Are You In or Out? Canadian Students Who Register for Disability-Related Services in Junior/Community Colleges versus Those Who Do Not

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Abstract

Junior/community colleges tend to enroll more students with disabilities than four-year colleges. Therefore, knowing about the nature of students' disabilities and about which students register for campus disability-related services is important. Here, we report on a random sample of 1387 Canadian junior/community college students, 17% of whom self-reported a disability. The most common disabilities reported, in rank order, were learning disability with or without attention deficit hyperactivity disorder (LD/ADHD), mental illness, chronic health problems, hearing impairments, and visual impairments. Only 44% of students with self-reported disabilities indicated registering for campus disability-related services. Prominent among those who had not done so were students with mental illness and students with chronic medical conditions. When we split students into those with only LD versus those with only ADHD, we found that students with LD were quite likely to register for services, whereas those with ADHD were not. In general, students with disabilities were under-represented in the sciences, although we found no relationship between students' disabilities and their programs of study. The same was true of students who had and those who had not registered for campus disability-related services. We speculate on why students with specific disabilities do not register for disability-related services.

There is extensive literature on the impact of registration for campus disability-related services, as well as on barriers to seeking such services. Although virtually all students who had registered for campus disability-related services cite the access office for students with disabilities as a key facilitator of their studies (e.g., Dowrick, Anderson, Heyer, & Acosta, 2005;Fichten,Jorgensen, Havel, & Barile, 2006; Newman et al., 2011),findings on the impact of registration on grades and graduation are less clear (e.g., Jorgensen, Fichten, & Havel, 2012; McGregor et al., 2016; Murray, Lombardi, & Kosty, 2014). For example, in a previous study, we found that registration for services was related to intent to graduate, but not to grades (Fichten, Nguyen, Budd et al., 2014).The issue is further complicated by the fact that comparison of the academic performance of registered and non-registered students is difficult, as there are likely to be a variety of important differences between students who do - and those who do not – register for disability-related services (Jorgensen et al., 2012). For example, research shows that among recent (past year) junior/community college graduates with disabilities, those who had not registered for disability-related services were more likely to have full-time employment and that they had different disabilities/impairments (Fichten et al., 2012).

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Moreover, even within a specific disability group, such as learning disabilities (LD), findings show differences between those who do and those who do not register for campus disability-related services shortly after enrolling in college (Lightner, Kipps-Vaughan, Schulte, & Trice, 2012).

Nevertheless, research shows benefits for registering for disability-related services. For example, Jorgensen et al.'s (2012) research showed that students with disabilities who had registered for these services were generally more satisfied on the Noel-Levitz Student Satisfaction Survey (Schreiner & Juillerat, 1994) than students with disabilities who did not register, although there was only a weak relationship between satisfaction and standardized grades for both registered and non-registered groups.

The literature on barriers to registration is also extensive. For example, a recent article (Lyman et al., 2016) reported on obstacles to registration among students who had registered for services. Their study lists the following barriers: desire for self-sufficiency, desire to avoid negative social reactions, insufficient knowledge, the quality and usefulness of accommodations offered by the office for students with disabilities, negative experiences with professors, and fear of future ramifications(pp. 127-130). Lightneret al. (2012), who studied reasons why students with LD delayed registering with their campus office for students with disabilities. They found the following reasons identified in rank order: lack of time, lack of knowledge, identity issues, studies going well, the cost and hassle of testing, the perception that one is cheating, shame, and scheduling conflicts. They also reported that students who had received more college transition services in high school were more likely to register shortly after entering college; this suggests the existence of pre-college differences between students with LD who did versus those who did not register shortly after enrolling. Similarly, Yssel, Pak, and Beilke (2016) reported thata major reason for not using accommodations is the need for independence, self-determination, and a desire to be like everyone else.

In addition, there are unique barriers for students with different disabilities. For example, there are numerous obstacles for students with mental health related disabilities, such as lack of understanding of mental illness by their peers and professors, lack of appropriate services on campus, and the stigmatization that may result from disclosing their illness (Jones, Brown, Keys, & Salzer, 2015; Lyman et al., 2016). Thus, in a recent study it was not surprising to find that only about 10% of students with mental health issues were registered for campus disability-related services (Dong & Lucas, 2016).

A while back, when evaluating grants for a disability-related funding competition, Dr. Hy Day (personal communication, circa 1990) mused, when talking about applications related to health psychology, that, "They just don't get it. Disability is not the same as illness. People with disabilities are ill when they have the flu. When they are blind since birth, they are not ill – they are disabled."Yet, in 2016, students with chronic health conditions qualify as having a disability (Ardell, Beug, & Hrudka, 2016). Although there is a difference between an illness and a disability, a chronic illness can result in the same need for services/accommodations as a disability. Because of the nature of their condition, medication side effects, fluctuating energy levels, hospitalizations, etc., students often need accommodations such as extended time, a specific scheduling of their classes, and note takers when they are unable to get to class. However students may not perceive their chronic illness in this manner, and the relevance of campus disability services may not even be on their radar.

Present Study

The goal of this investigation was to examine the disabilities of a large random sample of students who had attended one of two junior/community colleges and had completed a minimum of one semester of studies. The objective was to examine the disabilities/impairments of students who had and who had not registered for campus disability-related services and to explore similarities and differences among groups.Questions investigated are listed below.

1. What is the proportion of students with self-reported disabilities in a random sample of two Canadian junior/community colleges and what are the most common disabilities reported by these students?
2. Is there a difference in gender, parental education, age, or number of semesters completed between students with and without disabilities?

3. What are the characteristics of students with disabilities who do versus those who do not register for disability-related services?
4. Is there a significant difference in the program of study between students with and without disabilities?
5. Is there a difference in program of study between students with disabilities who are versus those who are not registered for disability-related services?
6. Do students with different disabilities enroll in different programs of study?

Materials and Methods

Participants

A random sample of 1387Canadian junior/community college students (802 females, 577 males, 8 other/prefer not to say) from two urban junior/community colleges participated. All had completed a minimum of one semester of studies (mean = 3 semesters, median = 2 semesters).Mean age was 20(SD = 4, range 18-45).There was no significant age difference between males and females.

Measures

Demographic questions. These included gender, age, years of parental education, number of semesters completed, and program of study.

Disability self-definition. Participants were asked to,"Indicate which of the following apply to you (you can select more than one):"

- Visual impairment not adequately corrected by glasses or contact lenses,
- Deaf or hard of hearing,
- Learning disability and / or attention deficit hyperactivity disorder (ADHD),
- Mobility impairment,
- Chronic medical / health problem,
- Mental illness,
- Autism spectrum disorder,
- Other disability/impairment.

Registration for campus disability-related services. Participants were asked,**"**Are you registered with your college to receive accommodations related to a disability?"

Procedure

Participants were part of a larger investigation (Fichten, Amselet al., 2016).In the fall 2014 academic term students completed paper-and-pencil measures during class in a compulsory course that was not available to students in their first semester. Students were offered alternate formats, but none was requested. The protocol was approved by the Dawson College Research Ethics Board. Data on 854 of these students were reported in a previous paper (Fichten, Heiman et al., 2016).In a smaller subset of 311 students we further divided students' disabilities into smaller groupings. In particular, as suggested by Budd, Fichten, Jorgensen, Havel, and Flanagan (2016), we separated students with LD and ADHD into two groups.

Results

Participants

Two hundred and forty-one (17%) of the participants self-reported a disability:215(89%)indicated a single disability and 26 (11%) two or more disabilities. Table 1 and the Chi-square test show that there was no significant difference between the proportion of male and female students with and without disabilities, $X^2(1,1379)=2.52$, p = .113. Fifty-three percent of students with disabilities and 59% of students without disabilities were female. There was no significant different in age between students with and without disabilities, $t(1356)$ = .78, p = .435. Mean parental education of students with and without disability was 14 years (range 6-25 years).
There was no significant difference between the two groups, $t(1300)$ = .43, p = .665.

Table 1					
Gender and Disability Status					
Disability	With a disability		No disability		Total
	n	%	n	%	
Female	128	54%	674	59%	802
Male	111	46%	466	41%	577
Total	239		1140		1379
Note. 8 students did not report their gender (2 with a disability and 6 without).					

We also examined the program of study of students with and without disabilities. Table 2 and the Chi-square test, $X^2(4,1383) = 16.72$, $p = .002$, show that relative to students without disabilities, students with disabilities were under-represented in the sciences.

Table 2									
Program of Study: Students with and Without Disabilities									
Group	Social Science		Science		Arts		Career / Technical		Total
	n	%	n	%	n	%	n	%	
Students with disabilities	99	42%	16	7%	44	18%	79	33%	238
Students without disabilities	477	42%	155	14%	125	11%	366	33%	1123
Total	576		171		169		445		1361

Of the 239 participants who replied that they had a disability and who provided information regarding registration for disability-related services, one hundred and six (44%) indicated that they had registered and 56% had not. Table 3 shows that the most common disability reported by students was LD/ADHD, followed by mental illness, chronic health problems, and hearing impairments. Nevertheless, as Table 3 also shows, with the exception of students with LD/ADHD, over 80% of students with these disabilities had not registered for disability-related services.

Table 3						
Registration for Campus Disability-Related Services by Disability Type						
Disability[1]	Registered		Not Registered			Total Disabilities Reported
	n	%	n	%		
LD / ADHD	89	61%	56	39%		145
Mental illness	11	18%	49	82%		60
Chronic health problems	3	9%	32	91%		35
Deaf / Hearing Impairment	2	18%	9	82%		11
Visual impairment[2]	9	100%	0	0%		9
Other/unclassifiable	0	0%	5	100%		5
Mobility impairment	2	100%	0	0%		2
Autism spectrum disorder	1	100%	0	0%		1
Total	117		151			268
[1]Students were instructed to indicate as many disabilities/impairments as applied to them. The 239 students with disabilities who provided registration data indicated 268 different disabilities/impairments. [2]In spite of the wording of the visual impairment item (i.e., Visual impairment not adequately corrected by glasses or contact lenses), over 120 endorsed this item. This was highly unlikely, and suggested that students did not interpret the item as intended. Therefore, all participants who indicated low vision and who did not indicate that they had registered for disability-related services were deleted from the sample.						

We also examined the programs of study of students who had and who had not registered for disability-related services. The Chi-square test shows no significant differences, $X^2(4,230) = 4.13$, $p = .389$.

In addition, we examined program of study for students with different disabilities. As Table 4 shows, there is no observable pattern of differences.

Table 4									
Program of Study by Disability									
	Social Science		Science		Arts		Career / Technical Program		Total
	n	%	n	%	n	%	n	%	n
Visual Impairment	3	33%	0	0%	2	22%	4	44%	9
Deaf or Hard of Hearing	4	36%	1	9%	2	18%	4	36%	11
LD/ADHD	57	40%	7	5%	26	18%	53	37%	143
Mobility Impairment	1	50%	0	0%	1	50%	0	0%	2
Chronic Health Problem	16	44%	1	3%	10	28%	9	25%	36
Mental Illness	30	50%	6	10%	12	20%	12	20%	60
Autism Spectrum Disorder	0	0%	1	100%	0	0%	0	0%	1

We have written elsewhere (Budd et al., 2016) that in spite of the high comorbidity, it is inadvisable to group students with LD and ADHD together. Therefore, in a subset of the sample ($n = 311$) we examined registration of students with LD and ADHD separately. Among the 311 students, 61 self-reported a disability. Among these, 15 self-reported only LD and 10 self-reported only ADHD. Table 5 and the Chi-square test, $X^2(1, 25)=2.78$, $p = .096$ suggests that students with LD are more likely to register for disability-related services, while students with ADHD are less likely to do so.

Discussion

Question1. What is the proportion of students with self-reported disabilities in a random sample of two Canadian junior/community colleges and what are the most common disabilities reported by these students?

In this large random sample of junior/community college students who had completed at least one academic semester of studies, 17% self-reported a disability. This reflects junior/community college samples; four-year college samples usually enroll fewer students with disabilities (Newman et al., 2011).The top three disabilities/impairments reported by students were, in rank order: learning disability with or without attention deficit hyperactivity disorder (LD/ADHD), mental illness, and chronic health problems. These results are similar to large scale studies of Canadian (American College Health Association [ACHA], 2013) and American junior/community college and 4-year college students (American College Health Association [ACHA], 2015),as well as to findings based on university students recently reported by Ardell et al. (2016). The findings in this study are also similar to those reported in a sample of recent graduates of three different junior/community colleges (Fichten, et al., 2012).

Question 2. Is there a differences in gender, parental education, age, or number of semesters completed between students with and without disabilities?

Gender did not differ between students with and without disabilities. As is typical in North American postsecondary institutions, more females than males were enrolled (e.g., Statistics Canada, 2015a, 2015b). Similarly, there was no significant difference between the two groups on parental education, with an average of14 years. Although there was no significant age difference between the two groups, students with disabilities had been enrolled ½ semester longer than students without disabilities. As the literature shows, it is common for students with disabilities to take longer to complete their studies (Jorgensen et al., 2005).

Question 3. What are the characteristics of students with disabilities who do versus those who do not register for disability-related services?

Only 44% of students with disabilities had registered for disability-related services from their college; 56% had not done so. Although the discrepancy was not as large, Ardell et al. (2016) also found that university students who had not registered for disability-related services outnumbered those who had.

Among students with three of the four most common disabilities in our sample (LD/ADHD, mental illness, chronic health problems, and hearing impairment), over 80% had not registered for disability related services. Due to difficulties with the item, we are unable to conclude anything about student with visual impairments.

Mental illness. In our sample over 80% of students with a mental illness had not registered. This is consistent with findings from our study of recent junior/community college graduates, where only 2 of 33 graduates with mental illness had registered (Fichten et al., 2012) and those of Dong and Lucas (2013), who found that only about 10% of students with mental health related disabilities were registered for campus disability-related services.Is this due to apprehension regarding social stigma, irrelevant services, lack of information about disability related services, or the perception that a mental illness and its consequences do not constitute a disability requiring access services? The reasons why students with mental health related disabilities do not seek out campus disability related services needs urgent research on larger samples especially because enrollment of students with mental health related disabilities in postsecondary education has been increasing (Koch, Mamiseishvili, & Higgins, 2014).

Chronic health problems. Similarly, among students with chronic health problems, over 90% had not registered. Is it that these students don't actually need anything from campus disability service offices, do they not consider themselves as having a disability, the campus access service does not offeranything of use to them, or they simply don't know that they are eligible for services? This topic, too, needs further examination.Why are students in some of the potentially most common disabling situations not registering for disability services?This, despite findings such as Newman et al.'s (2011) recent study which showed that over 40% of both two-year and four-year college students indicated that it would have been helpful to have had some services, accommodations, or helpwith schoolwork. Furthermore, students who had registered were more satisfied with the college experience (Jorgensen et al.,2012). Possible reasons for not registering include:

a. They do not require any services or accommodations because their disability does not result in any barriers in the educational environment.
b. The services and accommodations aren't needed because universal design removes the barriers (e.g., course notes are available online to all students).
c. The services and accommodations provided by campus disability-related services are not the ones they need (e.g., don't need extended time, but do need rescheduling of tests/exams).
d. Students are not aware that services exist, or that they could be eligible for services (e.g., those with a chronic illness may not perceive this as a disability and, therefore, may not consider approaching the campus disability-related services office).
e. Students don't want to identify to any college officials, either because they want to "do it on their own" or because of perceived long-term consequences or social stigma (e.g., mental health).
f. Some students may access services in their community (e.g., out-patient mental health clinics) or pay for these services (e.g., private tutors, psychologists in private practice).
g. Students do not find the services easy to access (e.g., cumbersome intake process, stringent documentation requirements, complex procedures to follow to request services and accommodations, inconvenient appointment times).
h. As suggested elsewhere, there may not be any benefits to registering (Ardell et al., 2016) and there may be substantial effort and costs involved in doing so (Lightner et al., 2012; Lyman et al., 2016).

LD vs.ADHD. Budd et al.(2016) proposed that is inadvisable to group together students with LD and ADHD because students with ADHD have difficulties in different academic realms than students with LD and because they also have worse academic outcomes.When we examined registration by students with LD with or without ADHD, 61% had registered. Was this due to LD? To ADHD? Or to their comorbidity? To explore this we examined registration for disability-related services in a sub-sample of students where we separated students into those who only had LD versus those who only had ADHD. Here we found a trend: 73 % of students with LD had registered while only 40% of students with ADHD had done so. It is not surprising that students with LD are likely to register. This group often receives support and accommodations throughout their earlier schooling. Furthermore, the accommodations provided by campus disability services are often clearly related to the barriers they encounter in education (Gregg&Nelson, 2012).As for students with ADHD not registering may have to do with the nature of the disability (e.g., executive functioning deficits, time management, concentration), as well as, with the type of services - or lack thereof - provided for students with ADHD.

In future research it is important to separate students with LD and ADHD in accordance with Budd et al. (2016). Huie, Winsler, and Kitsantas (2014) noted that poor grades associated with ADHD may be the product of poor executive functioning and not lack of ability. Thus, typical accommodations provided to students with ADHD by campus disability services may not be addressing these needs (D'Alessio & Banerjee, 2016). As Budd et al. (2016) noted, "colleges and universities can help better respond to the needs of students with ADHD by sponsoring workshops and programs aimed at improving executive functioning and self-regulation skills (e.g., time management, organization, prioritization, planning). Additionally, postsecondary schools can implement ADHD coaching programs (e.g., cognitive-behavioral therapy with psycho educational techniques)" (p. 213).

Question 4. Is there a difference in the program of study between students with and without disabilities?

Our findings show, consistent with those of others, that junior/community college students with disabilities are more likely to be enrolled in an academic than in a career/technical program of study (e.g., Newman et al., 2011). Our findings also show that students with disabilities are under-represented in the sciences. The proportion of students in our study is somewhat smaller than the 11% in Newman et al. (2011).Nevertheless, several large-scale studies have shown similar proportions of students with and without disabilities in science, technology, engineering and mathematics (STEM) programs (National Science Foundation, 2011; Statistics Canada& Council of Ministers of Education, Canada, 2015). On the other hand, Lee's (2011, 2014) studies show a larger representation of students with disabilities than without disabilities in STEM programs.

Question 5: Is there a difference in program of study between study with disabilities who are and those who are not registered for disability-related services?

Registration for disability-related services was unrelated to students' program of studies. As others have shown, registration is often unrelated to aspects of academic life such as stress levels (e.g., Ardell et al., 2016) and GPA (Fichten, Nguyen, Amsel et al., 2014; McGregor et al., 2016; Murray, Christopher, Lombardi, Allison, Kosty, & Derek, 2014).

Question 6. Do students with different disabilities enroll in different programs of study?

No. Our data fail to show systematic differences in the programs of students with different disabilities. However, we should note, parenthetically, that consistent with Wei, Yu, Shattuck, McCracken, and Blackorby's(2013) findings, the single student with autism spectrum disorder was registered in a STEM program.

Limitations

Even though our sample was random, our investigation encompasses only two junior/community colleges and relies on participants having self-reported their disabilities. Moreover, we did not separate LD and ADHD in the larger portion of the sample. Perhaps more importantly, when it comes to registration for disability-related services, we did not ask students whether they actually used the services or accommodations: only whether they had registered for them. These concerns should be remedied in future research. In addition, those students with disabilities who indicate that they did not register for disability-related services from their school should be asked to indicate why they did not do so.

Implications and Recommendations

It is difficult to provide implications without knowing why some students do not register for disability-related services. In fact, the small numbers of students with different disabilities is a major limitation of our investigation. Thus, data-based recommendations await future research

At this point, we can simply speculate. Should disability related services move ahead and offer accommodations on a needs-based model, rather than on a diagnosis? What barriers is the student encountering in the environment and how can these best be overcome? Services and accommodations are often seen by faculty as "one size fits all"(e.g., students with ADHD or anxiety disorders are often allocated additional time for tests/exams but this may not be as helpful as "stop-time" (i.e., taking a break between different sections of an exam)). Disability service providers may need to focus on students' individual needs related to specific academic tasks rather than on checklists of accommodations which can provide a mismatch between needs and services. This, of course, takes time. If time could be spent upfront to develop good individual plans and teach skills, then students could be more autonomous and require less time from the disability services office in later semesters.

Students have an important role in the self-determination of needs and potential solutions. However, service providers need to be well informed so they can provide guidance as to what services and accommodations are most likely to be both beneficial and reasonable. Of course, this is not always easy when dealing with many different disabilities. This is where communities of practice, email discussion lists, webinars, etc. can be useful to service providers.

Are disability-related services publicized enough? Maybe students are aware that the services exist but don't see how these relate to their specific needs. This issue can be addressed via transition-planning programs, liaison with rehabilitation centers, student orientation in person or on-line, updated websites, etc.What role does technology play? If students can access their personal assistive devices in class (e.g., large font, text-to-speech), they may not need the adaptive technology provided through campus disability-related services.

Where does universal design fit in? If professors are making their courses truly accessible, then fewer students will need access services. For now, universal design could be a way to reach the 50% plus students who don't know about disability-related services or who choose not to register. And imagine what benefit universal design could be to those students who don't self-report a disability because they aren't yet aware of having a disability (Harrison, Larochette, & Nichols, 2007)!

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