

**Abstract**

We present findings from an interview study concerning Canadian college students with disabilities in clinical internships. The study explored the perspectives of seven college faculty internship supervisors, eight accessibility advisors, and 14 students with diverse disabilities who were currently doing - or had recently completed - a required internship for their program. Thematic analysis was used to uncover key themes related to facilitators and barriers relevant to accessibility, knowledge, communication, disclosure / self-identification, policies / legislation, support strategies, and useful technologies. Highlights of our results indicate that accommodations that are typically available in college classrooms are not appropriate for most internship settings, that policies and procedure manuals related to accessibility supports / accommodations in internships are scarce, and that communication among faculty, students and accessibility advisors is poor and do not typically include on-site clinical supervisors. In addition, we found that students are often reluctant to self-identify as having a disability because of fear of stigma and professional concerns. A variety of technologies that can be useful in internship settings was identified, but participants noted that internship settings were often reluctant to use these because of concerns with patient confidentiality and biohazard safety. We recommend that colleges develop Equity, Diversity, Inclusion and Accessibility (EDIA) policies that reflect internships and that communication structures be developed that allow all stakeholders to participate.

*Keywords*: clinical internships, college, students with disabilities. Accommodations

In recent years, the importance of inclusivity and accessibility within higher education has commanded considerable attention. This is, in part, because between 18% and 34% of Canadian college and university students have a disability (Canadian University Survey Consortium, 2020, 2021; Fichten et al., 2018, 2019). However, while strides have been made in providing accessibility supports to students with disabilities in academic settings (Fichten, Havel, Tremblay et al., 2022), there remains a critical need to ensure equitable access and support during clinical internships (Lindsay et al., 2023; Neal-Boylan et al., 2018). These internships serve as pivotal components of professional development, offering students invaluable experiential learning opportunities that bridge the gap between theory and practice, as well as between post-secondary education and the world of work. Here, we review trends in the literature on disability inclusion in internships, highlight gaps in knowledge and make recommendations to increase accessibility.

College students with disabilities face a variety of unique challenges arising from physical barriers and limited digital accessibility, as well as lack of awareness and understanding among peers, faculty and onsite supervisors. They may also encounter systemic barriers that can impede their full participation and success in clinical internship settings (Neal-Boylan et al., 2018; Gross et al., 2023). Some common challenges include meeting the academic and technical standards of a program, informing others of their disabilities and requesting accommodations (Pearlstein et al., 2022). In addition, students’ own perceptions of themselves may create further limitations to their professional aspirations (Easterbrook et al., 2015).

Understanding the perspectives of various stakeholders is crucial to developing effective strategies that address challenges and create internship environments where all students, including those with disabilities, can thrive.

**Stakeholders**

College faculty internship supervisors play a crucial role in the inclusion of students with disabilities in clinical settings. They are often the first point of contact for students seeking accessibility supports and they can help create an inclusive learning environment through their support and advocacy (Pearlstein et al., 2022). College students with disabilities also have valuable insights into how they can best be supported in clinical internship settings. (e.g., Crouch, 2019). Their lived experiences provide a unique perspective on the challenges and barriers that students with disabilities may face, as well as the strategies and accessibility supports that can help them succeed. Accessibility advisors are responsible for providing accommodations and support to students with disabilities while they are studying at the college. But, to what extent do accommodations appropriate for the classroom transfer to clinical internship settings?

**Accessibility Supports and Self-Identification**

Surprisingly, those accommodations that are often reasonable and approved by college accessibility services may not be granted in the internship setting. For example, Neal-Boylan and Miller (2017) interviewed 15 nurses. One of the participants, who had urinary problems related to a chronic disease, did not receive release to go to the restroom during three-hour examinations. Another participant reported that the hospital assigned a nurse to accompany her throughout her clinical internship. Neal-Boylan and Miller concluded that,

“*Participants perceived that faculty and administrators were frequently concerned about whether the student could provide safe care. Participants indicated there was fear, misinterpretation, lack of understanding, anger, and anticipation of inconvenience or retribution on the part of faculty or administration. There was a perception that nursing faculty associated disability with a lack of intelligence and did not understand there was more than one way to do things”* (page 178).

Given such views, it is not surprising that many students choose not to disclose their disability or request accessibility supports in their internships. For example, Meeks et al. (2021) showed that 7.6% of medical residents had a variety of disabilities. However, only 4.6% formally reported a disability and requested accommodations. Similarly, in Pereira-Lima et al.’s (2023) survey of first-year medical residents across 15 specialties, 9.3% self-identified as having a disability, although more than half of those needing accommodations did not request these. “Fear of stigma or bias was the most prevalent reason for not requesting needed accommodations, followed by a lack of a clear institutional process for requesting accommodations” (page 1). Amaechi et al. (2023) reported that views about students with mental illness were the most negative. In fact, a frequently reported coping strategy for students was to hide their disability (Epstein et al., 2020).

**Technology-based Accessibility Supports**

Students with various disabilities may have different technological needs and the knowledge base is vast regarding the provision of assistive technologies for these students in their classes (Fichten, Martiniello, Asuncion et al., 2022). For example, students with specific learning disorders, such as dyslexia, can find tools such as using a calendar and reminders, word prediction, text-to-speech, and speech-to-text especially helpful.

However, which technologies can students use effectively in clinical internship settings where issues around patient privacy, biohazard safety and sustained attention are crucial? Moreover, if clinical staff value professionalism above all, they are likely to use the medical rather than the social model of disability. So, they are likely to evaluate students based on their ability to perform the perceived essential aspects of the job (e.g., lifting a patient) instead of on student competencies (e.g., knowing when the patient should be lifted and getting human or technical assistance to do so) (Neal-Boylan et al., 2018).

**Present Study**

We endeavor to contribute to the discourse on supporting college students with disabilities in clinical internships by examining the viewpoints of faculty clinical supervisors, accessibility advisors, and students with diverse disabilities. We seek to gain insights into the various factors that influence the accessibility and inclusivity of internships. Through a qualitative exploration of these stakeholder perspectives, we aim to identify best practices, potential areas for improvement and recommendations that can inform policy and practice in higher education institutions.

**Method**

**Participants**

Participants were 29 individuals from three-year post-secondary health/medical and community services programs that require students to complete internships for graduation. Seven interviewees were faculty internship supervisors, 14 were students with various disabilities, and eight were accessibility advisors. All eight accessibility advisors were female as were six of the eight faculty members and 13 of the 14 students. Faculty and student participants were associated with the following academic programs: Biomedical Laboratory Technology, Community Recreation Leadership Technology, Diagnostic Imaging Technology, Medical Ultrasound Technology, Nursing, Physiotherapy Technology, Radiation Oncology, and Social Service. Students’ disabilities included: attention deficit hyperactivity disorder, low vision, specific learning disorder, generalized anxiety disorder, post-traumatic stress disorder, mobility impairment, chronic medical condition, and dyspraxia. Several students had multiple disabilities.

 Faculty members were responsible for their program’s supervision of clinical internships.

Students were either currently enrolled in a required internship associated with their program or had recently completed this requirement. The broad definition of internship was used to describe a supervised, structured learning experience in a professional setting that allows a student to gain valuable work experience in their field of study. This definition was applied to both those programs that offer learning experiences where students are assigned to clinical settings in the community and are supervised by on-site professionals who work there, as well clinical education courses where college faculty go on-site with students to supervise their activities in a clinical setting (University of Maryland, Baltimore County, n.d.)

**Procedure**

An Advisory Board meeting was held in September of 2022. It was composed of the dean of medical studies of the college, five health/medical technology faculty, some of whom were also program chairs, and a pedagogical counsellor. Advisory Board members’ responses were used as the basis for the interview questions for the three groups of participants.

After obtaining approval from the Dawson College Research Ethics Board, we interviewed the participants in the Winter 2023 semester. While the interviewer asked the questions, a team member took notes. Interviews typically lasted a half hour and questions dealt with the following:

1. Experience with disability and fieldwork/clinical internships (only faculty, accessibility advisors)
2. Barriers in fieldwork/clinical internship
3. Facilitators in fieldwork/clinical internship
4. Specific challenges faced by the participant group
5. Resources that could be helpful
6. Assistive technology that could be useful
7. Useful strategies/techniques/recommendations
8. Disclosure / self-identification issues
9. Success experiences (students only)
10. Challenges faced by the college (only faculty internship supervisors, accessibility advisors )

Three of the co-authors familiarized themselves with the interview notes, individually generated themes and then reviewed these as a group, using thematic analysis (Braun & Clarke, 2006). Discrepancies were resolved and consensus achieved. Six themes were retained: accommodations, communication, disclosure, knowledge, policies / legislation, and strategies / resources. In addition, three team members created a list of useful technologies mentioned by participants, while two others classified these into agreed upon categories.

**Results**

**Thematic Analysis**

***Accessibility Supports / Accommodations***

Comments regarding accessibility supports were made by all three groups, especially concerns related to accessing accommodations during internships. Both faculty internship supervisors and accessibility advisors agreed that many classroom accommodations may not be applicable in internship settings. Also, both students and accessibility advisors noted that students face resistance when asking for and using technology-based accommodations.

However, there were some notable differences between groups. Students felt that it is wise to confirm beforehand that an internship setting will permit them to access the accommodations they need. Faculty expressed the importance of providing accommodations to students with non-visible disabilities and that some students assume that their disability has to be extreme to request accommodations. Accessibility advisors suggested that students may not even be aware of their right to receive accommodations during internships.

***Communication***

While all accessibility advisors mentioned communication issues, fewer faculty internship supervisors and even fewer students made comments regarding this topic. However,

shared concerns include the importance of communication and the consequences for students when there is a lack of it. Students and accessibility advisors commented on the dearth of communication between the college and internship sites regarding accommodations. The benefit of increased communication between faculty and accessibility advisors was noted and a suggestion was made to have a three-way meeting among faculty supervisors, students, and accessibility advisors prior to the start of the internship. Faculty asked for guidance on issues of student confidentiality as it relates to communication. Accessibility advisors felt that a feedback mechanism from students to accessibility advisors would be helpful, as would contact with department chairs to facilitate understanding of how to best support students in internships.

***Disclosure / Self-Identification***

All the students and faculty internship supervisors commented on disclosure of disabilities, but relatively few accessibility advisors mentioned this subject. Students and faculty both noted that students may not disclose their disability because they are afraid it will affect their perceived competence. Notably, students commented that they need guidance on how to self-identify effectively as they realize that in some circumstances disclosure could be helpful.

Faculty indicated that not all students, especially those with non-visible disabilities, self-identify, even if this could be helpful in receiving accommodations. Some faculty, when they are aware that a student has a disability, encourage them to share this with the on-site supervisor at the beginning of the internship.

Accessibility advisors made comments regarding why students may choose not to self-identify. Students might not disclose to supervisors because they have a need to prove themselves or may be afraid that disclosing disability information could interfere with successful completion of their program.

***Knowledge***

While many faculty and accessibility advisors brought up the theme of knowledge, very few students did so. All three groups agreed that there is a lack of knowledge regarding the role of specific stakeholders in the obligation to provide accessibility supports. Along with this, faculty expressed concern about their lack of knowledge about disabilities.

Students noted difficulty conveying the impact of their disability to others. Also, they lamented the lack of awareness about the role accessibility advisors can play in providing accommodations.

Faculty clinical supervisors indicated that a primary barrier to the provision of accommodations includes both lack of knowledge about technology that could be useful and about how a specific internship site functions. They would like the opportunity to learn more about unfamiliar internship sites in advance and to educate on-site internship supervisors about different disabilities and what could help the student succeed.

 Accessibility advisors noted a need for educational materials to facilitate accessibility supports. They would like to inform faculty and on-site internship supervisors about how a disability manifests itself in work settings and what accommodations can be implemented.

***Policies / Legislation***

Relatively few accessibility advisors, very few faculty internship supervisors and no students commented on policies and legislation. Those accessibility advisors who expressed an opinion noted the need for clear documentation and a policy regarding the role of stakeholders in providing accommodations and the rights of students with disabilities during internships.

Faculty internship supervisors’ comments reflect a need for a college-wide policy regarding accommodations during internships as a means of addressing potential conflict between students’ rights and the provision of quality care to patients. Mention was made of the need for proper structure and policy regarding remediation plans when difficulties arise.

***Supports / Strategies / Resources***

Participants in all three groups suggested a variety of supports/strategies. They mentioned students visiting the internship site beforehand and scheduling regular meetings with faculty and on-site supervisors. Another suggestion was to provide students with digital support resources accessible 24/7.

**Useful Technologies**

Table 1 shows that all groups reported that tablets and smartphones were seen as especially useful. The same is true for dedicated reading and writing software such as Read&Write and WordQ, as well as general use writing and screen reading software such as Word and Google Docs. Accessibility advisors also indicated that organization/productivity tools were helpful, along with dictation software available in general use technologies such as Word and on tablets. In addition, some participants included disability specific (e.g., an app that takes a picture and then reads any text in the picture aloud) and program specific (e.g., digital protractor for measuring angles) tools.

**Discussion**

The aim of this study was to identify best practices, potential areas for improvement and recommendations based on the experiences and expertise of various stakeholders engaged in addressing accessibility challenges of college students with disabilities during clinical internships.

As noted by others (e.g., Pearlstein et al., 2022), we learned that lack of awareness and understanding among peers, faculty and accessibility advisors abounds, that students are often reluctant to self-identify as having a disability (Easterbrook et al., 2015; Epstein et al., 2020; Meeks et al., 2021; Pereira-Lima et al., 2023), and that accommodations that are appropriate for the classroom are not necessarily appropriate in the internship context (e.g., Neal-Boylan and Miller, 2017).

We also found a variety of proposed solutions that can work in a Canadian context where the protections of American legislation do not apply. These can be examined through two perspectives. The first includes best practices concerning accommodations, strategies, and technologies that students, faculty internship supervisors and accessibility advisors see as beneficial. The second focuses on barriers, facilitators and challenges, and maps a pathway for improvement and recommendations.

**Best Practices Perspective**

***Accommodations and Strategies***

The three stakeholder groups interviewed identified common accommodations and support strategies, some of them related to technology (e.g., students delivering case notes to instructors digitally), while others were practical or procedural, and not technology-based (e.g., closing the curtain when working with patients to minimize distractions). Supports recommended by students are noteworthy because they reflect their lived experience and are often very pragmatic (e.g., providing digital support resources to students that are accessible 24/7). However, students expressed concern about what might be reasonable or even feasible in certain settings with which they were unfamiliar. Overall, the suggestions obtained were not especially innovative as many respondents were themselves seeking solutions.

Faculty internship supervisors and accessibility advisors noted that accommodations and supports agreed upon in the classroom setting, such as extended time for exams, are often not applicable in the internship setting. Both students and accessibility advisors reported that students sometimes encounter resistance when requesting accommodations. This may be the result of a lack of awareness or understanding among internship supervisors about the validity or necessity of such accommodations. Such resistance could also reflect concern that accommodations may somehow impact the achievement of clinical competencies. Lists of best practices found in the literature were more extensive, perhaps because they are based on the experience of master practitioners rather than research participants. Furthermore, the strategies presented in the literature are often focused on one type of disability (i.e., dyslexia cf. Crouch, 2019) or one professional field (i.e., medical students cf. Meeks et al., 2021; Pereira-Lima et al., 2023) or nursing students (cf. Neal-Boylan & Miller, 2017).

***Useful Technologies***

Our findings revealed a consensus across stakeholder groups regarding the usefulness of certain technologies, such as mobile devices (tablets and smartphones), dedicated reading and writing software, general writing and screen reading software, as well as organization and productivity tools. Some participants mentioned disability-specific and program-specific tools as well. While there is no question that there are benefits to utilizing assistive technology in the clinical setting there was still a lot of resistance to its use. Nevertheless, it was suggested that some of the technology used by students for its accessibility features could be beneficial to professionals already employed in the field and even change some existing clinical practices. For example, although paper charting is still common in many settings, electronic charting is rapidly gaining popularity. Not only can it allow access to digital accessibility tools for those with disabilities, it facilitates health care professionals sharing information accurately and quickly**.**

**Barriers, Facilitators and Challenges**

Our results show that many of the challenges faced by students with disabilities during their internships can be attributed to systemic barriers relating to practices, procedures, and policies. Common hurdles include a lack of communication among stakeholders and the lack of knowledge in certain areas expressed by both faculty internship supervisors and accessibility advisors. Students were reluctant to disclose their disabilities and to request accommodations for fear of prejudice. Faculty and accessibility advisors felt administrators had an important leadership role in developing college policy on accessibility and inclusion.

***Communication Barriers***

The importance of clear and consistent communication was noted by all three stakeholder groups. Faculty internship supervisors and accessibility advisors recognized the need for increased communication with each other concerning students' needs and accommodations, before the internship begins. Students highlighted the desirability of three-way meetings in which they were present. Accessibility advisors stressed the importance of having clear communication and collaboration with program coordinators, department chairs, and internship supervisors, as well as with on-site internship supervisors.

***Knowledge Gaps***

The three stakeholder groups recognized that on-site internship supervisors needed education regarding students with disabilities and their right to accommodations. Students noted that accessibility advisors need to help internship supervisors understand the impact of disabilities and the role of accommodations. Accessibility advisors emphasized the importance of creating educational materials to inform faculty internship supervisors about the challenges students face during internships with the goal of improving accommodations. On the other hand, accessibility advisors felt that they knew little about the various clinical settings or about the competencies that students need to achieve.

***Disclosure / Self-Identification***

This study's results suggest that students with disabilities are often hesitant to self-identify and request the necessary accommodations during their internships. As noted by others (e.g., Pereira-Lima et al., 2023), the fear of stigma, along with the fear that it might affect how they are perceived in terms of competence, seems to deter many students from disclosing their disabilities. Accessibility advisors pointed out that students might be afraid that disclosing their disabilities could interfere with their graduation. These findings are in line with research that has emphasized that self-identification by students with disabilities remains a nuanced and challenging issue.

***Policies and Legislation***

Policies and legislation were discussed infrequently, but their importance is obvious. Accessibility advisors highlighted the need for clear policies outlining the responsibilities of clinical supervisors, accessibility advisors, and students.Faculty recommended improved clarity via institution-wide policies to guide clinical internships and ensure consistency across programs within the college. Accessibility advisors pointed out that students may not always be aware of their right to receive accommodations during internships. Perhaps legislation was infrequently referred to in our study because other jurisdictions have better articulated equity, diversity, inclusion and accessibility (EDIA) policies backed by strong legislation.

**Conclusions and Recommendations**

Our findings reaffirm the significance of accessibility and inclusivity in higher education and also uncover practical challenges faced by students with disabilities during clinical internships. It is clear that fostering an inclusive culture, establishing clear policies, enhancing communication, and promoting greater knowledge sharing are essential elements in ensuring that students with disabilities can fully engage and succeed in clinical internships. We identified various factors that influence the inclusivity of internships for students with disabilities. The following recommendations are based on our findings.

* The importance of an institution-wide Equity, Diversity, Inclusion And Accessibility (EDIA) **policy** that specifies the rights and responsibilities of students with disabilities in clinical internship settings. Such a policy needs to consider existing government legislation. Leadership from college administration is required to both initiate the process and to ensure adherence to the policy.
* Establishment of mechanisms to foster **communication** between faculty internship supervisors, accessibility advisors, students with disabilities and other stakeholders when appropriate. For example, as communication is critical prior to the start of an internship, an intake form can be devised, with sections to be completed by each stakeholder involved, followed by periodic meetings during the semester to review strategies and accommodations.
* **Knowledge** around inclusive clinical internships need to be gathered, including an inventory of best practices and suitable role models in different disciplines. As various stakeholders hold different pieces of information, opportunities to transfer this knowledge should be arranged, both formally and informally.
* **On-site clinical supervisors** need to become engaged in the process of inclusion of students with disabilities. This can be accomplished if they participate in shared knowledge exchange among stakeholders.
* **A Universal Design for Learning (UDL)** approach should be applied as it allows for the inclusion of a diverse student population in clinical settings, while at the same time providing accommodations for students with disabilities when required.
* The development of an **online toolkit** can facilitate the collection of information available to all stakeholders as needed. Multiple means of representation can be achieved through using tip sheets, video clips and other resource materials.

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**Table 1**

*Technologies Used in Internships*

|  |  |  |
| --- | --- | --- |
| Category of technology | % of participants | Technologies mentioned |
| **Students n=14** |  |  |
| Dictionary / reference | 4% | Google Translate (1), Lexibook = digital dictionary (1) |
| Hardware – mobile technology | 23% | iPad (3), Laptop (4), Smartphones (4) |
| Hardware – other than mobile tech | 9% | A digital protractor to help position patients correctly for scans (1), A pen light to help read scans in rooms that need to use dim light (1), Access to a computer in the biomedical laboratory at the college (1), Noise-cancelling headphones (1) |
| Magnification | 4% | Having documentation in+24:27 a digital format, so that they can Zoom in enlarging the text (1), ZoomText(1) |
| Organization / productivity | 6% | Notes application (1), Reminder applications (2) |
| Screen reading | 13% | Read & Write (3), Text-to-speech (1), An application that takes a picture and reads any text in the picture aloud (1), a C-Pen to use text-to-speech effectively (1) |
| Writing | 28% | Antidote (3), Read & Write (3), Word Q (1), Google Docs (3), Samsung Notes (1), Word (1), Word prediction feature on their iPhone and application on their iPad (1) |
| Other | 13% | Home exercise plans generated through software (1), Online modules (1), Physiotec, a website that creates exercise routines for patients, including clear images and videos of exercises (1), Podcasts (1), YouTube videos (2) |
| **Faculty n=7** |  |  |
| Dictation | 7% | Speech-to-text (1) |
| Hardware – mobile technology | 53% | iPad/tablet, or other electronic devices (e.g., smartwatch) (4), smartphone (4) |
| Hardware – other than mobile tech | 7% | Smartpen (1) |
| Organization / productivity | 7% | Calendar applications to provide a structured schedule for their day (1) |
| Screen reading | 13% | Read & Write Gold (1), text-to-speech(1) |
| Writing | 13% | Antidote (1), Read & Write Gold (1), Word Q (1) |
| **Accessibility advisors n=8** |  |  |
| Dictation | 18% | Dictation/dictation in word (4), speech-to-text (3) |
| Hardware – mobile technology | 21% | iPad/tablet, or other electronic devices (e.g., smartwatch) (4), Smartphone (4) |
| Hardware – other than mobile technology | 3% | Smartpen (1) |
| Organization / productivity | 28% | Agendas (1), Alarms (2), Checklist planner(1), Recording instructions/conversations (1), Reminder applications(1), Timers (2), To-do lists (1), To-do app (1), Voice prompts to jog their memory(1) |
| Screen reading | 15% | Read & Write (2), Reader software(1), text-to-speech(3) |
| Writing | 15% | Antidote (2), Google doc / Word doc (1), Read & Write (2), Word Q (1) |

*Note.* The numbers in the technologies mentioned column indicate the number of participants who mentioned this.