What kinds of factors affect the academic outcomes of university students with mental disorders? A retrospective study based on medical records

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ARTICLE INFO

ABSTRACT

Aims: University students that suffer from mental disorders seem to have difficulty graduating. Therefore, we investigated risk and protective factors of dropping out with the aim of improving such students' academic outcomes.

Methods: First, we statistically compared the academic outcomes of 203 undergraduate students who received treatment in the Department of Psychiatry of the Tsukuba University Health Center to those of matched controls. Second, clinical factors of 370 mentally ill students were statistically compared between the dropout and graduate groups.

Results: Mentally ill students experienced significantly greater difficulties graduating. Furthermore, the ratio of females and the year of study at initial consultation were significantly lower in the dropout group. However, duration of illness, social withdrawal, temporary leaves of absence, percentage of diagnosis of F2, history of truancy, CGI-S/GI score, number of suicide attempts, visits to us, family consultations with us and grade repeating were longer or greater in the dropout group. Ultimately, the number of suicide attempts, CGI-S score, social withdrawal and leaves of absence were significantly associated with dropping out. Moreover, duration of social withdrawal and leaves of absence were significantly correlated with CGI-GI score.

Conclusion: We found that the number of suicide attempts, CGI-S score, social withdrawal and extended enrollment were risk factors for dropping out, while the therapeutic effect seemed to be a protective factor.

As risk factors involved states of social maladjustment, it is necessary not only to treat mental disorders, but also to provide assistance such as educational and individual support for daily living.

1. Introduction

In Japan, the Disability Discrimination Act (Cabinet office, 2017) has been effective since April 2016, and support for disabled students is an urgent issue in universities. In recent years, psychiatric disorders have been positioned as a subject of disability support.

The Japan Student Services Organization estimates that about 10% of university students suffer from some type of psychological problem (Japan Student Services Organization, 2017). A 2012 report by the Ministry of Education, Culture, Sports, Science and Technology explained that 14.6% of reasons for dropping out were illness (including mental disorders) and injury (Ministry of Education, Culture, Sports, Science and Technology, 2017). In addition, a certain number of students who dropped out due to poor performance (14.5%) and problems adjusting to the university community are considered to have had mental problems.

In the United States, psychological/mental problems were indicated in 64% of students who voluntarily dropped out of university (National Alliance on Mental Illness, 2012). A large-scale survey by the American College Health Association reported that mental problems were major barriers to students' academic studies (American College Health Association, 2012). As per a report by the University of Illinois (Kiersch and Nikelly, 1966), dropout rates are expected to be higher in schizophrenic students than in students without mental disorder. There is also the serious problem of suicide (World Health Organization, 2017), which sometimes occurs in mentally ill students and is, obviously, an

event that thwarts graduation.

Regarding academic outcomes of university students in Japan, national university surveys performed by Uchida (Uchida, 2014) and Fuse (Fuse-Nagase and Miura et al., 2016a, 2016b) reported that gender, major, and extended enrollment were risks for dropping out. However, only 5% of students gave mental disorders as a reason for dropping out in the survey (Uchida, 2014) some students who gave negative reasons for dropping out seem to have actually dropped out due to mental disorder. These results lead to the following question: What are the risk factors for dropping out in university students with mental illness? There are few reports on the relationship between academic outcomes and mental disorders from a psychiatric point of view. In Japan, there are no such reports, with the exception of our previous report investigating the academic outcomes of students with mental disorders (Ishii et al., 2015).

Therefore, in this study, we compared the academic outcomes of mentally ill students with those of healthy students to confirm whether it is actually more difficult for students with mental disorders to graduate. In addition, the risk factors for dropping out in mentally ill students were examined with a retrospective investigation of medical records.

2. Methods

2.1. Participants

We investigated 370 undergraduate students who received medical treatment by the first author between October 2004 and March 2016 at the psychiatry department of the Tsukuba University Health Center, and whose academic outcomes had been determined by March 2016. Of these, 203 students whose outcomes had been determined by March 2014 were compared with healthy controls. The 203 controls were extracted from the university's grade management system among the general student population and had no history of having received psychiatric treatment at our Health Center. The controls were sex-, age-, and major- matched with 203 subjects and chosen randomly. There is a possibility that there are few students going to an external medical institution.

All 370 students, including those referred to the center by members of their faculties or as a result of their health checkups, ultimately received treatment of their own volition. Faculty always call high-risk students to encourage consultation with attention to privacies. All students who had consultations with the first author were investigated and their data were consecutively collected in this study.

2.2. Survey methods

First, the academic outcomes of the study subjects and controls were extracted from our university's grade management system with the approval of the University Headquarters.

Next, the medical records of the subjects were retrospectively investigated to extract variables that were predicted to influence academic outcome. Extracted variables were as follows (Table 2): 1) student characteristics: sex, academic major, age at initial consultation, age at onset, year of study at initial consultation, years of enrollment at initial consultation, and duration of illness at initial consultation; 2) Psychiatric assessment: diagnosis (International Statistical Classification of Diseases and Related Health Problems: ICD-10 (World Health Organization, 1992)), Clinical Global Impression Severity of illness (CGI-S) scale (Ishii et al., 2015) at initial consultation, Clinical Global Impression Global Improvement (CGI-GI) scale (Guy, 1976) at final consultation, and number of suicide attempts; 3) Assessment variables related to treatment and consultation: duration of medical care provided at our center, number of visits to our center, treatment interruption, number of consultations by family or faculty members with the treatment provider, and involvement of a psychotherapist; and 4)

Academic situation: history of truancy before matriculation, duration of "social withdrawal" after matriculation, number of grade repeating, duration of temporary leave of absence, and academic outcome.

Academic majors were broadly divided into humanities, sciences, medicine, physical education, and arts. The diagnosis of mental disorder was performed based on ICD-10. Treatment interruption was defined as stopping treatment against the advice of psychiatrists or without an introduction to another medical institution. The involvement of a psychotherapist signified that the student received psychological counseling from a psychotherapist at the student counseling division of our center. "Social withdrawal" was determined based on the Japanese Ministry of Health, Labor and Welfare's definition (Ministry of Health, Labor and Welfare, 2017) "a phenomenon in which an individual avoids social participation as a result of various factors and continues to stay at home for the majority of the time." The duration for which social withdrawal was present between matriculation and final consultation was determined.

Personal information was kept anonymous while data was being compiled. Extraction and coding of variables was conducted by the first author. Inconclusive data were processed and resolved based on discussions conducted with two psychiatrist co-authors.

2.3. Statistical analyses

First, the academic outcomes of the smaller group of 203 subjects were compared with those of the matched controls. Enrollment periods and their statistical variabilities were also compared for both groups (Table 1).

Subsequently, all 370 study subjects were divided into graduate and dropout groups, and study variables were statistically compared between groups.

Finally, stepwise logistic regression was performed with academic outcome.

SPSS version 19.0 by IBM was used for the statistical analyses.

2.4. Ethical considerations

Information obtained during the course of the study remained anonymous and analyses were performed as a group. This study was approved by the Ethics Committee Faculty of Medicine University of Tsukuba (Registration No. 769).

3. Results

3.1. Academic outcomes

As shown in Table 1, the dropout rate of the subjects was 13.3% and

Table 1
Comparison of the study group and the control group.

	Control group (n = 203)		Study group (n = 203)		p value
	M	*SD*	*M*	*SD*	
Sex (female)	120 (59.1%)		120 (59.1%)		n.s.[a]
Age at matriculation (years)	18.3	0.8	18.4	1.2	n.s.[b]
Enrollment period (months)	50.8	8.5	56.8	12.0	< 0.01[b] < 0.01(Levene's test)
Dropout rate	5.4		13.3		< 0.01[a]
Relative risk			2.5		

[a] χ^2 test.
[b] Student's *t*-test.