Characteristics and Risk Factors for Negative Academic Events:
A 27-Year Serial Prevalence Study of 9.7 Million Japanese College Students

Chiyoko Uchida, MD, PhD,[a,*] and Mai Uchida, MD[b,c]

ABSTRACT

Objective: To examine the prevalence of and the factors contributing to leaves of absence and school discontinuation in Japanese college students over a 27-year period. Trends in these academic events over time were assessed, and students at elevated risk and psychosocial difficulties in need of supportive intervention were identified.

Methods: Surveys were collected from the majority of Japanese national universities between 1985 and 2012, yielding data on a total of 9.7 million Japanese university students. Each year, data collected included the number of students enrolled at a university and the number of students who discontinued school and took leaves of absence. The reasons for these academic events were also collected in the surveys.

Results: We found that instances of these academic events have become prevalent over the past decades among Japanese university students. The rates of leaves of absence and school discontinuation for men were consistently higher than that for women throughout the study. Negative reasons such as apathetic state were the dominant reason for these academic events. Males, especially in 4-year programs (liberal arts and sciences), were more likely to have negative events due to negative reasons such as apathetic state. These students were not diagnosed psychiatrically.

Conclusion: The population of students at elevated risk should receive psychosocial interventions and be provided mental health support.

Prim Care Companion CNS Disord 2017;19(4):17m02123
https://doi.org/10.4088/PCC.17m02123

[a]Department of Human Development and Culture, and Fukushima Child Mental Health Care Center, Fukushima University, Fukushima, Japan
[b]Department of Psychiatry, Massachusetts General Hospital, Boston, Massachusetts
[c]Department of Psychiatry, Harvard Medical School, Boston, Massachusetts
**Corresponding author:* Chiyoko Uchida, MD, PhD, Department of Human Development and Culture, and Fukushima Child Mental Health Care Center, Fukushima University, Kanayagawa 1, Fukushima 960-1296, Japan (uchidach@gmail.com).

Role absence and role disability are important indicators of mental illness that have been studied extensively among the global workforce. A Swedish study[1] of 4.9 million individuals found that absence from work due to mental illness is associated with increased mortality from suicide, cancer, and circulatory disease.

While research on role absence and role disability in students is lacking in comparison to research on adults in the workforce, studies of student populations have similarly documented an association between poor grades,[2] poor class attendance,[3,4] and mental health issues. In addition to class attendance and grades, measures of role absence and role disability include leaves of absence, repeating school years, and school dropouts, which our previous work[5–7] documented as common occurrences among Japanese university students. Our previous work[8,9] also documented that students experiencing these negative academic events are at significantly increased risk for suicide. Studies[10] have also documented that school attendance improves among adolescents with school refusal behavior once they receive mental health care, reiterating the importance of mental health in role performance.

The relative lack of research on the relationship between absenteeism or underperformance and mental health among children and young adults is ironic given that most psychiatric diagnoses become diagnosable before age 24 years.[11] This age group is also ideal for early intervention once mental health issues begin to emerge, particularly on college campuses wherein there is a unique opportunity to integrate mental health resources into social and academic activities.

A further understanding of negative academic events and factors that led students to those conditions would be informative for school officials and mental health care providers. While negative academic events occur frequently in colleges worldwide and often increase risk for mental health–related issues such as suicide, there are few data on this topic. To address this void, we gathered data from Japanese national universities between 1985 and 2012. In total, data from 9.7 million students were analyzed. From these data, we examined the prevalence of and factors contributing to leaves of absence and school discontinuation. We aimed to assess the current status of these events in the Japanese college student population and identify students at elevated risk for psychosocial difficulties in need of supportive intervention.

METHODS

Our group conducted annual surveys on the prevalence and backgrounds of academic events such as leaves of absence and school discontinuation from the majority of Japanese national university students from 1985 to 2012. In the most recent survey conducted in the 2011–2012 academic year, 68 of the 82 national universities (83%) participated. Surveys were completed by health center staff at participating universities. Survey data pertained to the previous academic year and did not contain student personal identification information. For each year, the numbers of total enrolled students and students that discontinued school and took

Clinical Points

- Universities should monitor student absences and lack of credits and encourage apathetic students who may have psychiatric illness to receive psychiatric services.
- Mental health support targeting sex differences or characteristics of academic majors are needed.

leaves of absence were collected. In addition, reasons that led to the academic events were collected.

Students were separated into 6 groups according to sex and academic majors, including 4-year courses (liberal arts and sciences) and 6-year courses (medicine, dentistry, veterinary medicine, and pharmacy). These 6-year courses do not require a previous undergraduate degree.

Reasons for academic events were classified into 6 groups: (1) physical disorders diagnosed by a physician; (2) mental illness diagnosed by a psychiatrist; (3) negative reasons (negative to academic affairs) including student apathy, academic failure and inadequate credits, legal troubles, transferring to less academically challenging programs such as occupational schools, overinvolvement in nonacademic activities such as amateur sports clubs, and political or religious activities or part-time jobs; (4) positive reasons including studying abroad, transferring to a more academically challenging major, and studying for national licensing examinations such as for law or accounting; (5) environmental reasons including economic hardship that involved difficulty in paying tuition and living expenses or family illness; and (6) unknown reasons.

Data from 1985 to 2012 were analyzed for (1) sex difference of leaves of absence and school discontinuation, (2) comparison among 6 groups established based on sex and major, and (3) rates of reasons leading to these academic events. Data from 2000 to 2012 in the category of negative and positive reasons for these academic events were analyzed for comparisons between sex and among the 6 groups based on sex and major. The data were statistically analyzed by a χ^2 test for group comparisons, and residual analysis was done.

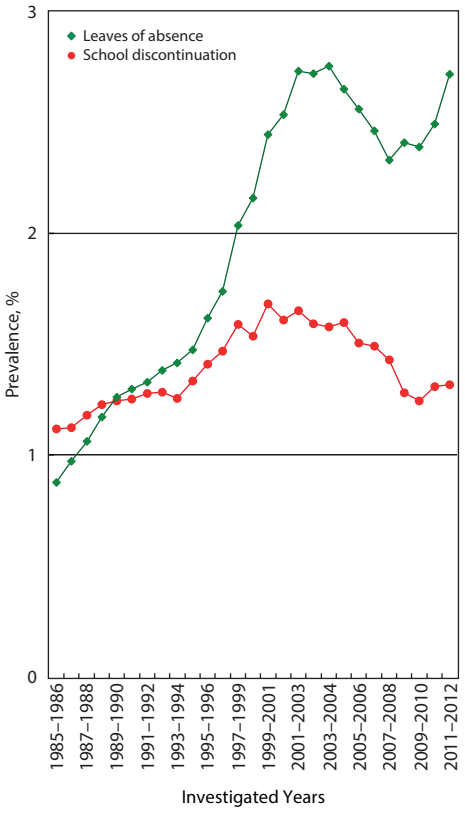
RESULTS

Our data from 1985 to 2012 yielded information on a total of 9,705,991 students (male: 6,625,838; female: 3,080,153) including 198,560 students who took leaves of absence (2.05%; male: 141,152; female: 574,089), 583,254 students who repeated academic years (6.01%; male: 503,963; female: 79,291), and 137,099 students who discontinued school (1.41%; male: 112,410; female: 24,689). The most recent survey of the 2011–2012 academic year yielded data on 393,215 students consisting of 255,244 males (65%) and 137,961 females (35%).

Mean Rates of Academic Events

Figure 1 shows longitudinal mean rates of leaves of absence and school discontinuation. Both mean rates increased, with the rate of leaves of absence surpassing that of school discontinuation in 1989. In the 2011–2012 academic year, the rate of leaves of absence was 2.72% and school discontinuation was 1.32%.

Figure 1. Longitudinal Rates of Leaves of Absence and School Discontinuation[a]



[a]Both mean rates increased until around 2000, with the rate of leaves of absence surpassing the rate of school discontinuation beginning in 1989. The rates decreased for several years and have increased in the last 2 years.

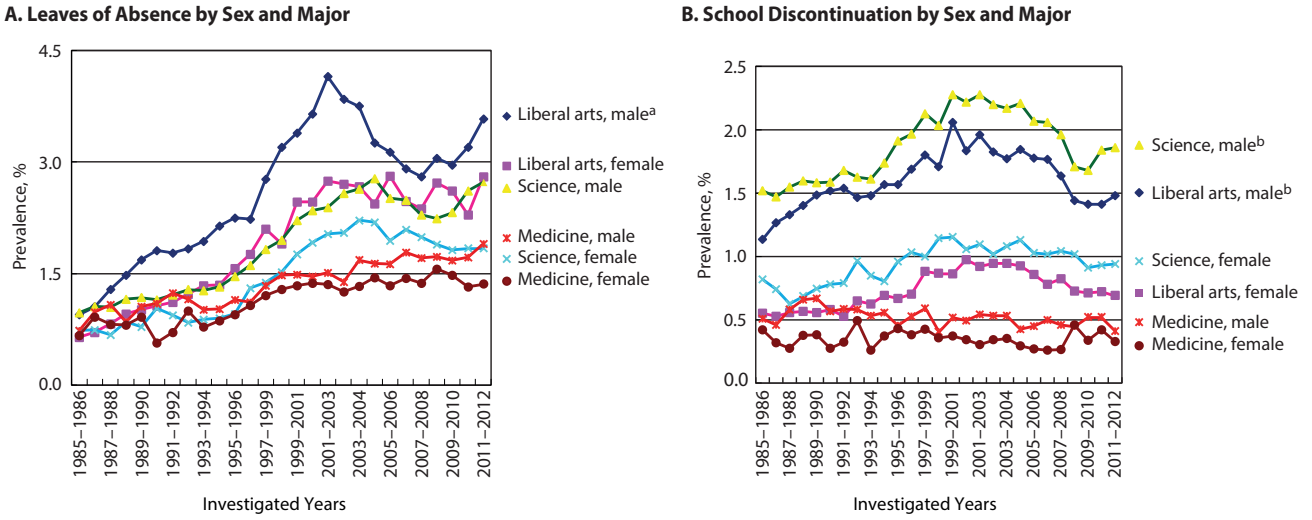
Sex Differences of Academic Events

Leaves of absence. We examined rates of leaves of absence longitudinally with regard to sex. The rate of leaves of absence for men was consistently higher than that for women throughout the study. In 2011–2012, the men's rate (2.92%) was higher than the women's rate (2.33%). There was a significant difference between men and women ($P < .01$). The total data of leaves of absence from 1985 to 2012 also showed a significant difference between men (1.99%; 101,541/5,103,362) and women (1.72%; 38,742/2,247,134) ($P < .01$). The overall rate of leaves of absence steadily increased until 2001, experienced a slight decrease in the years through 2004 to 2008, and increased again from 2008 to 2011, reaching the rate of 2001 (when it was the highest).

School discontinuation. We examined rates of school discontinuation longitudinally with regard to sex. Men had higher rates of leaving school than women throughout the study period.

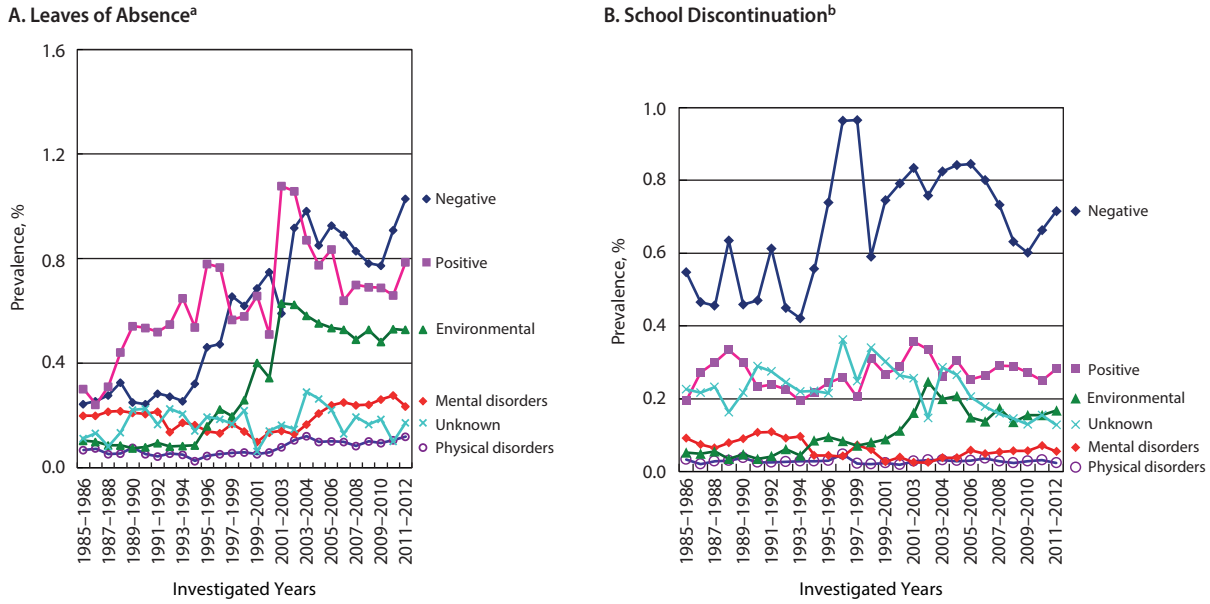
In the 2011–2012 academic year, the rate of men discontinuing school (1.62%) was higher than the rate of

Figure 2. Longitudinal Rates of Leaves of Absence and School Discontinuation by Sex and Major



[a]Male liberal arts majors had the highest rate.
[b]Male science majors had the highest rate, followed by male liberal arts majors.

Figure 3. Longitudinal Features of the Reasons for Leaves of Absence and School Discontinuation



[a]While the positive reasons are high, the rate of negative reasons such as student apathy still represents a high proportion of the total.
[b]The rate of negative reasons such as student apathy has been the highest reason for school discontinuation since the study started.

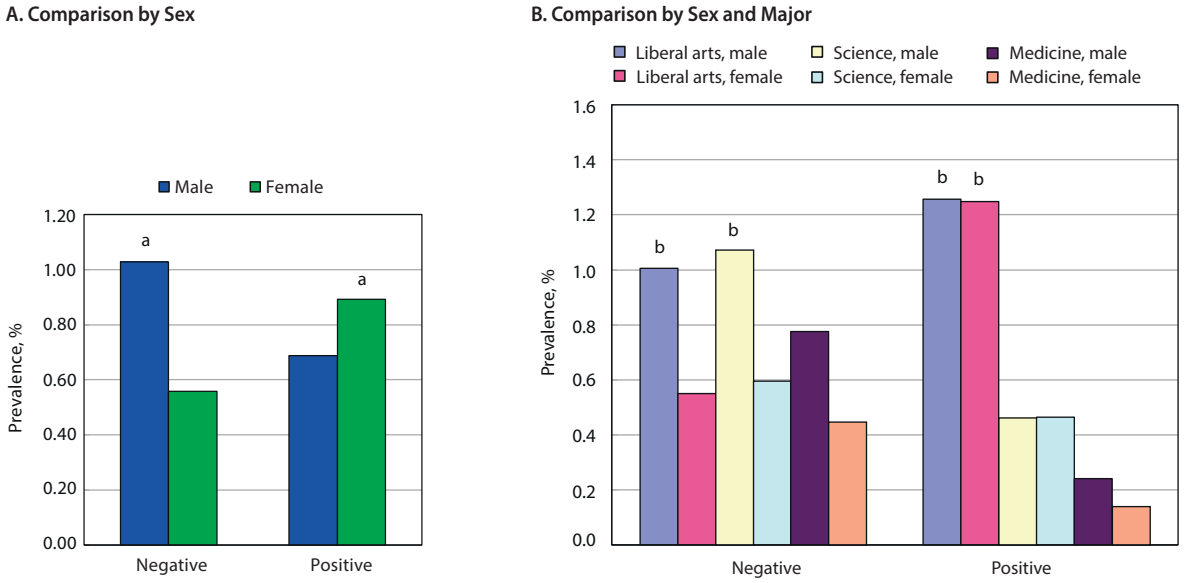
women discontinuing school (0.75%). There was a significant difference between men and women ($P<.01$). The total of these data from 1985 to 2012 also showed a significant difference between men (1.71%; 87,310/5,103,362) and women (0.80%; 18,036/2,247,134) ($P<.01$). For both men and women, the rate of school discontinuation increased until 2000 and has been decreasing since then.

Comparisons According to Sex and Academic Majors

Leaves of absence. Figure 2A shows rates of leaves of absence longitudinally with regard to sex and academic major. There was a significant difference among the groups (χ^2 test, $P<.01$), and residual analyses showed that male liberal arts majors were significantly more likely than students in any other group to have leaves of absence ($P<.01$).

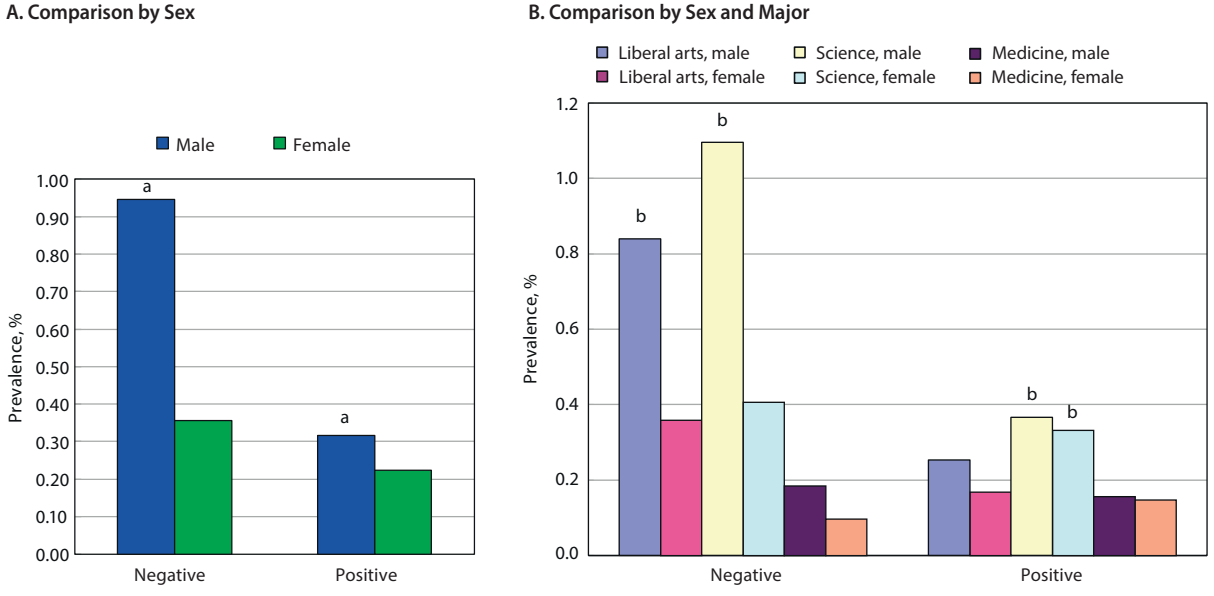
School discontinuation. Figure 2B shows rates of school discontinuation longitudinally with regard to sex and major. There was a significant difference among the groups (χ^2 test, $P<.0$), and residual analyses showed that male science majors and male liberal arts majors were significantly more likely to discontinue school ($P<.01$).

Figure 4. Positive and Negative Reasons for Leaves of Absence in 2000–2012



[a]For negative reasons, men were dominant ($P < .01$), and for positive reasons, women were dominant ($P < .01$).
[b]For positive reasons, the rates of female liberal arts and male liberal arts majors were high. A χ^2 test and the residual analyses confirmed that those groups were significantly more likely to have leaves of absence due to positive reasons ($P < .01$). For negative reasons, male science majors had the highest rate, followed by males in liberal arts majors. A χ^2 test showed a significant difference among the 6 groups ($P < .01$), and residual analyses showed that male science majors and male liberal arts majors were significantly more likely to have leaves of absence due to negative reasons ($P < .01$).

Figure 5. Positive and Negative Reasons for School Discontinuation in 2001–2012



[a]Men had higher rates of negative and positive reasons for school discontinuation than women. Men were significantly more likely to have school discontinuation due to negative and positive reasons ($P < .01$).
[b]For negative reasons, men in science had the highest rates, followed by male liberal arts majors. A χ^2 test showed a significant difference among the 6 groups ($P < .01$), and residual analyses showed that male science majors and male liberal arts majors were significantly more likely to have discontinued students due to negative reasons ($P < .01$). For positive reasons, the rates of male and female science majors were higher than the other groups, although the number of positive reasons for leaving school was small. A χ^2 test showed a significant difference among the 6 groups ($P < .01$), and residual analyses showed that both male and female science majors were significantly more likely to have discontinued students because of positive reasons ($P < .01$).

Reasons for Academic Events

We collected data regarding the reasons that led to academic events for 84,727 students who took leaves of absence (42.89% of the total students who had leaves of absence) and 50,259 students who left their schools (36.68% of the total students who left school).

Leaves of absence. Figure 3A shows longitudinal rates of the reasons for their leaves of absence. From 1989 to 1996, positive reasons for leaves of absence were reported twice as often as negative reasons. From 1997 to 2003, the rates of reports of positive and negative reasons were comparable. Negative reasons like student apathy have been the leading cause of leaves of absence since 2003.

School discontinuation. Figure 3B shows longitudinal rates of the reasons for discontinuing school. The rate of negative reasons for discontinuing school was higher than other reasons throughout the study duration.

Positive and Negative Reasons for Leaves of Absence

By sex. In Figure 4A, student sex was compared for each category of positive and negative reasons for leaves of absence. Men reported significantly more negative reasons than women ($P < .01$), while women reported significantly more positive reasons than men ($P < .01$).

By sex and major. In Figure 4B, the 6 groups (by sex and major) were compared for positive and negative reasons for leaves of absence. For the positive reasons, the rates of female liberal arts and male liberal arts majors were high. With respect to negative reasons, the rate of male science majors was the highest, followed by male liberal arts majors.

Positive and Negative Reasons for School Discontinuation

By sex. In Figure 5A, student sex was compared for positive and negative reasons for leaving school. Men were significantly more likely to have school discontinuation due to negative and positive reasons ($P < .01$).

By sex and major. In Figure 5B, the 6 groups were compared according to sex and major for each category of negative and positive reasons for discontinuing school. With regard to negative reasons, the rates of male science majors were the highest followed by that of the male liberal arts majors.

DISCUSSION

Negative academic events continuously increased until approximately the year 2000, then plateaued for a few years, and then showed a steady decrease after that, although leaves of absence seem to be increasing recently. Men are more likely to experience negative academic events than women.

Negative reasons have been the most common cause of discontinuing school since 1985, whereas for leaves of absence, both negative and positive reasons have been seen, and since 2003, negative reasons have been the leading cause. Male science majors and male liberal arts majors were significantly more likely to have academic events due to negative reasons. Students in 6-year programs had very low rates relative to those in 4-year programs.

In regard to the overall increased rates of negative academic events, we hypothesize that the increased accessibility of colleges may have been a contributing factor. The rates of receiving college education have been increasing since World War II,[12] while the population of youth aged 18 years has been decreasing in Japan. Therefore, it is estimated that the academic quality of colleges has declined over the past few decades, which in turn may have contributed to the rise in negative academic events.

Recent years since the early 2000s that showed flat or a decrease in rates of negative events and no parallel curve to the increasing rates of youth receiving a college education are most likely the result of efforts by individual colleges in preparation of becoming Independent Administrative Agencies. Prior to 2004, all national colleges were categorized as public entities and were governed by the country. In 2004, they were granted the status of Independent Administrative Agencies, making them more independently responsible for their finances, administration, and programs. Under these changes, it was also posed that colleges with high rates of negative academic events would receive reduced national funding. Therefore, many colleges put increased efforts into decreasing their rates of negative academic events.

We documented a significantly higher rate of negative reasons compared to other reasons that led to students' leaves of absence and school discontinuation. The overwhelming majority of students that were classified into the group of negative reasons as causes that led them to negative academic events presented with academic failure and not meeting credit requirements. Many of them were apathetic and did not attend classes due to being uninterested and withdrawn. While the documented rate of students diagnosed with a psychiatric illness was low, there may have been students who suffered from mental health difficulties that were never diagnosed (eg, depression, anxiety disorders, and neurodevelopmental disorders), and these students therefore were included in the negative reasons group. As such, this state of affairs suggests that apathetic students with academic failure are a concern in Japanese colleges. It is necessary to monitor student absences and lack of credits and look for ways to encourage apathetic students to receive psychiatric services, which should be related to suicide prevention among college students.

Japanese college students can only apply to 1 or 2 national universities per year (and must wait to take the following year's examination if they do not pass the entrance examination on the first attempt). Consequently, many students end up attending nonchallenging or "safety" schools they did not want to attend or are fatigued from the competitive admission process by the time that they enter college. Additionally, due to institutional rigidity, it is not easy for students to change majors or schools without losing credit for the work they have already completed, and students often have to repeat a whole academic year due to one missed credit. We hypothesize that these factors contribute to the

Japanese students' state of apathy and suggest that colleges consider introducing a more flexible and practical system for both the admission process and management of credits.

We identified male students as being more prone to negative academic events stemming from negative reasons. We hypothesize that this finding is due to Japanese female students being more resilient and more able to seek help when necessary. In a male-dominant society such as Japan, female students are often not encouraged to achieve higher education, making the male-to-female student ratio in Japanese colleges approximately 10:7.[13] As such, the female students who do enter college may represent a resilient group. Additionally, a large body of research has confirmed that female students seek and receive psychiatric help more frequently than males.[14,15] Therefore, the high rate of student apathy and its consequences seen in males may indicate that male students are failing to reach out to support services when needed.[16] This result suggests a need for various mental health support services targeting sex difference.

We found a significantly low rate of leaves of absence and school discontinuation in 6-year programs such as medicine, dentistry, and veterinary medicine. We hypothesize that this is in part because students in the 6-year program majors have a clearer curriculum, clearer goals such as passing the national licensing exams necessary for their profession, and an expectation for their professional careers.

On the other hand, our results show that the overall rate of students reporting positive reasons for leaves of absence has increased. While there remains a rigidity of structures in Japanese colleges, recent efforts have been made to allow students to more easily switch majors or transfer credits to other schools. Most recently, one of the leading universities in Japan employed a system that allows a "gap year" after students are admitted. These efforts appear to have allowed students to take leaves of absence for positive reasons.

Our work is not without limitations. Although the method of collecting surveys through the university health centers provided access to a large sample, it prevented us from conducting individual assessments of students. The sample consisted of students attending Japanese universities; hence, our study provides valuable data on a unique population previously understudied, but generalization of these results to the international population may be limited.

Despite these limitations, this study confirmed that negative academic events such as leaves of absence and school discontinuation have been prevalent over the past decades in Japanese university students. Apathetic state was the dominant reason for these academic events, and males, especially those in 4-year programs, were found to be at elevated risk for requiring psychosocial interventions.

Submitted: February 28, 2017; accepted May 3, 2017.

Published online: August 10, 2017.

Potential conflicts of interest: None.

Funding/support: This study was supported by grants from the Japanese Ministry of Education, Culture, Sports and Technology (23500794).

Role of the sponsor: The grants from the Japanese Ministry of Education, Culture, Sports and Technology partially supported the execution of the surveys, as well as storage, management, and analysis of the data.

Acknowledgments: The authors thank the Japanese Association for College Mental Health and the Mental Health Study Group of the Japanese National University Council of Health Administration for their collaboration, as well as the University Health Centers that participated in this study. The authors thank Junko Nakajima, MD, PhD (Ishizaki Hospital, Ibarakimachi, Japan) for initiating this study; Shuntaro Watanabe, PhD (Osaka University of Comprehensive Children Education, Osaka, Japan), Hiroshi Sato, PhD (Kansai University, Osaka, Japan), and Masafumi Nomura, MD, PhD (Hospital Bando, Bando, Japan) for statistical advice; and Hilary Woodworth, BA (Massachusetts General Hospital, Boston, Massachusetts) for assistance with editing this manuscript.

REFERENCES

1. Mittendorfer-Rutz E, Kjeldgård L, Runeson B, et al. Sickness absence due to specific mental diagnoses and all-cause and cause-specific mortality: a cohort study of 4.9 million inhabitants of Sweden. *PLoS One*. 2012;7(9):e45788.
2. Hysenbegasi A, Hass SL, Rowland CR. The impact of depression on the academic productivity of university students. *J Ment Health Policy Econ*. 2005;8(3):145–151.
3. Cleary-Holdforth J. Student non-attendance in higher education: a phenomenon of student apathy or poorer pedagogy? Dublin Institute of Technology. Level3 website. http://level3.dit.ie/html/issue5/cleary-holdforth/cleary_holdforth.pdf. Accessed June 27, 2017.
4. Kearney CA, Bensaheb A. School absenteeism and school refusal behavior: a review and suggestions for school-based health professionals. *J Sch Health*. 2006;76(1):3–7.
5. Uchida C. Apathetic and withdrawing students in Japanese universities—with regard to Hikikomori and student apathy. *J Med Dent Sci*. 2010;57(1):95–108.
6. Uchida C. Survey of Taking-off and Dropping-out Students—28th Report. http://hotai1.htc.nagoya-u.ac.jp/~kondo/hakusho/hakusho2005.pdf. >
7. Uchida C. Survey of taking-off, dropping- out and repeating academic-years students, 34th report. *The 35th Meeting Report of the Japanese Association of College Mental Health*.2013:35–51. http://ci.nii.ac.jp/naid/40020142077. >
8. Uchida C. Suicide among Japanese university students: from the results of a 21-year survey, a clue to prevent suicide among university students [in Japanese]. *Psychiatria et Neurologia Japonica*. 2010;112(6):543–560.
9. Uchida C, Uchida M. Characteristics and risk factors for suicide and deaths among college students: a 23-year longitudinal study of 8.2 million Japanese college students. *J Clin Psychiatry*. 2017;78(4):e404–e412.
10. Heyne D, Sauter FM, Van Widenfelt BM, et al. School refusal and anxiety in adolescence: non-randomized trial of a developmentally sensitive cognitive behavioral therapy. *J Anxiety Disord*. 2011;25(7):870–878.
11. Kessler RC, Berglund P, Demler O, et al. Lifetime prevalence and age-of-onset distributions of *DSM-IV* disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry*. 2005;62(6):593–602.
12. MEXT. *Overview of the Ministry of Education, Culture, Sports, Science and Technology Statistic Report*. Tokyo, Japan; Japanese Ministry of Education, Culture, Sports, Science and Technology: 2015.
13. MEXT. *Statistics: Students*. Tokyo, Japan; Japanese Ministry of Education, Culture, Sports, Science and Technology: 2013.
14. Eisenberg D, Hunt J, Speer N, et al. Mental health service utilization among college students in the United States. *J Nerv Ment Dis*. 2011;199(5):301–308.
15. Yorgason JB, Linville D, Zitzman B. Mental health among college students: do those who need services know about and use them? *J Am Coll Health*. 2008;57(2):173–181.
16. Cook LJ. Striving to help college students with mental health issues. *J Psychosoc Nurs Ment Health Serv*. 2007;45(4):40–44.