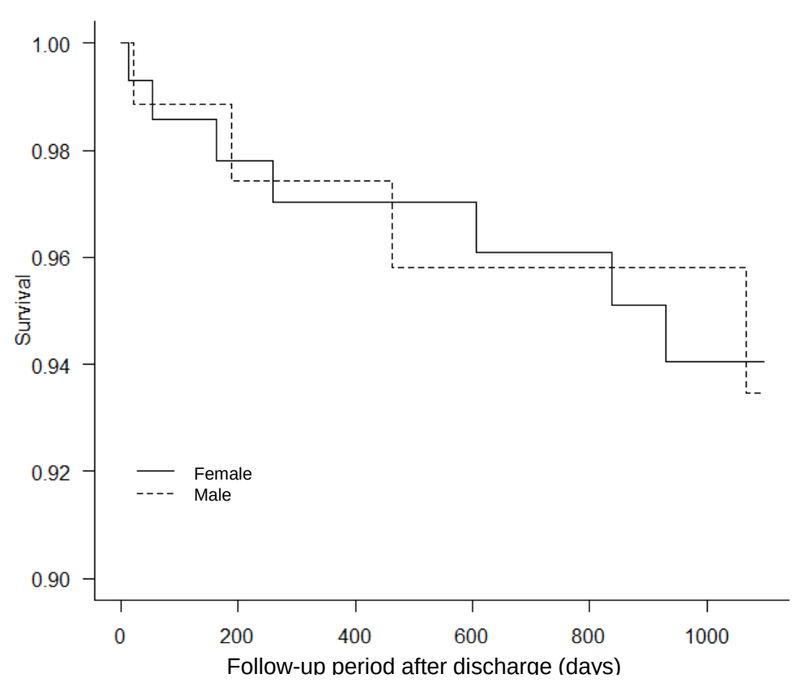


Figure 1. Survival after discharge: Total sample



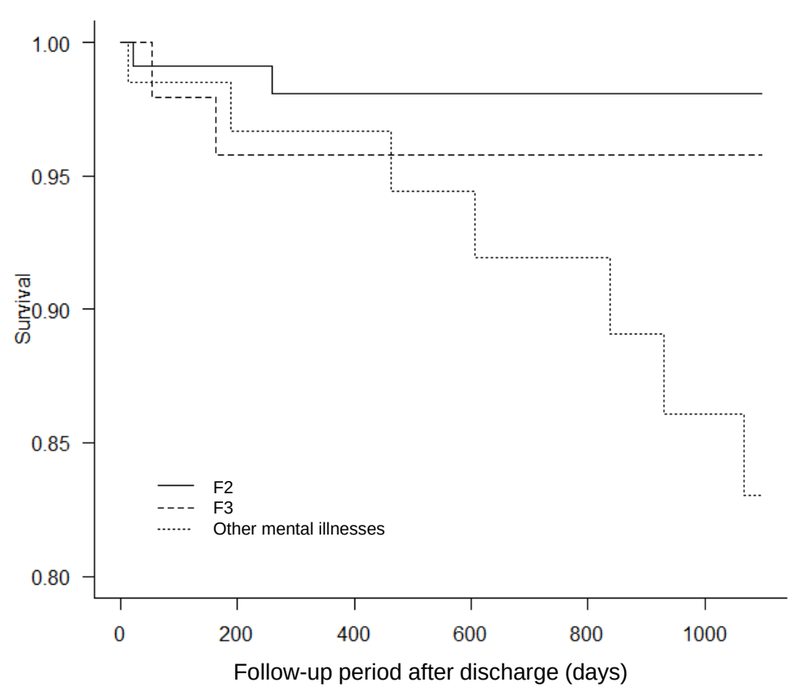


Figure 3. Survival by diagnostic group

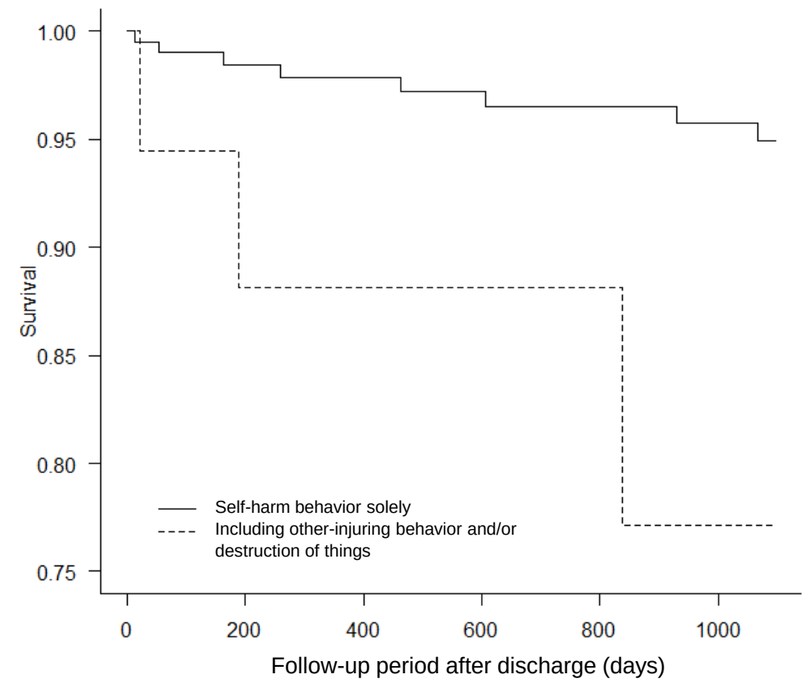


Figure 4. Survival by group of reasons for the index admission

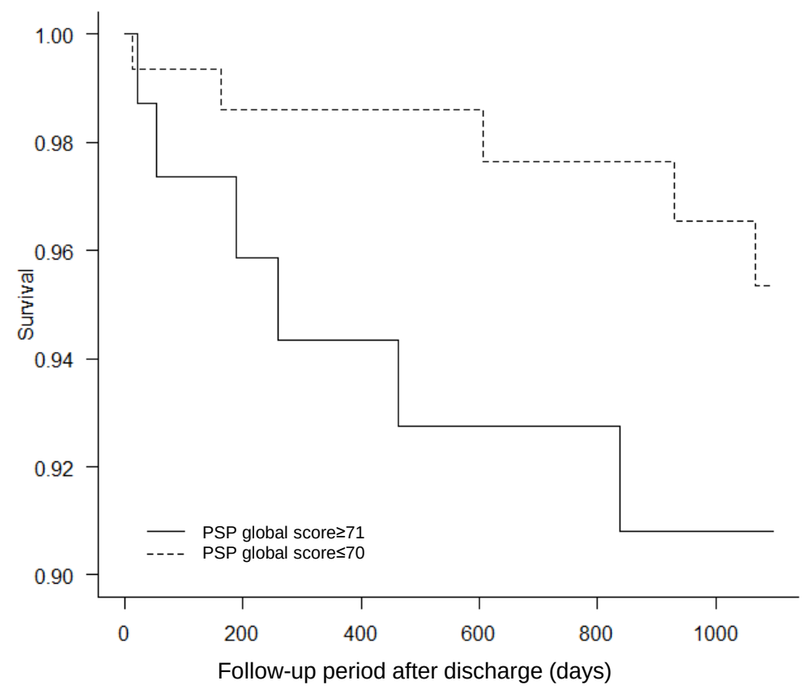


Figure 5. Survival by group of social functioning at discharge

Table 2. Standardized mortality ratios of patients hospitalized under Article 29 by gender, diagnosis, reasons for the index admission and social functioning

Variables	Mortality rates**	SMRs (95%CIs)
Total sample	6.2%	8.04 (4.41-14.3)
Gender		
Male	6.0%	6.08 (2.94-12.4)
Female	6.5%	15.4 (5.70-40.6)
Principal psychiatric diagnosis		
Schizophrenia, schizotypal and delusional disorders (ICD-10: F2)	1.9%	2.62 (0.69-10.3)
Mood disorders (ICD-10: F3)	4.2%	4.33 (1.13-16.3)
Other mental disorders	17.0%	24.1 (11.1-46.9)
Reasons for the index admission		
Self-harm behavior solely	22.9%	95.8 (31.0-244)
Including other-injuring behavior and/or destruction of things	5.1%	7.64 (3.75-15.1)
Social functioning at discharge		
High functioning (PSP≥71)	9.2%	13.4 (6.12-28.4)
Low functioning (PSP≤70)	4.7%	5.76 (2.33-13.6)

** based on the Kaplan-Meier method

Conclusion

- These findings suggest that being female, having mental illnesses other than F2/F3, being hospitalized solely due to the risk of self-harm, and having high social functioning at discharge were risk factors for post-discharge mortality following admission under Article 29.

Limitations

- In Japan, it is difficult to follow-up patients who discontinue treatment or change psychiatric institutions, mainly because of privacy policies. These difficulties may introduce biases into the results of the present study.

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