

Short communication

Decline in the severity or the incidence of schizophrenia in Japan: A survey of university students



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ABSTRACT

Clinical manifestations of schizophrenia are believed to be becoming less severe in Japan, but little evidence supports this theory. We investigated the percentages of undergraduate students attending national universities in Japan who required temporary leave and who dropped out because of schizophrenia in the academic years 1986–1987, 1994–1995, and 2013–2014. The percentages of students who required temporary leave and those who dropped out because of schizophrenia significantly decreased over time. The severity of clinical manifestations of schizophrenia may have decreased, enabling more students with schizophrenia to continue their study, or the incidence of schizophrenia might have declined.

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1. Introduction

Many psychiatrists in Japan have the impression that the clinical manifestations of schizophrenia are becoming less severe (Takei, 2013; Ishii 2011). However, there is limited evidence to support this theory. We performed a pilot study to find some evidence to it. On behalf of The Mental Health Committee of the Japanese National University Council of Health Administration Facilities, we have conducted a continual survey titled “The survey of undergraduate students who require temporary leave from school, drop out of school, or repeat the same class” (Uchida, 2010; Fuse-Nagase et al., 2015). In addition to our regular survey, the percentages of undergraduate students, most of whom were between the ages of 18–22 years (the typical age range for

schizophrenia onset), who required temporary leave from school or dropped out of school because of schizophrenia in the academic years 1986–1987 (Nakajima, 1989), 1994–1995 (Nakajima, 1996), and 2013–2014 were investigated.

2. Material and methods

2.1. Data sampling

Health administration facilities at all national universities in Japan were requested to participate in the survey. As a part of the survey, responsible staff members were requested to provide the number of registered undergraduate students and the reasons that individual students required temporary leave for at least one semester or dropped out altogether. From these data, the numbers and percentages of undergraduate students who were diagnosed with schizophrenia and required temporary leave or dropped out because of the disease were calculated. As diagnostic criteria, International Classification of Diseases, Ninth Revision (ICD-9) was used in the academic years 1986–1987 and 1994–1995, and International Classification of Diseases, Tenth Revision (ICD-10) was used in the academic years 2013–2014.

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All the data had been anonymized in an unlinkable fashion at each university before we received them. This study was approved by the Ethics Committees of Ibaraki University (N. 150600).

2.2. Statistical analysis

The chi-square test was used for comparison between groups. For multiple comparisons, the Holm's method was applied to calculate adjusted probability (p) values.

3. Results

3.1. Numbers of universities and registered students

With regard to the survey of those who required temporary leave, 11 universities participated in this study in the academic year 1986–1987 and the number of registered students was 39,574. With respect to the survey of those who dropped out, 11 universities participated in the survey and the number of registered students was 51,028. In the academic year 1994–1995, nine universities participated in the former survey and 10 in the latter. The numbers of registered students were 33,444 and 44,506, respectively, in the two surveys. In the academic year 2013–2014, a total of 61 universities participated in both surveys and the number of registered students was 305,087 in both.

3.2. Students who required temporary leave from school

As shown in Fig. 1, the percentages of students who required temporary leave because of schizophrenia significantly differed among academic years (0.099% in the academic year 1986–1987, 0.048% in 1994–1995, and 0.017% in 2013–2014, $\chi^2 = 83.9$, $df = 2$, $p < 0.001$). The percentage was significantly lower in 1994–1995 than in 1986–1987 ($\chi^2 = 10.8$, $df = 1$, adjusted $p = 0.002$) and significantly lower in 2013–2014 than in 1986–1987 ($\chi^2 = 85.3$, $df = 1$, adjusted $p < 0.001$) and 1994–1995 ($\chi^2 = 4.31$, $df = 1$, adjusted $p = 0.038$).

3.3. Students who dropped out of school

Likewise, as shown in Fig. 2, the percentages of students who dropped out of school because of schizophrenia significantly differed among academic years (0.043% in the academic year 1986–1987, 0.011% in 1994–1995, and 0.003% in 2013–2014, $\chi^2 = 64.9$, $df = 2$, $p < 0.001$). The percentage was significantly lower

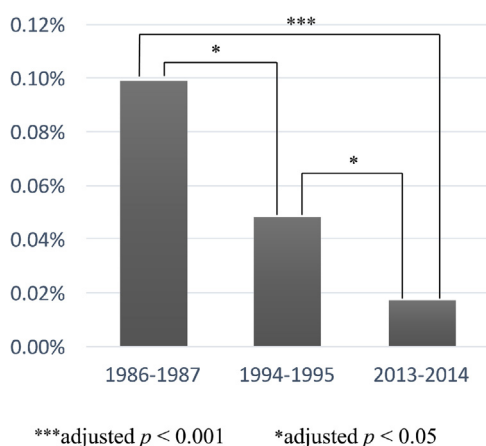


Fig. 1. The percentages of students who required temporary leave because of schizophrenia. They decreased significantly over time.

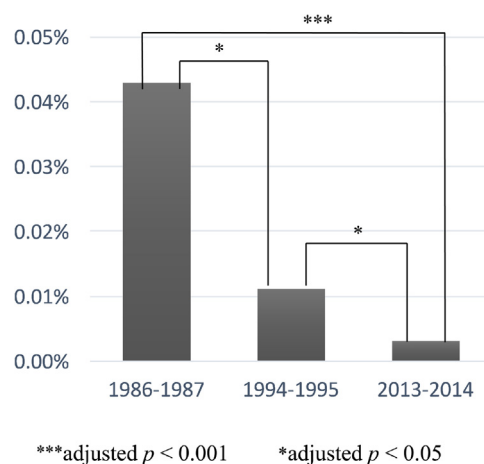


Fig. 2. The percentages of students who dropped out of school because of schizophrenia. They decreased significantly over time.

in 1994–1995 than in 1986–1987 ($\chi^2 = 7.10$, $df = 1$, adjusted $p = 0.015$) and significantly lower in 2013–2014 than in 1986–1987 ($\chi^2 = 66.9$, $df = 1$, adjusted $p < 0.001$) and 1994–1995 ($\chi^2 = 5.73$, $df = 1$, adjusted $p = 0.017$).

4. Discussion

4.1. Interpretations

One interpretation of the results of the present study is that the clinical manifestations of schizophrenia in Japan have become less severe. More recently, fewer students with schizophrenia required temporary leave from school or dropped out of school and more were able to continue with their studies. Some factors that might have contributed to the less severe clinical manifestation of schizophrenia includes early intervention, which is supported by various previous reports (McGorry, 2015; Killackey and Yung, 2007; Chen et al., 2012; Penttilä et al., 2014; Sumiyoshi et al., 2013; Lihong et al., 2012; Nemoto et al., 2012); second is the Japanese term for schizophrenia was changed from *seishinbunretsubyo* (mind-split-disease) to *togoshitchosho* (integration disorder) in 2002 to decrease stigma (Sartorius et al., 2008; Sato, 2008; Koike et al., 2015; Kako et al., 2014; Nishimura, 2008) which is thought to have promoted early consultation. A third possible reason is progress made in the efficacy of medications, especially atypical antipsychotics, which is supported by some reports (Bobes et al., 2007; Voruganti et al., 2002; Velligan et al., 2003; Ritsner et al., 2004; Awad and Voruganti, 2004), but contradicted by others (Strakowski et al., 2005; Davidson et al., 2009). A fourth possible reason is progress in cognitive behavioral therapy and social skill training (Elis et al., 2013; Pfammatter et al., 2006; Kurtz and Mueser, 2008).

Another interpretation is that the incidence of schizophrenia has continued to decline. This possibility is supported by some previous studies conducted in various countries (Suvisaari et al., 1999; Kirkbride et al., 2009; Geddes et al., 1993; Takei et al., 1996; Munk-Jørgensen and Mortensen, 1993; Woogh, 2001) including Japan (Toshitani et al., 2006), but contradicted by others (Preti and Miotto, 2000; Boydell et al., 2003; Bray et al., 2006; Tsuchiya and Munk-Jørgensen, 2002; Allardyce et al., 2000).

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