Western&Graduate&PostdoctoralStudies

Electronic Thesis and Dissertation Repository

3-30-2022 10:00 AM

Examining the Lived Experience of University Students Receiving Academic Accommodations for Concussion

Mary C. Prior, *The University of Western Ontario*

Supervisor: Johnson, A.M., *The University of Western Ontario*
Co-Supervisor: Rodger, S.R., *The University of Western Ontario*
A thesis submitted in partial fulfillment of the requirements for the Master of Arts degree in Education
© Mary C. Prior 2022

Follow this and additional works at: https://ir.lib.uwo.ca/etd

Part of the Disability and Equity in Education Commons

Abstract

Purpose. The present study aimed to gain insight into the lived experiences of post-secondary students with concussion(s) who are receiving academic accommodations. This was explored in the context of the COVID-19 pandemic, where the shift to online learning became ubiquitous. The purpose was to determine whether university students with concussion face similar challenges compared to (1) younger populations of students with concussion (i.e., elementary and high school aged students) and (2) individuals with more severe Traumatic Brain Injuries (TBIs). ***Method.*** Nine university students who were registered with academic accommodations at a Canadian university engaged in semi-structured interviews. Interpretative Phenomenological Analysis was used to inductively analyze the interview data. ***Results.*** Student experiences with their academic accommodations were mixed; the transition to online learning resulted in both new barriers (i.e., test-taking difficulties with Proctortrack) and the amplification of pre-existing barriers (e.g., an exacerbation of concussion symptoms due to increased screen time). Factors that were often beyond students' control (e.g., faculty and familial support, financial resources) affected whether students felt well-accommodated in their classes, and created discrepancies across students in the provision of accommodations. Faculty members, peers, and friends of students who had more concussion-related knowledge were more readily supportive and accommodating. Students who exhibited personal resourcefulness fared better overall and engaged in less catastrophizing. ***Conclusions.*** Barriers to accessible education in students with concussion in the post-secondary setting exist and have been amplified by the shift to online learning. Potential areas for intervention at the individual and systems levels are discussed.

Keywords: Concussion, student, online-learning, disability, accessible education, COVID-19 pandemic, support, stigmatization, resourcefulness.

Lay Audience Summary

The lived experience of university students registered with academic accommodations for concussion is an area of research that has been under-explored within the literature. In addition, the shift to online learning due to the COVID-19 pandemic has posed further questions about whether students with concussion feel like they are well-supported. The aim of this study is to address this gap in the literature by examining the lived experiences of university students with concussion registered with accommodations. Participants consisted of nine students with concussion attending a Canadian university who were registered with academic accommodations who took part in a one-on-one interview. Interviews were coded for emergent themes that were consistently found across cases. Student experiences with academic accommodations were mixed. The transition to online learning resulted in new barriers (i.e., test-taking difficulties online) and the worsening of existing barriers (e.g., concussion symptoms due to screen time). Factors that were beyond students' control – such as level of professor and family support, financial resources – affected whether students felt well-accommodated. Students with high levels of resourcefulness, who were able to effectively problem-solve and find coping strategies to lessen their symptoms, viewed their accommodations more favourably; they also experienced less stigma, and less anxiety. Students with lower personal resourcefulness viewed their accommodations less favourably, especially following the shift to online learning. Discussion centers around how these findings contribute to research and can be used to influence policy on accessible education for students with disability.

Acknowledgements

I would like to sincerely thank Dr. Johnson and Dr. Rodger for being my thesis co-supervisors. Thank you both for allowing me with the opportunity to pursue a research topic that I am passionate about. This project would not have been possible without your ongoing support, expertise, and guidance during these past couple of years.

To my research participants, thank you for sharing your experiences with me, and for so openly reflecting on what for many of you have been low points in your lives. The hours that I spent with you forever changed me. Your resilience, vulnerability, and perseverance through your experiences motivated me to continue putting my all into this project. Thank you for providing me with such valuable information.

Thank you to my parents, who have been my number one supports throughout this journey. From being there for me when I was dealing with my own struggles with concussion, to encouraging and motivating me when I began my research on the topic, I am forever grateful. Without you both, I would not be where I am today.

Table of Contents

List of Tables

Chapter 1: Introduction

With the Ontarians with Disabilities Act (AODA), Ontario became Canada's first province to implement and mandate accessibility standards (AODA, 2005). The AODA requires various organizations – including colleges and universities – to make their services universally accessible for people with disabilities (Government of Ontario, 2014). The definition of disability adopted by this legislation is broad, defining disability as encompassing mental, physical, and learning impairments (AODA, 2005). Universities and colleges in Ontario have long been required to abide by human rights legislation, but it was not until the passing of the AODA that such organizations were *legally obliged* to proactively ensure that their facilities and services were generally accessible (Flaherty & Roussy, 2014).

According to 2017 statistics, one in five (22%) of Canada's working-age population (15-64 years of age), or about 6.2 million people, were classified as having one or more disabilities (Statistics Canada, 2017). Because most university and college students fall within this age bracket, there are clear implications for ensuring accessible and equitable access to education for this population. Despite the clear need, many K – 12 students who received accommodations do not receive support in the university setting (Deckoff-Jones & Duell, 2018). Canadians with disabilities attending university are less than *half* as likely to have a university degree compared to their non-disabled counterparts (11% vs. 20%) (Fichten et al., 2003).

Given these concerning statistics, there has been some criticism regarding how equitable the AODA standards are in the post-secondary realm. For example, Flaherty and Roussy (2014) note that the AODA has not addressed many of the barriers faced by students with disabilities. Factors relating to attitudes (e.g., stigmatization), for instance, are often entrenched and are difficult to address. In their view, it is too ambitious a goal to assume that a single piece of

legislation (i.e., the AODA) will be adequate in achieving an all-encompassing solution for university students with disabilities.

Types of Disability. The type of disability that a student has will influence whether they will face barriers in accessing accommodations at university. Disability is typically classified by taking into account the effect that disability has on one's day-to-day functioning (Deckoff-Jones & Duell, 2018). For example, disabilities are often classified as physical (affecting physical functioning), psychiatric (affecting mental health), and learning (affecting the ability to learn and acquire new skills and information). A "hierarchy of stigma" has been developed on the premise that certain types of disability tend to be more stigmatized than others, and will therefore create more barriers to equitable access to accommodation (Deckoff-Jones & Duell, 2018). For example, invisible disabilities (e.g., concussion, cognitive, and psychiatric disabilities) are often more stigmatized and fall nearer the top of the hierarchy than readily visible disabilities (e.g., those in a wheelchair).

Focusing on Concussion. Concussions are one of the ways in which an individual can experience an invisible disability. Often referred to as mild traumatic brain injuries (mTBIs), concussions are distinct from moderate to severe traumatic brain injuries (TBIs). In contrast to TBIs, there is no visible brain pathology on brain imaging devices in those with a concussion or an mTBI (Hadanny & Efrati, 2016). For most individuals, concussion symptoms resolve within the first one to two weeks post-injury. For approximately 10-20% of individuals, however, symptoms persist for weeks, months, or even years (Hadanny & Efrati, 2016). When symptoms persist beyond one month, patients are diagnosed with post-concussion syndrome (PCS; Prince & Bruhns, 2017). Thus, students who have sustained a concussion will require either short or long-term accommodations, depending on whether or not protracted symptoms are evident.

Typically, symptoms that arise post-concussion fall into one of three categories: somatic, cognitive, and affective. Commonly reported somatic symptoms include headache, dizziness, nausea, photophobia, phonophobia, and insomnia. Cognitive symptoms often consist of difficulty with concentration and memory, slowed processing speed, increased distractibility, and difficulties with multitasking. Affective symptoms consist of irritability, anxiety, depression, and emotional lability (Prince & Bruhns, 2017). The invisibility of the injury typically leaves individuals with a concussion near the top of the aforementioned "hierarchy of stigma" (Deckoff-Jones & Duell, 2018).

Current Study. Research has predominantly focused on the impact of moderate to severe traumatic brain injuries (TBIs) and academic accommodations in educational settings. Indeed, most concussion research in the educational environment focuses on "Return to Learn" (RTL) in younger adolescent populations (i.e., elementary and high school settings). Substantially less research has focused on the impact of concussion (mTBI) on the post-injury accommodations process in post-secondary settings. In addition, research has yet to focus on the impact of the COVID-19 pandemic on individuals with concussion who require academic accommodations. The present study will address these gaps by examining the lived experiences of post-secondary students with concussion(s) in relation to their academic accommodations in the context of the COVID-19 pandemic.

Chapter 2: Literature Review

The COVID-19 Pandemic. Beginning in early 2020, the COVID-19 virus was declared a pandemic by the World Health Organization (WHO, 2020). The pandemic resulted in an unprecedented disruption in the typical in-person mode of instruction across universities globally (Supriya et al. 2021). Indeed, in March of 2020, most universities in Canada closed their campuses entirely and abruptly transitioned to remote learning to prevent the spread of the virus. Students and instructors alike were required to learn and teach remotely due to physical distancing requirements (Supriya et al. 2021). The abrupt shift to online learning meant that university instructors had a period of only one to two weeks to modify their syllabi, teaching approaches, and assessments to account for a remote learning format before classes resumed. This transition to online learning was not short-lived: in the Fall of 2020, more than 75% of higher education institutions continued to deliver classes fully or partially online, and many institutions continued remote learning into the Fall and Winter of 2021 (Gin, 2021).

This abrupt transition to online learning has created obstacles for all undergraduate students. However, it has been hypothesized that the transition to remote learning has disproportionately impacted students from marginalized groups (Gin, 2021). Students with disabilities are one such marginalized group. Indeed, students with disabilities are often registered with academic accommodations as a means to facilitate their learning. In the context of the pandemic, administering these accommodations takes extra time and effort for course instructors who are often already overwhelmed, pressed for time, and themselves are experiencing difficulties in adjusting to the remote delivery of courses (Abdullah, 2021; Gin, 2021). Existing research consistently reveals that students with disabilities face additional obstacles in the context of remote compared to in-person learning (Fawaz & Samaha, 2020; Sundarasen et al., 2020; Terras

et al., 2020; Wang et al., 2020). These challenges have been found to lead to an increase in stress and anxiety for students registered with disabilities (Wang et al., 2020).

In an interview study, Terras et al. (2020) found that for online courses, students with disabilities reported that they had (a) less support and (b) fewer disability-related accommodations compared to their in-person classes. More specifically, students reported that they did not have access to many of the accommodations when they were learning online, that were once available to them in-person (e.g., extended test time, reduced-distraction testing environments). In addition, students with disabilities registered in online courses were found to require more frequent interaction with their individual course instructors and disability support personnel at their university (Terras et al., 2020; Phillips et al., 2012). This contact was often initiated by students in an attempt to advocate their need for accommodations that were not readily in place in the online environment (Terras et al., 2020).

The disproportionate impact of the COVID-19 pandemic on the lives of students registered with disabilities has created a need to assess the potential challenges students with concussion face in their online courses. The above studies suggest that students with concussion may experience unique barriers to learning in the context of remote learning, and such challenges have yet to be documented. The current study will address this gap by examining whether students at a large comprehensive university in Ontario experience any barriers to receiving academic accommodations given the transition to predominantly online learning during the pandemic.

Return to Learn (RTL). Return to Learn is a 6-step protocol that has been deemed effective in managing elementary and high-school students' return to the classroom post-concussion (Parachute, 2016). Despite this, the protocol requires a great deal of individual case

management, such as a gradual resumption of academic work, a graded approach to returning to the classroom setting, and often extensive modifications in the realm of academic workload (McGrath, 2010). Although some of these services are accessible to students post-concussion through the university health center, the level of monitoring required to implement RTL successfully is typically not available through university wellness centers. The absence of a uniformly employed protocol in the post-secondary realm often leaves students, course instructors, and wellness center advisors responsible for collaboratively managing academic accommodations post-concussion (Frost & Connolly, 2018).

 Concussion and Activity Advice. The current consensus on returning to activity post-concussion states that an initial period of rest (i.e., 24-48 hours) is recommended (Silverberg et al., 2020). The goal is to alleviate symptoms and reduce metabolic demands on the brain. The most recent research, however, has suggested that complete rest (in the form of lying in a dark room and avoiding *all* sensory stimuli) throughout recovery does not accelerate recovery (Silverberg et al., 2020). After symptoms have stabilized following an initial period of rest, it is recommended that patients gradually resume normal daily activities as tolerated (Silverberg et al., 2020). The key here is "as tolerated": physical and cognitive activities should resume at a pace that does not exacerbate symptoms or cause new symptoms to emerge.

 For the subset of patients who go on to experience prolonged concussion symptoms (i.e., PCS), the threshold at which they can tolerate their usual activities without symptom exacerbation is much lower (van Ierssel et al., 2020). Although some symptoms such as decreased attention and poor concentration can be managed through accommodations (e.g., assigning a lighter workload or modified assignments), not all symptoms point to such straightforward accommodations. Indeed, post-concussion symptoms (e.g., headache, light

sensitivity, noise sensitivity) are often exacerbated directly by specific environments and stimuli. Screen time (e.g., computer, television, cell phone) is one type of stimulus that may aggravate symptoms for many post-concussion. The inability to tolerate screens has implications for university students who rely on computers to attend classes and complete homework assignments (Silverberg et al., 2020).

Recent research by Bahkir and Grandee (2021) found that the increase in screen time during the pandemic has had health implications even for non-disabled, healthy individuals, in the form of ocular challenges and digital eye strain. Common symptoms of digital eye strain consist of headache, eye pain, increased sensitivity to light, blurred vision, and dryness of the eyes. Additionally, these researchers found that student populations were particularly vulnerable to such health issues, perhaps owing to their substantially increased screen usage (an increase of ~5 hours per day) compared to their pre-pandemic screen usage. This increase brought the student population's average daily screen usage to 8.9 hours. Half of the student sample in Bahkir and Grandee (2021) reported mostly using screens for school and academic-related purposes (online classes, assignments). If such increases in screen time can cause symptoms among non-concussed students, it is likely that screen-related symptoms will be more prevalent (and severe) for concussed students.

Indeed, van Ierssel et al. (2020) found that for students with a concussion, the overload and visual stimulation from computer, tablet, and cell phone screens: (1) triggered concussion symptoms; and (2) presented a barrier to engaging in life activities and resuming life roles (e.g., the student role). van Ierssel et al. (2020) recommend offering students who cannot tolerate screen time written (as opposed to computer-based) assignments. Unfortunately, this

recommendation was challenging to support amid the rapid shift to online learning during the COVID-19 pandemic (Silverberg et al., 2020).

    TBI and Accessibility. The lack of literature on concussion (mTBI) and academic accommodations in post-secondary settings necessitates turning to related research on the academic accommodation experience for post-secondary students who have sustained moderate to severe TBIs. Kramer and Davies (2016) implemented an interpretative qualitative design with three university students who had sustained TBIs (aged 18-23). Students were interviewed about the challenges they faced during the transition from high school to the university educational setting. The interview covered areas relating to the self (i.e., before the TBI), difficulties and symptoms experienced due to the TBI, and the accommodations provided in the university setting. The coding of the interviews identified major thematic categories relating to barriers faced by students upon entering university. The most commonly reported theme involved difficulties with focus and attention on course material upon entering university. These difficulties affected both academic and social functioning.

       For example, one participant experienced difficulties focusing in the classroom due to the environmental distractions and noted how this also impaired his ability to carry on a conversation with classmates. Other key themes included increased fatigue and sleep disturbances, short-term memory difficulties, and the need for a reduced course load, all of which appeared to be related to the headaches experienced by participants (Kramer & Davies, 2016). Participants noted that their doctors suggested avoiding computer screens as a method for reducing the experience of headaches, a recommendation that was described as challenging and impractical for a post-secondary student (Kramer & Davies, 2016). A limitation of this study was the small sample size (n = 3), suggesting that results may not be as rigorous as studies with a larger and more variable

(i.e., rich) sample. The present study will add to this literature by examining whether similar difficulties arise in a larger sample of students with concussion, while additionally exploring whether the ongoing COVID-19 pandemic presented new (and perhaps exacerbated) barriers to accessibility services.

In another related study by Cahill et al. (2014), the researchers also implemented an interpretative qualitative design using semi-structured interviews. The goal was to capture the narrative experiences of eight university students (with the broader age range of 18-60) who had experienced TBI(s). Participants were asked how their injury influenced their experiences at university and to identify any obstacles they faced during their studies, along with processes they used to overcome these obstacles.

Cahill et al. (2014) reported three primary themes. First, all participants described a balancing act whereby they had to meet academic expectations in the context of the physical limitations resulting from their injury. This balancing act resulted in students often missing out on non-academic activities (e.g., social activities) due to their limited cognitive and emotional resources. The second theme, "reality vs. injury," refers to the struggle students experienced in determining whether the challenges they experienced were due to their TBI or whether they were a normal part of the university student experience. The invisibility of the injury was cited as a significant factor in terms of the difficulty students had in distinguishing between reality vs. injury. Finally, all participants noted a divide between their abilities, perceived abilities, and the expectations imposed on them in the university setting. Students reported that some professors set recovery expectations for them that were not within the realm of their capabilities, yet simultaneously feared the "inevitable stigma" that would result if they inquired about and received accommodations (Cahill et al., 2014).

A limitation of this study was the broad age range of participants; the university experience – both academically and socially – can vary depending on whether a student is "traditional" in the sense of attending university soon after high school. In addition, some of the participants were presently enrolled in university, while some had graduated. These varying timelines may have resulted in skewed past perceptions: some participants were required to retrospectively remember information relating to accommodations they received in university many years ago. The current study will extend the qualitative work conducted by Cahill et al. (2014) by examining emergent themes relating to accommodation in a larger sample of students with concussion.

Stigmatization and Accessibility.

There are a variety of models of disability discussed in the literature. While the medical model focuses on symptoms and internal deficits, the social model views societal institutions and attitudinal barriers as the disabling and oppressive forces (Oliver, 2013). Critical disability theory challenges the ableist assumptions that shape society (Reaume, 2014). It posits that disability is socially constructed, and takes into account the relationship between the impairment, the individual's response to the impairment, and barriers that exist in broader social structures. Critical disability theory advocates for accommodation and equity for individuals with disabilities (Reaume, 2014; Oliver, 2013). The above models – and the medical model in particular, as it emphasizes "proof" and the need for "curing"– have implications for disability-related stigmatization.

Goffman (1963) defines stigma as a "trait which is deeply discrediting." Stigma refers to any attribute, disorder, or characteristic that marks a person as being unacceptably different from "normal" people within a society, and in turn, elicits sanctions from those in the community.

Stigma can relate to conditions of both the mind and the body, and can be further differentiated by conditions of varying levels of visibility and intrusiveness. For example, some disorders can be hidden or more readily disguised than others, allowing those afflicted to "pass as normal;" this is termed "discreditable stigma" (e.g., mental illness). On the other hand, those with disorders that are readily visible and cannot be hidden or disguised – such as blindness – are termed "discredited" identities. Stigmatization is an interactive social process; an individual will be labelled by others in society as "abnormal." Goffman (1963) cites physically deformed people, mental patients, and drug addicts as key examples of individuals with stigmatized identities.

Efforts among those who are stigmatized are often aimed at reworking their social identity in an attempt to fit in and be accepted by others. People are particularly motivated to control how others view them when they believe that their public image is relevant to the attainment of valued goals (Leary and Kowalski, 1990). In Goffman's (1963) terms, an individual may engage in "impression management": an attempt to regulate the perceptions of others by controlling information disclosure and one's self-presentation in the context of social interactions. Goffman's work is often interpreted as indicating that the person carrying the stigma is to blame for the reaction of others (Gray, 2002).

More recent work uses stigmatization in a broader sense to denote both the behaviour and attitudes of the victim and the perpetrator. Scambler (1998), for instance, makes a distinction between felt-stigma and enacted-stigma. Enacted-stigma is external and relates to experiences of actual discrimination and unfair treatment by others. Felt-stigma is internal and relates to the fear and shame of anticipated experiences of such discrimination, and is a barrier to both (a) talking about one's experiences and (b) help-seeking behaviour. This distinction was first developed in work on epilepsy; Scambler (1998) found that individuals with epilepsy work to conceal their

diagnosis in attempts to avoid experiences of enacted-stigma. Indeed, upon initial diagnosis with epilepsy, individuals first experience a sense of felt-stigma prior to any experiences of enacted-stigma. In response to this felt-stigma, individuals tend to conceal their diagnosis, taking a stance of non-disclosure. As a result of this concealment, others often remain unaware of the individual's diagnosis, resulting in few opportunities for – and instances of – enacted-stigma.

Enacted-stigma can also impact experiences of felt-stigma. For example, in a study on adults who stutter, Boyle (2018) found a significant positive relationship between enacted- and felt-stigma. In the study, participants who reported a higher number of experiences of enacted stigma in the past year experienced a higher degree of felt-stigma in the form of embarrassment, shame, and fear relating to anticipated future experiences of enacted-stigma. The researchers also reported a significant negative relationship between ratings of both forms of stigma and ratings of global mental health, indicating the detrimental impact of both forms of stigma.

In a study by Zaussinger and Terzieva (2018), researchers focused on the element of stigmatization examined by Cahill et al. (2014). In particular, researchers looked at the fear of stigmatization (i.e., felt-stigma) among students seeking to access accommodations for various disabilities – including invisible disabilities, a category of relevance for concussion sufferers. The researchers administered a cross-sectional survey to a sample of students attending various universities in Austria ($N = 475$) who did *not* seek support for their disability. The survey consisted of twelve motives relating to reasons for their unwillingness to seek support; the motives were classified as (a) stigma related (e.g., being afraid of being disadvantaged in the rest of one's studies), or (b) not-stigma related (e.g., believing that accommodations would not have helped). The researchers found that the motive for not seeking help due to fear of stigmatization was 75% higher than not seeking help for other reasons. This aligns with the growing body of

research indicating hesitance to seek out accommodations; several studies have found that for both student and worker populations, reluctance to request accommodations often emerges due to the perception that social costs may outweigh any performance benefits (Egan & Giuliano, 2009; Baldridge & Viega, 2001; Lee, 1997).

Zaussinger and Terzieva (2018) additionally found that having a visible disability reduces the stigma-related reluctance to seek out accommodations, and that perceived lack of belonging in university and feelings of isolation made help-seeking less likely. This is of relevance for the present study, since it suggests that students with invisible disabilities (e.g., concussion) face more stigma as a result of the invisible nature of the disability; therefore this may result in students with concussion facing more difficulties in requesting and receiving academic accommodations, especially if they simultaneously feel isolated and alone. A limitation of this study is illustrated by a finding by Brown et al. (2018) that students who do *not* seek support [which was the case for the sample in the Zaussinger and Terzieva (2018) study] are more likely to experience fewer disability-related limitations. Consequently, it cannot be concluded that these results are typical of all students with disability-related impairments, or concussion in particular, as there are qualitative distinctions between students who decide to seek support vs. those who decide not to. The present study will explore whether students with concussion who *do* seek out accommodations nonetheless experience the felt stigma that participants in the Zaussinger and Terzieva (2018) study feared. This information might then be used to adjust the accommodation process in the university setting, with the hopes of mitigating some of the negative consequences associated with accessing accommodations post-concussion.

Egan and Giuliano (2009) also examined the influence of stigmatization as it relates to academic accommodations. In the study, the researchers looked at the effects of academic

accommodation use and test performance using a hypothetical student. A 2 X 2 between-subjects design was used. Sixty-nine undergraduate students read a fictitious essay about a university student who either: (a) received or declined accommodations; or (b) who performed either better or worse than the participant on an exam. The specific accommodation the student received was extra time on the test. The researchers found that targets who performed better than the participant were rated as less likable, respectable, and intelligent when they received (as opposed to declined) academic accommodations. That is, stigmatization was found to be especially prevalent when the target outperformed the participant. This suggests that the perception of accommodations as "unfair" may indeed be associated with and accompany various negative evaluations of students who use academic accommodations. In addition, the researchers found that when the target performed worse than the participant, targets were rated similarly in terms of negative ratings of likability, respect, and intelligence whether they received or declined accommodations.

Overall, these results by Egan and Giuliano (2009) suggest the no-win situation that students with disabilities face when making the decision to use accommodations. Indeed, when students registered with accommodations improve academically as a result of their extra supports, they may suffer in the social realm in terms of their relative social status in turn. This study highlights the importance of having adequate social supports in place – perhaps in the form of readily available counselling services – for students who are registered with academic accommodations. The present study examined if students at a university in Ontario who were receiving academic accommodations experienced the felt-stigmatization that was found in the aforementioned study, or alternatively, whether the shift to online learning has perhaps mitigated these negative social consequences.

The Role of Faculty and What Students Need. In line with the finding that a sense of perceived belonging is essential for help-seeking in the form of academic accommodations, Zhang et al. (2010) examined factors associated with university faculty members' willingness to provide students with accommodations (i.e., which is one way that students with disability can experience felt belonging). Helpful accommodations for post-secondary students with concussion include reduced lighting, a quiet room to write tests, assignment extensions, recorded lectures, providing class notes, and altered test formats (Frost & Connolly, 2018).

Previous research (e.g., Haag, 2009) has found that when students perceive that even one faculty member is supportive and accommodating of their academic needs, they feel less stigmatized in general and more comfortable in turning to other faculty members for assistance in meeting their needs. Zhang et al. (2010) administered an online survey to 206 faculty members from diverse disciplines who were part of a major university system in the Southern United States. Structural equation modeling was employed in analyzing the data. The most noteworthy finding was that the personal beliefs of faculty members regarding students with disabilities (e.g., understanding why accommodations were necessary, believing in the efficacy of accommodations) had the most direct influence on the level of support provided to students and the provision of accommodations to students without question. In turn, these inclusive beliefs of faculty members were felt by students in the form of both reducing felt stigma and enhancing students' perceived sense of belonging in the post-secondary setting (despite requiring extra assistance). The results of the above two studies demonstrate the importance of working collaboratively with faculty in the post-secondary setting in order to assist students with disabilities throughout the accommodation process.

Pain Catastrophizing. A recent trend in the concussion literature consists of studies focusing on PCS-prevention; that is, researchers have investigated whether certain predisposing factors exist which make some individuals more likely to go on to develop PCS and experience more severe symptoms (which has implications for students who then require more numerous – and longer-term – academic accommodations). It is thought that if these vulnerabilities can be identified, at-risk individuals can undergo early-intensive intervention in hopes of preventing acute-concussion symptoms from becoming severe and chronic.

A study conducted by Chaput et al. (2015) demonstrates one of such predisposing factors: he refers to this diathesis as a "Pain Catastrophizing" (PC) coping style. PC is defined as "the exaggerated negative appraisal of pain experience" (Chaput et al., 2015). This study was conducted to determine the degree of correlation between the PC coping style and subsequent concussion outcomes. A cross-sectional design was implemented, in which 58 acute-concussion patients were assessed (through a self-report measure) for pain severity, psychological distress, degree of functionality, and PC at one month (time one) and eight weeks post-injury (time two). To determine the presence of the PC coping style, a 13-item measure – the PC-scale – was implemented. The PC-scale asks patients to report the frequency of their "catastrophizing thoughts or feelings," which are identified in terms of three dimensions: (1) Magnification; (2) Helplessness; (3) Rumination. For example, one item on the magnification subscale asks respondents to rate the degree to which they agree with the statement that "There's nothing I can do to reduce the intensity of the pain." Post-concussion symptoms were identified using the Rivermead Post-Concussion Symptoms Questionnaire (RPQ). The symptoms assessed include headaches, dizziness, nausea, light/noise sensitivity, fatigue, depressed feelings, and poor concentration. The researchers found that the number and severity of PCS symptoms reported at

times-one and two were significantly correlated with pain catastrophizing scores; a strong, positive correlation (r = .63) existed between a high PC-scale score – indicating a catastrophizing coping style – and more severe and numerous PCS symptoms at times one and two.

The present study will examine whether a PC coping style exists in students at a university in Ontario who are receiving academic accommodations for their concussion. This will be coded for inductively; that is, rather than probing students about pain catastrophizing in a predetermined and explicit manner, this research will explore whether catastrophizing emerges without probing. This will provide stronger evidence for the existence of PC coping styles if such themes indeed emerge in the sample under study. The goal is to gain an adequate understanding of the lived experience of students, which might not be possible by relying solely on predetermined codes or standardized quantitative questionnaires.

Due to the transition to online learning and changed learning platform (i.e., increased screen time, predominantly online classes), it is worth exploring whether some students might exhibit catastrophizing, since this coping style has been consistently linked to a worsening of concussion symptoms. As highlighted by Chaput et al. (2015) above, if catastrophizing emerges as a common theme in the present study, it might be contributing to some of these students' present-day concussion symptoms. These findings may then point to both a promising avenue for treatment and a means for enhancing equitable access to education in the post-secondary setting. For example, it would be worthwhile for accessibility service coordinators and university counsellors to collaborate in both screening for the existence of PC coping styles in students post-concussion in a more predetermined manner; perhaps they could then attempt to mitigate this coping style by enhancing more adaptive coping styles.

Support. Research has consistently revealed that in terms of individual health outcomes, interpersonal factors – which often relate to the existence of strong relationships – are as essential as actual health behaviours in terms of facilitating and maintaining long-term health (Bannon et al., 2020). Interpersonal factors refer to the availability and functioning of interpersonal relationships and encompass both structural and functional factors. The structural factors are "the existence of and interconnections among interpersonal relationships" (e.g., relationship status, social support, quality of social contacts). Functional factors are the "positive or negative aspects of interpersonal relationships" (e.g., relationship conflict, communication, intimacy). Both structural and functional aspects of relationships predict the onset and the progression of chronic illness, illness adjustment, and disability. For example, Bannon et al. (2020) note how there is a 50% reduction in mortality that can be attributed to interpersonal factors alone – e.g., marital status (i.e., married), frequent social contact, and high levels of perceived social support. This was found even after accounting for initial health status, age, gender, and disease type.

In terms of concussion more specifically, the study of interpersonal factors can inform researchers and provide an explanation for the variety of outcomes post-concussion (i.e., those who recover quickly vs. those who go on to experience chronic symptoms; Bannon et al., 2020). For example, research has found that social isolation, relationship strain, and psychosocial deficits often occur following brain injury (i.e., in ~60% of cases; Bowen et al., 2009). These relational factors have been found to predict long-term concussion outcomes – mood disorders, migraine, fatigue, and physical pain – at a similar magnitude as initial symptom severity following concussion (Bowen et al., 2010).

The above studies relating to interpersonal factors and concussion outcomes can be used to optimize concussion recovery by helping individuals recovering from a concussion to build or maintain a strong and supportive social network (Bowen et al., 2010). This can be facilitated through various means, including educational workshops, families or couples therapy, or by involving family members and significant others with treatment. Indeed, when significant others are included in the patient's treatment program, better post-treatment inter-individual and intra-individual improvement is found when compared to individually administered treatments (i.e., treatments involving the patient alone). This typically manifests as lower levels of relationship strain and higher levels of relationship satisfaction and intimacy post-treatment, and with improvements to coping, treatment adherence, and health outcomes over time (Bowen et al., 2010). Ultimately, these studies highlight the importance of focusing on the social context – and the variety of individuals with whom the concussion sufferer interacts on a frequent basis – in facilitating concussion recovery. For students post-concussion, this might look like including faculty, counsellors, other students, and the student's family members in the treatment protocol and accommodation process. It is anticipated that if students have well-developed social networks and an adequate level of perceived social support, they will feel more comfortable in receiving academic accommodations for their concussion symptoms and may benefit more from the positive health outcomes of this social support (thus performing better academically).

Chapter 3: Method

Design

A qualitative design, using both content analysis and Interpretative Phenomenological Analysis (IPA), was used in analyzing the data in the present study. The data was collected in September of 2021 during the COVID-19 pandemic. The timing of this study created a recency effect: students tended to discuss their experiences with AE in the context of online learning as opposed to their experiences with academic accommodations in relation to in-person learning.

Due to the sparsity of research on post-secondary students with concussion who are receiving academic accommodations in the context of the pandemic, the inductive approach used, which was guided by IPA, was an appropriate method for this population. Implementing questionnaire measures – or predetermined coding schemes – to assess the effect of concussion on the accommodation process for post-secondary students might have resulted in overlooking important consequences of the concussion sufferer's experience. It is important for researchers to first grasp an adequate understanding of how post-secondary students understand and perceive their concussion experience as it relates to the academic accommodation process; it is only once this is better understood (i.e., by "giving voice" to this population) that researchers will be more adequately situated to construct well-informed, objective questionnaire measures in this realm. Ethics approval was received from the Research Ethics Board in August 2021.

Theoretical Frame and Qualitative Analysis. There are a variety of models of disability; Smith, Woodhead, and Chin-Newman (2021) provide an overview of commonly discussed models of disability in the literature. The social model of disability contends that society itself is the disabling barrier. The medical model focuses on symptoms and internal deficits, and views the individual with the disability as in need of "curing" and emphasizes "proof" (Oliver, 2013).

Although competing theories, they together account for the multidimensional nature of disability. In my view, there are benefits to acknowledging that individuals with disabilities do experience real physical impairments; however, it is also important to address the ways that social environments can exacerbate these impairments.

Critical disability theory is the model used to orient the present study. Critical disability theory challenges the ableist assumptions that shape society. It posits that disability is socially constructed, and consists of the relationship between the impairment, the individual's response to – and lived reality of – the impairment, and barriers that exist in broader social structures. According to this model, barriers that exist in institutions are discriminatory. Critical disability theory challenges approaches that serve to pathologize physical, mental, and sensory differences as being in need of correction, and it opposes notions of disabled people as victims who should adjust to the world around them. On the contrary, critical disability theory advocates for accommodation and equity for individuals with disabilities in all domains of life (Reaume, 2014; Oliver, 2013). The aim of critical disability studies is to work towards universal accessibility, and to scrutinize existing barriers in education and employment that serve to pathologize, confine, and ostracize individuals living with disability (Reaume, 2014).

Interpretative Phenomenological Analysis (IPA). The analysis of the interviews was inductively driven using Interpretative Phenomenological Analysis (IPA). IPA is a research methodology rooted in phenomenological and hermeneutic analysis (Alase, 2017). Husserl (1931), the originator of the phenomenological approach, explains that the goal of phenomenological research is to "…understand the context of the lived experiences of people and the meaning of their experiences." Using IPA, the subjective nature of the participant's perception of objects and events is given precedence over an objective analysis. Van Manen

(1990) is a hermeneutic theorist who highlights the importance of interpreting and making sense of the lived experiences of individuals in a manner that captures their own subjective reality. Integrating the above two theories into a single approach results in the two key stages involved in IPA: (1) first, the participant grapples with interpreting his or her own world, and (2) the researcher aims to make sense of and adequately understand the participant's interpretation of events through detailed accounts, in such a manner that aligns with the participant's own subjective experiences. More specifically, during analysis, the researcher strives to first understand the lived experience of each participant, which is followed by the development of a critical, questioning stance of each case through "distancing" (Benner, 1994). Although IPA has maintained its original phenomenological goal of fully grasping the "lived experiences" of participants, at present, the approach has been modified to enhance its applied – or every day, real-world – impact. The IPA approach is most frequently used in health psychological research with samples consisting of patients who experience chronic illnesses.

During the IPA analysis, emergent themes were coded. The goal was to find congruencies and incongruences in the data. The focus was on finding broad, meaningful patterns, as opposed to examining individual words / smaller units (Benner, 1994). This coding of emergent themes – rather than relying on a predetermined coding scheme – was especially important due to the nature of the population under study. Since students in the post-secondary setting receiving academic accommodations for concussion have not yet been studied extensively, the goal was to gain an adequate understanding of their lived experiences as opposed to attempting to "fit" student narratives into predetermined coding schemes.

Using the IPA method, research typically follows a sequence of steps. Following the initial interview and transcribing process, the first step is to develop a coherent and plausible

account of the meaning of the data (Larkin & Thompson, 2012). This was accomplished through line-by-line coding and commentary within the data, which allowed for emergent themes to develop. Next, in order to represent these themes succinctly for the reader, a summary table of participant themes was developed. This table functioned as the basis from which the narrative segment and analysis sections of the report were written; here, direct participant quotes were provided to exemplify what mattered to participants and ultimately what these events meant to participants (Larkin & Thompson, 2012). The researcher's own interpretative account was supplemented with the interpretation of meaning provided by the participant. An additional researcher also reviewed the interpretations during the write up of the final report in an effort to verify the plausibility of the researcher's interpretive account.

Benner (1994) also provides an in-depth overview of three commonly employed narrative strategies used in IPA research: paradigms, thematic analysis, and exemplars. Paradigm cases refer to "strong instances of concerns or ways of being in the world." Paradigm cases were developed early on in the analysis as a way to enhance the researcher's understanding of the data. A paradigm case consisted of the cases that the researcher understood the most clearly, along with the cases that the researcher was the most puzzled by. The first paradigm case – once analyzed – was then used as a standard for comparison from which subsequent cases were examined: "the practical world of one paradigm case creates a basis for comparison of similarities and differences with other paradigm cases." Paradigmatic cases enhance one's understanding of how – and in what context – a phenomenon occurs. Next, a thematic analysis was conducted across multiple cases to find congruencies and incongruencies in the data. Finally, exemplars were extracted from transcripts in order to demonstrate aspects of paradigm cases and major themes. In interpretative research, exemplars substitute for "operational" definitions, and

the aim is to develop a wide range of exemplars. Each exemplar adds nuances and qualitative distinctions that were not evident in previous exemplars; this allows the reader to recognize the distinctions the researcher is making that might transcend traditional definitions of thematic names and categories.

One rationale for using the IPA approach within the present study was that this approach is a commonly employed method in health psychology research, particularly in empirical work aimed at understanding illness experiences (Shaw et al., 2014). The IPA method is commonly used in research aimed at understanding illness experiences as this method allows for the collection of rich data and gives voice to participants – two important features often missed through the implementation of large-scale surveys. The concern of IPA research – in terms of its emphasis on the in-depth exploration of lived experiences – helps to define the types of questions that are suitable for an IPA study. Some examples of types of research questions that have been studied using the IPA approach are: What is it like to experience a heart attack? How do young people experience the transition from high school to college or university? What forms of social support are helpful to people in pain? (Smith, 2011; Pietkiewicz & Smith, 2014).

Although quantitative studies can be useful for certain purposes in exploring accommodations post-concussion, these approaches are not able to adequately capture the aforementioned unique lived experiences of participants. The idiographic focus of the IPA approach, which relies on a "narrative style" or individual biographical interviews, is what enables participants' lived experiences to be captured in an in-depth and rich manner (Shaw et al., 2014). Ultimately, the type of data derived through the implementation of an IPA approach allows researchers to more thoroughly understand the concussion sufferer's experiences in relation to accommodations post-concussion.

IPA in Health Psychological Literature. One example of the rich data that can emerge by employing an IPA methodology in health psychology research is presented in an article by Brooks et al. (2015). In this article, the researchers explored the lived experience of adults using prescription opioids to manage chronic non-cancer pain. The researchers were responding to a gap in the literature, reporting that the effectiveness of prescription opioids in treating chronic non-cancer pain (CNCP) is often studied through quantitative research methods. However, these methodologies miss the lived experience of patients who are using prescription opioids to treat CNCP – especially in terms of the effect of this medication on the daily lives of patients. To address this gap, the researchers conducted nine qualitative interviews on adults who were users of daily prescription opioids for CNCP. An IPA approach was used in analyzing the results. Six major themes emerged that were both positive and negative in nature. The researchers concluded that, although there were recurrent negative themes (e.g., sociocultural) reported by daily users of prescription opioids, the positive effects (e.g., reduction of physical pain) outweighed the unpleasant effects that this medication wrought. This is one example of the unique data that can arise from the IPA approach that quantitative approaches overlook.

A study conducted by Hefferon, Grealy, and Mutrie (2008) provides another example of how the IPA method uniquely captures the lived experiences of participants and provides in-depth, rich data in health psychology research. In this article, Hefferen et al. (2008) explored whether women with breast cancer experienced post-traumatic growth (PTG). They additionally implemented a group-based physical activity intervention to see whether this had any additional effects on PTG. An IPA approach was employed, both to understand these women's perceptions of their PTG and to more fully capture the lived experiences among women post-breast cancer diagnosis in general. Open-ended interviews with 10 participants were conducted, and major

themes relating to overcoming adversity were coded during analysis. An "exploratory coding" process was used wherein the researchers engaged in line-by-line review of the data, "focusing on description and content followed by language use and finally questioning the underlying meaning behind phrases and accounts of experiences." Each transcript was then analyzed for emergent themes, which were further collapsed into a "master list" of overarching participant themes. The researchers found that the group exercise program was successful in instilling PTG in women with breast cancer; many viewed the program as a "safe space," "positive support system," and "savior."

This article by Hefferon et al. (2008) demonstrates the rich nature of the data that can be gained through the IPA method. For example, in the article, there are many instances where participants do not explicitly communicate certain themes/use specific language (e.g., "savior"). However, the researchers are nonetheless able to – through an interpretative process – come to a consensus that a particular theme/word seems to accurately reflect the participant's experience. Given the scarcity of research in the area of concussion and academic accommodations in the context of the COVID-19 pandemic, this in-depth interpretative analysis provided rich data that would likely have remained overlooked using more explicit analytical methods and quantitative approaches.

A final example of the IPA method implemented in health psychology research comes from a study by André-Morin, Caron, and Bloom (2017). This study uses an IPA method to explore five university athletes' experiences with post-concussion symptoms, and in particular, the factors that impeded vs. facilitated their recovery. All participants in the study received medical clearance to return to sport prior to the start of the study. The unique challenges that participants faced post-concussion while competing in university sports were examined

inductively; the most frequently cited challenges included emotional responses (e.g., depression, anxiety, attempted suicide) along with reduced academic performance. Participants also reported the various types of support that they received post-concussion. This support was both informational and emotional in nature and was provided by their coaches, doctors, athletic therapists, and parents. This support was cited by participants as integral to facilitating their recovery. Overall, this study provided in-depth, detailed descriptions by participants of their unique lived experiences of being a university athlete experiencing protracted concussion symptoms.

Ultimately, the above study highlights the detailed, rich, and unique information that can emerge through implementing an IPA approach; by focusing on participants' realities and the subjective meanings that they attach to their concussion experience, a rare and in-depth look at their inner world of experiences is seen. This information can then go on to inform concussion protocols and can also ensure that appropriate emotional and academic supports are in place for participants to facilitate recovery. Given the similar sample of participants in the current study (i.e., students experiencing protracted concussion symptoms), the IPA method enabled the same type of unique, rich, and in-depth data to emerge, which was evident in the aforementioned studies. It is hoped that this information can then be used in an applied manner to facilitate recovery and appropriate academic accommodations for students.

Procedure

Nine students registered with Accessible Education (AE) were contacted for participation in this study. The two eligibility criteria were: (1) participants must have been diagnosed with one or more concussion(s) within the past two years; (2) participants must have been receiving

academic accommodations for reasons directly relating to their concussion (i.e., in the case that the student is registered with more than one disability, concussion must be the "principal" disability reported). As compensation for their participation, all participants received a twenty dollar ($20) electronic gift card at the end of the interview.

The present study consisted of semi-structured interviews conducted via Zoom. The semi-structured interviews consisted of a range of questions relating to students' experiences in receiving academic accommodations in the post-secondary setting during the COVID-19 pandemic (see Appendix A). Prior to the day of the interview, participants were contacted by email to ask if they needed any accommodations during the interview (e.g., breaks, two shorter interviews). Once participants provided their informed consent by signing the relevant consent forms, the participant completed the approximately hour-long interview via Zoom, with any requested accommodations put in place by the interviewer. The interviewer used probes to gain additional knowledge and insight relating to the participant's concussion experience in relation to their academic accommodations throughout the interviews.

The data from the interviews was supplemented with information relating to the participant's concussion history (i.e., time since injury, duration of symptoms, number of concussions sustained) and with participant demographic information.

Stigmatization was assessed as a component of the interviews. Rather than explicitly asking participants about whether they have experienced felt-stigmatization from their classmates, professors, and peers (e.g., including a self-report measure relating to stigmatization), participants were asked *general* questions relating to their experience of stigmatization throughout the interviews, including: "Did you experience any barriers during the process of registering with AE?"; "How did your peers respond when they found out that you

were registered with AE?"; "Did you feel that your professors were understanding of your need to be accommodated post-concussion?" and as a more general follow-up probe, "What was that like for you?"

Asking about general barriers to receiving academic support enabled researchers to explore whether stigmatization emerged as a thematic category. This approach was a more powerful way of examining stigmatization compared to more explicitly-framed questions; that is, if stigmatization emerges without explicitly asking and probing participants directly, it will be clear that felt-stigma is an integral aspect of participants' experience with the accommodation process post-concussion. Ultimately, the rationale for examining stigmatization in the realm of academic accommodations post-concussion is twofold. First, due to the findings of the past research on stigmatization experienced by students post-concussion described above (i.e., Zaussinger & Terzieva, 2018); second, due to my own personal experiences in receiving accommodations for concussion during my undergraduate degree (which is outlined in more detail below).

Once the interview was completed, the interviewer undertook to debrief each participant. During debriefing, all aspects of the study were discussed in detail. The participant was provided with a debriefing form (via email), which was discussed verbally with the participant. The form outlined and explained how the researcher was planning to analyze the collected data and provided contact information in case participants had any further questions about their participation in the study. The form also included an invitation to receive the final results of the project. Finally, the participant was provided with a list of mental health services accessible in the London area, so that participants who felt upset or distressed after the study could discuss their feelings with a qualified mental health provider.

Materials

All interviews were audio-recorded in their entirety, and transcribed by the student investigator. Transcripts were coded using the inductive coding methods described above.

Ethical Considerations

The student researcher successfully completed the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS2)* course prior to commencing the study. Possible ethical considerations and their mitigation are described below. The first issue that was considered by the research team relates to the private, sensitive information that was to be shared by the participants. Since participants were drawing on their own personal experiences with concussion and academic accommodations, it was necessary for the investigator – both during the interviews along with data coding and analyses – to be aware of the sensitive nature of this data. It was the researcher's responsibility to understand that disclosing such personal narratives can be an emotionally taxing task; therefore, the researcher took the necessary steps to ensure that interviewees did not experience undue discomfort. The consent procedures, data collection process, and the debriefing that occurred were all been planned with the above issues in mind. Part of this process involved making clear to the participants – both verbally and in writing – that they are not required to answer all of the interview and questionnaire questions if they become overwhelmed or uncomfortable.

An additional issue related to the sensitive nature of the data is the privacy and confidentiality of participant information. The student investigator took precautions to ensure that all files and/or documents that contain personal/sensitive information were kept on a password-protected computer. In addition, to ensure that participant anonymity was preserved,

any identifying information revealed by the participants during the interview was changed during the transcription process.

The final risk related to the potential exacerbation of symptoms in participants who may still be symptomatic. It was possible that some participants who were still experiencing symptoms such as light sensitivity, difficulty concentrating, or headaches, might become overwhelmed by the length and activities involved in the study. In particular, since the interviews were be conducted via Zoom, the screen time involved may have resulted in a worsening of symptoms for some participants. There were two measures in place to mitigate this risk. First, prior to the day of the Zoom interview, each participant was contacted via email to ask whether they needed any accommodations (e.g., an option for a phone interview, breaks). Second, participants had the option to complete the study on two separate occasions if they anticipated that completing the study in one session might not be manageable.

The potential benefits of the research were described to participants as follows. First, this research gave participants an opportunity to have their express their viewpoints heard concerning their struggles to receive academic accommodation for their concussion symptoms. This empowered, and gave voice to, individuals whose concerns may not have been acknowledged in a non-judgmental context. In addition, since commonly employed concussion assessments consist of self-report questionnaires where patients are required to check off predetermined boxes in relation to their concussion experience (O'Rourke et al., 2017), the research team hoped that the semi-structured nature of the interview might provide participants with a sense of liberation. The open-ended nature of interview allowed participants to tell their unique story relating to their concussion experience the way that they see and interpret it.

Reflexivity

In any study applying a qualitative analytical method, the researcher becomes the research instrument, and as such the interpretation of the data will inevitably be influenced by my own experiences, beliefs, and assumptions. Since a large proportion of the analytical process involves my own subjective interpretation (e.g., the inductive development of new thematic categories), it is necessary to ensure that rigour is maintained throughout the entirety of the research process. The first step to ensuring this rigour is through acknowledging and addressing how my prior experiences have shaped my perspective on the topic of academic accommodations for individuals with concussion.

My position on this topic of enquiry has been especially shaped by my own prior experience with concussions. Six years ago, within a period of two months, I sustained two concussions while playing sports that left me with severe concussion symptoms persisting for over a year. Throughout the first and second years of my undergraduate degree, I was registered with accessibility services for reasons directly relating to my concussions. I experienced first-hand what it was like to register for and receive academic accommodations for a concussion. I can recall experiences where I felt "less than" for requiring accommodations; for example, there were times when I felt like I did not deserve a given grade since I had received extended time on an exam. When I initially registered with accommodations, I remember feeling like I needed to keep quiet about it. There was an ongoing worry related to what my professors and classmates would think of me for needing extra support (i.e., perhaps they would question my abilities), which is in line with the "felt-stigma" outlined in the above literature review. In addition, I can recall the most helpful and influential person who was involved in the accommodation process:

the counsellor at my university, who was always supportive and understanding, and who readily provided me with any concussion-related accommodations that I needed (e.g., reduced lighting).

Although this above experience will likely shape the lens with which I conduct interviews and interpret the data, I will employ two measures to ensure that rigour is maintained throughout the research process. First, completing weekly analytic memos following all interviews will enable me to engage in frequent mini analyses, reflecting systematically on what I am seeing (and not seeing) in the data. This will provide an opportunity to critically reflect on what has influenced my coding decisions, such as certain assumptions or motives that may be interfering with an objective analysis. These memos were reviewed by my supervisor before I continued data collection. Second, my supervisor provided critical feedback about my interpretation of the data on an ongoing basis. The above measures helped to reduce the extent to which my personal biases interfered with my interpretation of the data.

Implications for Post-Secondary Institutions

Ultimately, the current project aims to enrich the body of lived experience research on university students who have sustained a concussion, and to amplify the voices of such students. The results relating to pain catastrophizing, in particular, may have applied implications in post-secondary institutional settings. For example, the results may enable accessibility service coordinators and university counsellors to collaborate in screening for the existence of PC coping styles in students post-concussion. For those students who exhibit this coping style, attempts might then be made to mitigate catastrophizing through using a cognitive therapeutic intervention. In addition, results from the thematic analysis more generally may uncover certain areas of the academic accommodation process that need to be reworked and adapted in order to better meet the needs of university students post-concussion. This is of particular importance due

to the changes to accommodation that have resulted due to the COVID-19 pandemic; however, the pre-COVID-19 accommodations process may also need to be reworked and adapted to better meet the needs of students post-concussion. Ultimately, the hope is to mitigate felt barriers and obstacles involved in the process of obtaining academic support, so that truly equitable access to education – as outlined in the AODA – can become a reality in post-secondary settings.

Chapter 4: Results

Demographics. Nine individuals (eight female) aged 19 to 23 years, who had sustained concussion(s) within the past three years participated in this study. A summary of demographic information is presented in Table 1. All participants were undergraduate students attending a large comprehensive university in Ontario. Seven participants were registered in full-time studies, and two participants were registered in part-time studies. Three participants were registered with Accessible Education (AE) prior to the transition to online learning. For the participants who were not registered prior to the transition to online learning, the most common reason cited was due to not attending university at the time. Two participants sustained one concussion, one participant sustained two concussions, one participant sustained three concussions, and the remaining five participants sustained more than three concussions. Seven of the nine participants had been experiencing concussion symptoms for more than a year, and two participants had been experiencing concussion symptoms for less than a year. One participant sustained their concussion as a result of a fall, three participants sustained their injury as a result of a motor-vehicle accident, and five participants sustained their concussion while playing a sport. Four participants lived with their family during their studies.

Emergent themes. Four superordinate themes and twelve subordinate themes emerged during analysis. Table 2 provides the emergent narrative variables framework and associated definitions. Table 3 is presented at the end of the results section, and is a list of the themes, along with indicative quotes and number of cases that each theme emerged in.

Institutional Factors

An Inconsistent Delivery. This theme related to the provision of academic accommodations and support for participants from both faculty and counsellors at AE, and

Table 1

Summary of Study Sample Demographics for Nine Cases.

Case	Gender	Age	Year of Study	# of Concussions Sustained	Context of Concussion	Symptom Duration	Date of Last Concussion	Registered with AEW prior to online learning	Disability Type	Living Arrangements
1	Female	20	3rd, FT	2	MVA	1 to 3 months	July 2021	No	Temporary	With Family
2	Female	20	3rd, FT	>3	Sport	>1-year	Feb. 2020	No	Permanent	Not With Family
3	Female	19	2nd, FT	>3	Sport	>1-year	Oct. 2018	No	Permanent	Not With Family
4	Female	19	2nd, FT	>3	Sport	>1-year	Oct. 2018	No	Permanent	Not With Family
5	Female	21	4th, PT	1	MVA	>1-year	Aug. 2021	No	Temporary	Not With Family
6	Female	20	2nd, FT	1	MVA	>1-year	Sept. 2019	Yes	Permanent	With Family
7	Female	20	3rd, FT	3	Sport	>1-year	March 2019	Yes	Permanent	Not With Family
8	Female	23	4th, FT	>3	Fall	>1-year	Jan. 2019	Yes	Permanent	With Family
9	Male	19	2nd, FT	>3	Sport	7 months to 1 year	March 2021	No	Temporary	With Family

Note. FT = full time studies; PT = part time studies; MVA = Motor Vehicle accident.

Table 2

Emergent narrative variable framework and associated definitions that emerged during qualitative content analysis

Narrative Category	Narrative Variables	Definition
1. **Institutional Factors**	An Inconsistent Delivery	Provision of optimal accommodations were dependent on the student having a triad of variables in place: (a) institutional support, (b) moderate to high levels of resourcefulness, and (c) a general state of mental wellness (i.e., minimal signs of depressive / anxious symptoms).
	Accommodations Process	Relates to the various obstacles that students faced in the process of becoming registered with AEW. This included structural barriers, such as the lack of a streamlined process (i.e., the back and forth between AEW and multiple healthcare practitioners) and the lack of a concussion-specific form; and physical barriers (e.g., headaches) that became exacerbated by the screen time that registration required.
2. **Learning and Assessment**	Synchronous Structure	Relates to the predetermined set schedule for online "live time" courses, along with the set limit on time spent watching lectures due to the live nature of such classes. Benefits include the ability to have one's day structured; drawbacks include an inability to pause, rewind, and take breaks.
	Asynchronous Autonomy	Refers to the independence and control over coursework that students are granted when courses are uploaded online as versus live. Benefits include the ability to pause, rewind, take breaks, and complete coursework depending on symptom severity; downfalls include a lack of structure and felt pressure.
	Test-taking Turmoil	The stress, anxiety, and concussion symptoms that emerge during test taking in an online environment; higher levels of stress and anxiety tend to emerge when (a) stringent proctor track settings are used and (b) when tests are "linear" in nature.

Table 2 continued

3. **Social Factors**	A Balancing Act	Refers to the delicate balance of academic and social energy expenditure that occurs post-concussion due to diminishing levels of cognitive and physical energy reserves; results in impaired social life due to available energy focusing on the academic realm. Strategies to overcome include various activities aimed at "recharging" energy reserves.	
	Support	Refers to the availability and functioning of interpersonal relationships, and encompasses both structural factors (e.g., relationship status, social support, quality of social contacts) and functional factors (e.g., relationship conflict, communication, intimacy; Bannon et al., 2020).	
	Felt Stigma	Relates to the feelings of embarrassment, shame, and the ongoing worry of what professors, classmates, and / or peers would think of the student for needing extra support absent any objective evidence of stigma (Scambler, 1998).	
	Enacted Stigma	The experience of being treated unfairly by others as a result of one's concussion; for example, the judgement by others that one has an unfair advantage due to their academic accommodations (Scambler, 1998). Typically arose as the result of (1) Lack of concussion knowledge; (2) An incompatible experience with concussion (i.e., speedy recovery time).	
4. **Individual Factors**	The Changed Self	The changes in self-concept that emerge post-concussion specifically relating to (a) the desire and ability to integrate with peers socially, and (b) one's abilities and motivation to succeed in the academic realm.	
	Catastrophizing	The "future talk" that emerged while students worked to accept that their planned for future may look different than they had previously hoped-for, both employment-wise and relationally, as a result of their concussion(s); Emerged on a continuum ranging from a positive, growth-oriented and adaptive mindset, to a catastrophizing and self-defeating mindset (e.g., rumination, magnification, helplessness).	
	Resourcefulness	The ability to use positive self-instructions, creativity, and apply problem-solving methods to (a) cope with difficulties (b) to regulate and minimize the negative impact of concussion symptoms on academic and social functioning (Kennett et al., 2008; Li, Theisen, Seo, & Sibley, 2018).	

emerged as a result of the differences in accommodations provided across participants. The provision of what students felt were optimal accommodations was found to be dependent on the student having a triad of variables in place, some of which students had little control over: (a) institutional support, (b) moderate to high levels of individual resourcefulness, and (c) a general state of mental wellness (i.e., minimal signs of depressive / anxious symptoms).

The first way in which the differences in accommodations manifested was found to be related to the type of accommodation received by students. The types of accommodations administered to students varied. The most commonly cited accommodations were as follows: extra time on exams (time and a half or double time); breaks during tests and exams (ranging from 10 minutes to 30 minutes of break per hour of test / exam); note taker; permission to record lectures; individual room for tests with reduced lighting (when in person); no more than one exam per day; and flexibility with deadlines. The differences experienced by participants in accommodations seemed to result predominantly from students not being aware that certain accommodations existed. For example, in terms of breaks during tests, P6 explains how this accommodation was very helpful for her:

> **P6:** *Having that extra time on exams is really helpful because I can take breaks. Like, I can walk away from my computer and like chill, and take my brain down from a level 10 to like a level 8 [pain rating] and be able to do what I need to do again.*

P3, on the other hand, struggled with exacerbated concussion symptoms due to not having accommodated breaks during tests and exams. Although P3 also had accommodated extra time, she explains how she did not have permission to get up and take a break, and that this prevented her from making the best use of her accommodation.

> **P3:** *Last year, my last exam was psychology, and I had like six hours for it [accounting for extra time]. And of course, I'm going to use every second of it. But I wish I had breaks to go clear my mind, to go and do a handstand like, I don't know, just something to reset without taking up the time that I'm given for the test. It's just, like, a long period of time to*

*just be sitting there…I would have to give up and say this is the best I can do because my
brain would be like, no, it's not happening.*

Although P3 had accommodated extra time for her tests and exams, this accommodation became
less helpful – and seemed to worsen her performance as evidenced by her "giving up" – without
the extra breaks that other students were provided.

In terms of institutional support, many students felt that whether or not they were well-
accommodated was dependent upon the efforts of individual professors within each of their
courses.

> **P2:** *For me, [whether I felt supported] depended on the professor. Some of them I felt
> super supported… [One of P2's professors] He really understood. He would ask me,
> "how are things going with you in this class?" Like, "is there anything that you need?"
> He's like, "If you find that you can't do something for certain weeks, just let me know."
> Some of the other professors I found kind of just did the bare minimum. So they were like,
> "You need this [accommodation], okay, that's all you get." But he was one who really
> went above and really helped out.*

P2 went on to explain how one of the requirements in many of her courses was to read an online
textbook, and to answer questions based on the chapters that had been assigned. The format of
online textbooks was a common format for all nine participants; for some courses, hard copies of
the textbook were not readily available, or were not available at all. P2 explains how the
aforementioned "extra-supportive professor" went the extra mile in accommodating her when an
assignment required reading and answering questions based on an online e-textbook:

> **P2:** *…that assignment I found super difficult just because it's reading and trying to
> concentrate and understand what I'm reading. It was online, and I was having to post like
> six [answers] per chapter, and there were like 13 chapters. So I had talked to [my
> professor] about it and he was like, honestly, if you do three questions – or if you do two
> of them - that's fine.*

Other participants did not feel this same level of support from professors. This was most evident
in those participants who did not have the same level of comfort in asking for additional support
from their professors. This was evident for both in-person and online classes. In the case of P8,

she explains how one professor went above and beyond in readily providing her with

accommodations, but that this was not the norm. She explains the process of asking one of her

professors in person for permission to record their lecture, and how it made her uncomfortable:

> **P8:** *... It was a little bit nerve wracking, especially like having some anxiety issues. It was like, "Hi, I have a concussion. Am I allowed to record your lecture?" And he was like, "Yes, totally. Like do whatever you think you need. Like, if you need someone to send you the notes and you can't be in class, I will find someone to do that for you." But I found that typically, my professors were more like "My lecturers are my intellectual property, and you can't record them without my permission" type of thing.*

P8 went on to explain the effect that this type of unsupportive response had in terms of her

motivation and level of comfort in attending classes in the future:

> **P8:** *So, like when I did have the concussion, I kind of just stopped going to those specific classes and I just found someone to give me the notes.*
> **Interviewer:** *And why do you think that was? Was it a feeling of just not being understood?*
> **P8:** *Yeah, it was kind of more like not being understood and not feeling like I was supported by that professor. So it just wasn't worth it to you to kind of go provide them documentation and say, this is why, and…Yeah , I kind of felt like it was too much of a fight.*

This lack of instructor support appeared to affect motivation and performance in courses beyond

the course in which the student felt unsupported. P7, for example, made an active effort to email

her professors at the beginning of each term, to ensure that her accommodations were set up and

accurate. P7 explains how she was not always met with a supportive response:

> **P7:** *Sometimes when I email the professors, I get kind of, not like snarky, but it's kind of "Yes, you will be accounted for." Like "you're not going to be forgotten about." It feels kind of like I'm taking up their time when I email them. Whereas sometimes I have a professor that is like, "don't worry about it!! Thank you so much for emailing me. Let me do the rest. Thank you for reaching out and kind of allowing me to know who you are, and that you have this accommodation." So it just depends professor to professor. It's nice when the professors are accepting and wanting to help rather than me feeling like I'm just kind of taking up their time if that makes sense.*

P7 goes on to explain how unsupportive responses bring into question whether having accommodations is even worth the hassle at all:

> **P7:** *It kind of makes me feel like a nuisance almost, and kind of just like…do I need to be requesting these accommodations? Do I even need these if it's going to be this much of a hassle? Which obviously I do. But just – when they're not very open to it, it makes me feel less legitimized if that if that makes sense.*

Online courses raised another issue related to inconsistent delivery of accommodations, that related to financial barriers. All participants reported screen time as a major trigger for symptoms such as headache, fatigue, and an inability to concentrate. As a result of this common symptom trigger, students were required to problem solve in order to reduce the amount of time that they spent on screens. Unfortunately, as P4 explains, hard copies of textbooks (when they were available) tended to be expensive.

> **P4:** *Online textbooks are a big problem for me because reading fine print on a screen is really difficult. And then to get the physical copy of the textbook, it's sometimes like $150.00 more expensive, and I can't afford that. So I have tried to reach out. I've reached out to AE, I have reached out to multiple people, asking if there would be any way for them to help me cover the cost of either physical textbooks, or using a printer at university on campus. But they said "that's not possible." So that was a little frustrating… there wasn't really much option for getting off of screens. And that was where my main issue lies.*

In contrast to P4, P3 fared much better in terms of reducing her screen time – and concussion symptoms in turn – as a result of her financial situation.

> **P3:** *I print everything. I have a fancy printer. I paid five hundred dollars for it, so that it wouldn't have ink on it [laser printer]. I have to print everything. I have, like, it's such a waste because it's so environmentally unfriendly. But I had to print yesterday my slides for an assignment because I can't read it on the screen. I pay so much for textbooks even though it'll be like two hundred dollars just to have the online one, and then an extra fifty to go get that hard copy. But I cannot do it online. I can't.*

Evidently, although P3 was able to overcome the most commonly-cited barrier relating to online learning, not all students had the necessary financial resources to do so.

Accommodations Process. This theme highlights the obstacles students faced during the process of (a) initially registering with academic accommodations along with (b) remaining registered with AE when their documentation needed to be updated. Some of the obstacles reported by participants were: structural barriers, such as the lack of a streamlined process (i.e., the back and forth between AE and healthcare practitioners); the lack of a concussion-specific form; and physical barriers (e.g., headaches) which became exacerbated by some participants as a result of the screen time that registration required. Initial registration with academic accommodations required each student to have a form completed by a licensed health care professional (see Appendix B). This form requires confirmation (by a healthcare professional) of the student's diagnosis, the nature of the disability (i.e., temporary vs. permanent), along with the degree to which the disability affects physical, sensory, and cognitive domains. If the disability is classified as temporary, students are required to have the healthcare practitioner report on the anticipated duration that the students' symptoms will last. The designation of a temporary disability requires the student to update their documentation at the beginning of each new semester or when the end date for expected recovery has passed. Evidently, remaining eligible for academic accommodations is an iterative process for students who are classified with a "temporary disability" status. If a permanent disability status is selected, students are not required to update their documentation: their accommodations remain in place for the duration of their program.

In initially registering with AE, the student first contacts the office at AE, and sets up an initial appointment where they receive the "Documentation of Disability" form. They are next required to bring the form to a licenced healthcare practitioner to fill out the form. The form is then sent back to AE, who will either approve or deny the requested accommodations based on

the information documented by the healthcare practitioner. The most frequently cited obstacle

for participants related to (a) finding a licensed healthcare practitioner to fill out the form in its

entirety, and (b) receiving "approval" of the requested-for accommodations by AE. In line with

the former obstacle, students who did not have a family doctor had difficulty in finding a

qualified healthcare practitioner to fill out the form. This often resulted in a delay in the student

receiving the accommodations they required. As P2 puts it:

> **P2:** *Getting the accommodations for this year was a bit of a barrier. Just because I had to find a doctor who would take a look and listen to like my opinion on it [concussion symptoms], and sign forms for me, even though they hadn't been really treating the concussion.*

This excerpt typifies the experience of other participants who did not have a family physician, or

who were not actively being seen by a qualified healthcare practitioner. P1 describes the

stressfulness she experienced during her initial registration with AE, and the concussion

symptoms that the process resulted in:

> **P1:** *There were a lot of hoops I had to jump through…a lot of paperwork I had to fill out. A lot of phone calls I had to go on while suffering from my head. So doing a lot of things that were very stimulating. It was stressful because it did cause some headaches, because I was constantly worried about different forms I would need. Constantly going back and forth with my physiotherapist and kind of figuring out what I needed, and what she thought I would need, and making sure they [AE] would give me the accommodations.*

Participants noted additional difficulties in initial registration following the transition to online

learning. With this transition, registering with AE necessitated additional screen-time for

participants who were already struggling with screen-induced symptom exacerbation. P9

explains the difficulties he faced registering during the pandemic:

> **P9:** *When I first got my concussion, I couldn't look at my computer or anything without feeling nauseous – like a migraine coming on. So I was kind of struggling, or scrambling a little bit, to get into contact with them [AE] initially. But then I got my brother to email them like through my university account on my behalf. I think it took like kind of two or three months to iron out all of the details. They needed a timeline of my recovery, but I*

> *couldn't really give them one because I didn't know how long it would take for me to recover, or how severe my symptoms would be…that was a little bit frustrating.*

Although P9 was able to enlist support from a family member, not all participants had this option, which made the registration process for these participants difficult.

These obstacles were not evident in three participants who were actively being treated by a family doctor or a qualified healthcare practitioner. By contrast, these participants reported a prompt, streamlined process of registration with AE. As P3 explains:

> **P3:** *I just had that one paper for my family doctor [to fill out] and then… it all kind of just fell together.*

Similarly, P4 had a neurologist who was actively treating her at the time that she initiated the process of registering with AE:

> **P4:** *I had a good neurologist before who got sort of signed off…So when I first had my like my first appointment with accessible education, he was really good. I had a good experience with that.*
> **Interviewer:** *OK , so you felt kind of like there weren't any major obstacles there, just because you had someone in your corner - you had the neurologist who was able to help you out.*
> **P4:** *Exactly. Yeah.*
> **Interviewer:** *And then how long did it take for you to become accommodated once you kind of started the whole process of trying to register ?*
> **P4:** *Pretty sure it was like a couple of days. It was really fast.*

P4 experienced a straightforward process of registering with AE that was also evident in the other participants who had healthcare practitioners actively treating their concussion. For these participants, a streamlined process of registration allowed for the prompt delivery of academic accommodations.

All participants who were registered with a temporary disability reported difficulties arising as a result of asking their medical practitioner to create a timeline and end date for expected recovery, as required by the AE form. These participants voiced their frustration with the iterative process of remaining registered with academic accommodations. As P8 explains:

> **P8:** *[The process of registering] was a lot of back and forth kind of talking to the doctor again, then changing the timeline for expected recovery date when the deadline passed. And then in response to that, accessible education was giving you accommodations depending on what the doctor had said… Honestly, it was super frustrating. Like, I had to write everything down, like when I went to certain places, and who I saw, and what I was given in order to keep track of everything. It just, everything kind of sucked, and it was the fact that I had to keep going back to different doctors to get more accommodations.*

This excerpt typifies the experience of other participants who voiced frustration at needing to ask healthcare practitioners to specify a timeline for expected concussion recovery. Many participants felt that after the initial form was completed by a healthcare practitioner, it should have been up to the discretion of the AE personnel to extend accommodations for students on a case-by-case basis. This would have freed students from the need to submit multiple iterations of their forms, as the end date for recovery is extended. As P8 explains:

> **P8:** *They [AE] went off of the dates that the doctors wrote on the form, and not the fact that I was still experiencing symptoms. So if I was still experiencing symptoms, I had to go to a different doctor and get that date pushed back further.*

This is in contrast to students registered with a permanent disability status who were not required to update their documentation. For these participants, their academic accommodations were in place for the duration of their time at university, and they typically reported positive experiences with the AE registration process:

> **P7:** *My doctor just checked the box saying it was it was a permanent disability. So then he doesn't have to fill up the documents [again]. I have to say only good things about the process of registering with accessible education.*

Students with similar concussion histories – such as having sustained multiple concussions with symptoms persisting >1 year – noted very different experiences with AE as a result of being categorized with a temporary versus permanent disability status. For students registered with a temporary disability, the additional registration obstacle of updating documentation on a semester-by-semester basis to remain registered was evident. For these students, their healthcare

practitioners were required to select deadlines for students' recovery that often did not provide students with academic accommodations for long enough. Compared to other disabilities that have more concrete prognoses (e.g., a broken limb, learning disabilities, mental illness) concussions are unique in that concussion recovery is highly variable, making temporary vs. permanent disability status distinctions difficult to navigate. This inability to predict an end date for recovery added a layer to the registration process for these participants.

Learning and Assessment.

Synchronous Structure. Synchronous structure refers to the predetermined set schedule for "live" online courses, along with the set limit on time spent watching lectures due to the live nature of such classes. Overall, participants had ambivalent attitudes towards synchronous courses: there were clear benefits, but also serious drawbacks for all participants. In terms of the benefits, participants reported that having one's day structured ahead of time – and having a set schedule for courses – was beneficial. This seemed to be related to the lack of motivation that many participants experienced (possibly as a result of their concussion). As P2 explains:

> ***P2:*** *One of the things that happened with my concussions is I lost the ability to self-motivate. And I'm really bad at just making my time myself. So when I have an actual schedule that I have to follow in classes, I find that much easier to go and get it done and feel okay.*

P6 similarly explains her need for structure, but highlights a potentially negative aspect of synchronous online coursework, namely the time at which the course is scheduled, and the availability of rest breaks within these synchronous classes:

> ***P6:*** *...My brain needs structure. So like, even if my classes weren't synchronous, I would try and make them synchronous. One [synchronous] course I had, I didn't really mind because it was the one course of the day where I had to stay focused. And it was at 11am, so it wasn't too early, it wasn't too late. I had energy from waking up, and then after that course, I could take a break for a couple of hours.*

Overall, synchronous classes appeared less detrimental for symptom exacerbation when they were (a) scheduled in the morning when participants have the most energy, and (b) when they were able to set aside time after class to rest and recharge.

Many participants found the "human connection" aspect of synchronous courses to be a refreshing break from feeling cut off from other people during asynchronous online learning. Participants explained how when professors made an effort to make synchronous classes engaging, feelings of human connection became possible via online learning. As P3 explains:

> **P3:** *Last year, in the only synchronous class I had…I loved my professor. I loved, loved, loved her. And it was that human connection. You had to pay attention, you had to follow along, and you had to raise your hand. I felt like I had a connection with [my professor]. She knew me by name. And then we'd stay in office hours and I'd get to chat with my peers and with her. So that was like just an unusual circumstance, but it was the best.*

Other participants voiced similar feelings towards synchronous courses when professors made an effort to make classes interactive. However, if too many courses were synchronous, or if synchronous courses were scheduled later in the day when participants' symptoms tended to be worse, the net result for participants was exacerbation of symptoms.

The main drawback of synchronous courses included an inability to pause, rewind, and take breaks. Overall, participants felt a sense of pressure to continue watching synchronous lectures online despite symptoms due to their fear of missing course content. This was especially the case when professors did not post a recording of the live synchronous lecture following class. P5 typifies the experience of other participants, explaining how the inability to pause her synchronous online courses created difficulties for her:

> **P5:** *It can be hard because I can't pause it… It's hard for me to watch the screen for that amount of time, especially like if the lecture is like two hours long. I just physically can't be on computers that long. So I have to take a lot of breaks looking away, and I lose a lot of content that way. I get my brain fog a lot faster. So I can't last very long before I start getting quite confused in the online lectures.*

P2 similarly explains how the inability to pause online synchronous lectures creates barriers to learning, and worsens her concussion symptoms in turn:

> **P2:** *When you have classes that are like Zoom, I can't pause, leave and go take a break… you have to watch as they go through a slide show. And watching the screen while like slides are moving, I find that it's a lot for my eyes to look at and I get very…my eyes start to go back and forth and then I get headaches much quicker.*

Overall, participants were ambivalent towards synchronous online courses. On the one hand, this course format was positive in that participants had a structured schedule which helped those who found motivation a challenge post-concussion. The felt-human connection of in-person classes also became possible when professors made online synchronous courses interactive. On the other hand, when synchronous courses were too numerous, or when they were scheduled at a time when their symptoms were the most severe, participants struggled due to the inability to pause or rewind the lecture.

    Asynchronous Autonomy. Asynchronous autonomy refers to the independence and control over coursework that students are granted when courses are uploaded and posted online versus live. As with synchronous courses, students reported both benefits and drawbacks to asynchronous lectures. The most commonly cited benefits included the ability to complete coursework depending on symptom severity, and the ability to pause, rewind, and take breaks. P4 explains how the majority of her courses were asynchronous and that this was helpful for her; she could complete her course work depending on the severity of her concussion symptoms:

> **P4:** *Honestly, actually, online did make some things easier because I able to make my own schedule flexible so that I could do it based off of how my head was doing. So that was helpful. Like, sometimes my headaches are so intense…I can't work when it's like a bad migraine. So I could shift my schedule - that was honestly pretty good.*

Although the ability to control one's schedule was helpful for participants, the additional screen time required for asynchronous online courses created a barrier. Indeed, many participants

reported asynchronous lectures being longer than synchronous lectures, and additional required

online resources were often added for classes using this method of delivery. P7 explains how

professors could record lectures for "hours" when the format was asynchronous, creating

prolonged screen time and symptom exacerbation in turn. This is in contrast to synchronous

courses, where lectures were "scheduled for more limited time slots." P4 substantiates these

screen time related barriers of asynchronous classes when she explains:

> **P4:** *But still, I mean, everything is on screens, I think that was like the big issue. Everything kind of revolved around that. There's a lot of online resources like research articles and… like everything, like all of the labs, and all of the work, especially with COVID, has been converted to being online instead of handwritten. And that is a lot of screen time.*

Evidently, although the ability to control one's schedule was helpful, the added amount of screen

time required for asynchronous online courses created a barrier for participants. P5 echoes the

experiences of P4, explaining that although she found the ability to control her schedule and

work around her symptoms helpful, the increase in screen time necessitated by asynchronous

courses was a struggle:

> **P5:** *I did like the aspect of online learning that I could modulate how much I'm doing and when I'm doing it based on my symptoms. But I did find I was in pain more of the time… Screen time is really hard because that is my biggest trigger for headaches, brain fog and confusion.*

The flexibility of asynchronous courses helped participants in managing symptom exacerbation.

However, the increase in screen time required for asynchronous learning was consistently cited

as a barrier, which seemed to negate any benefit derived from having flexibility with course

work.

The ability to pause, rewind, and take breaks during asynchronous lectures was cited as a

benefit of the asynchronous format by all participants. P5 typifies the experiences of other

participants, explaining how the ability to pause lectures when she feels symptoms coming on

helps her to retain information from the lecture compared to synchronous courses where this is

not possible:

> *P5: Being able to do five minutes of a lecture, take a break, and then come back is helpful; then I'll actually remember the entire lecture. Once I start to get confused, or once I start to get brain fog, then I start tuning in and out a lot and I won't remember all of it. And so being able to take those breaks really helps actually remember the information, and then I don't have to study as long later. It makes it a lot easier in the long run.*

P2 similarly explains the benefits of being able to pause and take breaks during asynchronous

courses, while also noting the symptoms that emerge when she is unable to take breaks in this

way:

> *P2: The one benefit that I have found is that being able to pause and walk away. For me, sitting…concentrating, listening, is just not possible. So my professor posts them [lectures] in chunks and I'm able to watch part of it and then write down everything, and then take a break. Normally my time looking at computer screens is about 20-minutes before I start to experience the headaches, and then I have to look away.*

Evidently, the ability to pause asynchronous courses and take a break enables participants to

listen to their body, and take a break when concussion symptoms worsen. This enables them to

retain more information from lecture, reduce time spent studying, and prevent concussion

symptoms from becoming exacerbated.

Participants cited "felt pressure" as the main difficulty of asynchronous courses. This

pressure seemed to emerge as a result of the content of asynchronous courses being posted all at

once, rather than dispersed throughout the week. The feeling of pressure often resulted in

attempts to complete multiple courses in a single day in order to feel "caught up" – an effort

which most often backfired due to the symptoms that ensued. As P8 puts it:

> *P8: Everything's up once a week. Like, my professors normally post things on Mondays. So in my mind, it's like, okay. I have to do it all on Monday. All of it. Instead of taking the time to split it up. So it was more like I got "headachey" because I forced myself to sit at the computer as long as I could. Sit at the computer and do my work to get everything done.*

P4 similarly explains the felt-pressure that resulted from her asynchronous courses. She explains how her desire to excel in school resulted in her "pushing through" concussion symptoms: *"a lot of the time, I'm just pushing through [the symptoms] because if I want to succeed in any of my classes, I don't really have much of an option."* Other participants also reported having to "push through" symptoms due to the screen time inherent in asynchronous learning:

> **P6:** *It was hard because I was trying so hard to watch like eight hours of lectures basically a day. Professors would upload like a three hour lecture and then the other class would have three hours, and then it would just add on and add on. So I was trying to watch all these lectures in one day, and I realized it wasn't possible for me.*

Evidently, the feeling that course work was "piling up" was a common precursor to felt-pressure, symptom exacerbation, and the behaviour of "pushing through" symptoms in turn.

  Test-Taking Turmoil. Test-taking turmoil relates to the stress, anxiety, and concussion symptoms that emerged for participants when test taking in an online environment; higher levels of stress, anxiety, and concussion symptoms tended to emerge when (a) stringent Proctortrack settings were used; and (b) when tests were "linear" in nature. Students reported that it is up to the individual discretion of each of their professors to decide the online exam parameters for each class; that is, while some professors might set up proctor track to "flag" students for cheating when the students' eyes averted from the screen, other professors used less stringent settings, flagging for cheating only when the student left from the frame entirely.

  All participants reported having had experience taking tests using Proctortrack as a result of the transition to online learning. A consistent theme emerged, whereby the students whose professors used more "stringent" proctor track settings experienced greater levels of stress – and an increase in concussion symptoms – during and following tests and exams online. P6 provides

an explanation of the difficulties that stringent Proctortrack settings caused for her, which

typifies the experience of the other participants in the sample:

> *P2: A lot of the time they use the proctoring system Proctortrack. And for me, I need to be able to look away from the camera and just take a break, whereas that is normally flagged for cheating. So I found it really difficult to be writing exams and just having to look at the screen and keeping my eyes where they could see them for long periods of time. For example, I had an exam that was, I think it took me three hours, and I wasn't allowed to look away from the screen or do anything.*

This is in contrast to P8's experience, who describes how tests were not an issue for her as a

result of her professors having less stringent Proctortrack settings. She was able to push her chair

back, close her eyes, and drink water as long as she remained in the frame. She felt like she was

able to take "real rest breaks."

P2 goes on to explain how the stringent Proctortrack settings used for many of her online

exams negatively impacted her performance as a result of the anxiety and concussion symptoms

that she experienced:

> *P2: It's the anxiety… Like, I don't want to be, like, flagged as cheating… I don't want to have that risk my academic career. I struggled with those tests a lot. The ones after proctoring I had like a really bad headache and I just like was done for the day afterwards.*

Many participants similarly reported feelings of stress, anxiety, and concussion symptoms as

emerging during and following tests using Proctortrack, and tended to perform better in classes

where they were able to "look away" during online exams without being flagged.

Some participants made active efforts to ask professors if it would be possible to change

the settings on Proctortrack to allow for the rest breaks that their accommodations in-person

permitted. Some professors were accommodating, and either (a) exempted students from having

to use the Proctortrack system for tests altogether, or (b) allowed students to "look away" and

take breaks, and assured students that "flags" for cheating would be ignored all together. These

accommodations allowed students to take "meaningful" rest breaks where they could look away from the screen. This seemed to reduce anxiety, headaches, and improve overall performance on tests in turn. P4, for example, describes how during online exams, she was able to write with paper and pencil, take photos of her completed exam, and send them via email to her professor. She explains:

> **P4:** *Yeah, they [professors] would send me the exam like ten minutes before the exam time started. And so then I had time to print it out and then have them monitor me to make sure that I wasn't looking at it. Like, I would still have the proctoring up, but I would be writing on paper in front of that. And that worked well for me. So that helped a lot, so they could still make sure I wasn't cheating.*

Evidently, P4 was able to complete online tests and exams in a manner that mirrored in-person test-taking situations. P4 reported minimal stress, anxiety, and concussion symptoms in relation to test-taking due to this set up in turn. Most of the other participants did not have similarly positive experiences, as not all professors made active efforts to accommodate students online. As P2 explains:

> **P2***: They [My professors] were like, well, we can't stop it from being flagged. Whereas I had some professors be like, you can still look away and it's fine and we'll just go in and override it.*

Other students questioned the very purpose of being registered for academic accommodations if the accommodations they were registered with – such as extra time, and paper and pencil tests – would not be carried over into online learning. As P7 explains:

> **P7:** *... I think Proctortrack was really - it didn't accommodate what I needed very well. I think eliminating the rest breaks and having to stare at the screen the whole time was the opposite of what I needed pretty much.*

P7 goes on to contrast her experience with Proctortrack to the accommodations that she was readily provided with while writing tests in-person:

> *P7: In person, allowing the rest breaks and the extra time, and having my own private room, is a huge help because it eliminates all other distractions… I think it accommodates my disability to the best of its ability.*

Evidently, when professors were not willing to make individual adjustments to allow students with rest breaks and time away from the screen during online tests and exams, participants did not feel well accommodated.

Participants also struggled due to the "linear" nature of many online tests and exams. In contrast to in-person test and exams where you can physically flip the page and revisit previous answers, linear tests do not allow students to "backtrack" once an answer has been inputted online. The linear nature of online tests and exams created comparable struggles for students – anxiety, stress, exacerbated concussion symptoms – that were seen when stringent Proctortrack settings were employed. As P3 puts it:

> *P3: It really upset me and it still does whenever you couldn't go back. Like when it was linear, because…in a real in-person test it's not [linear]. I get all the questions and I can go change them 100 times. But online you couldn't go back. That was very, very frustrating, because I'm that type of person that goes and fills out the easy ones first and then goes back to some at the end. So that was the worst thing ever.*

Other students felt similarly to P3 when online tests and exams were linear. Students seemed to experience an increase in stress and anxiety due to being unable to backtrack, which often exacerbated concussion symptoms. The difficulty participants had with linear exams was often related to the difficulties with comprehension and attention that emerged post-concussion. Many participants explained how in person, skipping test questions and backtracking later was a strategy they relied on. It helped participants when they could move on to a subsequent question during exams if an answer did not readily come to them – a cognitive symptom related to memory retrieval that emerged for some participants post-concussion. With linear tests and

exams, this strategy was not viable. P2's experience with a linear online exam typifies the

experience of participants:

> **P2:** *I wasn't actually understanding what I was reading…I'll be reading something, but the information doesn't actually stick in my head. So I'll read something three times over and still have no idea what I just read.*
> **Interviewer:** *So in a situation like that, it would be helpful to kind of just go to the next question and then backtrack? But that's wasn't an option?*
> **P2:** *Yeah.*

Overall, students seemed to feel that they were not adequately accommodated in test-taking

situations online. This was the result of stringent Proctortrack settings and the linear nature of

online exams – both of which exacerbated concussion symptoms and impeded performance in

turn.

Social Factors

A Balancing Act. This theme refers to the delicate balance of academic and social energy

expenditure that is required during concussion recovery, due to diminishing levels of cognitive

and physical energy reserves. Students often reported having to limit social contacts and

interaction in efforts to "save" mental and physical energy for their academic endeavours.

Students gradually began to prioritize academic responsibilities over social engagement,

sacrificing sociality in order to succeed in their academics. In turn, this often resulted students

having a "subpar" social life. As P7 explains:

> **P7:** *I think how my concussion is impacting me first socially is often many days I'm not able to go out. In order to perform and go to school the next day - I would have to make sure I got adequate sleep and just keeping up with that realm, so then I can't really go out and go drinking with my friends if that's just going to make the headaches worse.*

In addition to prioritizing success in academics over social activities, many participants

eventually became frustrated with being less engaged socially. This often resulted in periods

where students would attempt to increase their engagement socially and "push through"

concussion symptoms. As P6 puts it:

> **P6:** *I just want to be normal to an extent. Like, I just want to go out with my friends to a bar. I just want to do this and that with my friends. But I can't. So sometimes I try and push through it. And other times I'm very aware that, like, doing that will cause me symptoms.*

Overall, students were often required to "save" their mental and physical energy for their

schoolwork, which tended to result in sacrificing social engagement.

Some students, however, were effectively able to find a balance between academic and

social activities. Indeed, some students – over time – were able to learn strategies to manage the

extent to which diminished levels of cognitive and physical energy emerged following social

activity; this enabled students to have more of a balance between academics and social activities.

Some students reported that they were able to find a "sweet spot," wherein they were able to

socialize up to a point, while also continuing to succeed in their studies. Knowing how to achieve

this "sweet spot" often took months to years, and was typically arrived at following a long

process of trial and error. P8, for example, describes how the strategies she has learned to

mitigate her concussion symptoms while studying, in a way that allowed her to "save up" energy

reserves for social activities later:

> **P8:** *...if I sit at the computer for too long, staring at my computer for too long with the online classes, I do start to feel headachy. So like I make sure that I print out the readings that I need for that week so that I can take a break from the computer and look at a piece of paper instead. For me, it was mostly finding a balance and like that "sweet spot" where I can do all of this without increasing the symptoms making them worse type of thing... I started feeling better and was able to do more [social] things.*

P8 goes on to describe how scheduling was important in helping her achieve the "sweet spot"

which allowed her to have adequate energy for both academics and socializing:

> **P8:** *I would set my schedule up nicely so that I would have like one class and then a break and then another class. And then one class the next day. And I always make sure my Fridays were free type of thing.*

Evidently, as a result of P8 listening to her body and using strategies to mitigate symptoms and not "push" herself when she felt symptoms emerge, she was able to find her "sweet spot." This allowed her to have energy for both academic and social activities as a result, thus eliminating the dilemma associated with the trade-off between academics and social engagement.

In the case of online group work, however, students often felt like they were required to "push themselves" in order to meaningfully contribute. Online group work was reported by students as difficult due to screen time and the exacerbation of concussion symptoms that often followed.

> **P5:** *I get tired out a lot faster than anybody else. I don't study with anyone other than close friends who get the situation and they're OK with me randomly napping in the middle of study time… But we had an assignment last week where we had to do as a group during class [online], this research thing, and that meant that I had to be on a screen for like three hours. I had to go to sleep all day after that.*

Ultimately, online group work often resulted in students pushing through symptoms and deviating from acting in accordance to their "sweet spot." This prevented them from balancing both social and academic endeavours for a period of time.

> **Support.** Support refers to the availability and functioning of interpersonal relationships, and encompasses both structural factors (e.g., relationship status, social support, quality of social contacts) and functional factors (e.g., relationship conflict, communication, intimacy; Bannon et al., 2020). Participants who had supportive significant others, family members, and healthcare practitioners in their corner (i.e., structural support) seemed to fare better in terms of (a) reported number and severity of concussion symptoms and (b) reported levels of stress and anxiety compared to participants without these supports in place. Participants with high levels of adaptive structural support (e.g., supportive significant other, high quality relationships) also

tended to report functional support in its adaptive form more frequently (e.g., lower levels of relationship conflict, adaptive communication).

P7 was a participant who showed minimal levels of stress and anxiety. Overall, she reported having accepted and come to terms with her concussion and the way that it affects her in her daily life. When P7 experienced headaches – her most bothersome and consistent concussion symptom – she was able to have patience for herself and the limitations she had on her "bad days." This ability to accept the way that she changed post-concussion was closely intertwined with the high level of quality social supports that P7 has in place. As she explains:

> **P7:** *I think just learning to have patience with my body and having my support system kind of legitimize my feelings, and my family doctor going like "yeah, this is all valid. You are doing the best you possibly can." And I think that kind of helped me come to terms with it [my concussion].*

P7 goes on to explain how she has been able to effectively find patience for herself and for her body. She explains how she is not able to engage in certain activities in the way that she was able to prior to her concussion, "*but that is okay*." P7 reported having quality friendships along with a supportive partner in turn, which also seems to play a role in her low levels of stress and anxiety relating to her concussion. She explains how her support system is consistently understanding of her limitations, which allows her to readily communicate to them her symptoms and her ability (or inability) to engage in social activities:

> **P7:** *It's just kind of…you need more sleep and just to limit all social interactions [when symptoms flare up], which is difficult… The person I'm with right now is, they're able to understand. And I find letting my friends know before I go out is, "hey guys , I'm having a really bad day today. I'm probably not going to drink, or I'm probably going to head home early." And just being honest with them before I go.*

Other participants who exhibited high levels of adaptive structural and functional social support similarly showed: (a) lower levels of anxiety and stress surrounding concussion symptoms, (b)

an ability to accept the way they had changed post-concussion, and (c) an ability to more readily communicate symptoms with significant others in turn.

Participants who did not have intact structural and functional support did not fare as well. P6, for example, was a participant who has been consistently met with skepticism from her parents and peers with regards to her persistent concussion symptoms, and did not have a close knit circle of supportive friends (low levels of structural support). A lack of support in one area (e.g., friendships) often led to feelings of anxiety and a hesitance to seek out supports in other areas in turn (e.g., academics). Due to the skepticism and lack of support provided to P6, she became hesitant to seek out and ask for supports from AE and her professors at school. There is a "21-day rule" at the university, for example, whereby students must register exams and tests with AE 21 days prior to the exam date. For one of P6's classes, she had "missed" the deadline to book her test with AE. She explains:

> *P6: I just have had a really hard time reaching out to people. I just feel anxious. I don't like people knowing that I have accommodations. So even though that office [AE] knows that I have them, it's just like, what if like my classmates overheard me talking? Like what if this and what if that? I don't like people hearing that I have a special situation. I normally just try to solve problems by myself and on my own.*

Rather than contacting AE to ask for assistance, P6 experienced anxiety at the very thought of having to ask for support. It is important to note that three other participants in the sample (who displayed high levels of adaptive support) had explained missing this same "booking" deadline and were granted an exception without question when they requested one.

P4 describes how a lack of support from some professors resulted in her feeling uncomfortable in asking supports from other professors in turn. She explains how she does not feel "supported" by her professors; rather, she feels like they are doing the bare minimum of "what they are required to do" for her in terms of the provision of academic accommodations.

For example, P4 described multiple instances of unsupportive responses from professors when she made an effort to let professors for her courses know that she was register struggling in certain areas. She explains:

> **P4:** *I'll go up to talk to them [professors] at the first class to just say that I do struggle with this. And… I got one answer saying, "Well then why are you here?" I was like, "Well… it says in the syllabus that I need to be here. I'm getting participation marks, what you mean?!" I was just like, yeah, I was flabbergasted, Like, what!?*

P4 proceeds to explain how this unsupportive response affected her likelihood to seek out support from other professors in turn:

> **Interviewer:** *Do you think this will impact your likelihood of seeking out professors in the future if you need extra support?*
> **P4:** *I think it definitely impacted it. I'm nervous to talk to professors. But not only that, it just made me feel shitty about my experience. It totally devalues everything I've been going through. So with professors and with basically any authority figure going forward? Yes. Such an impact.*

Evidently, a lack of functional and structural support have far-reaching implications. A lack of felt-support from professors, family, and friends affects not only those direct domains, but one's comfortability in seeking out support from others in the future. It is also worth mentioning that the lack of support experienced by some participants may have been exacerbated due to pandemic-related restrictions; for example, the loss of social contacts, the inability to associate with supportive friends in-person, and the inability to attend enjoyable events due to the intermittent lifting and re-imposing of lockdown-related restrictions.

> ***Stigmatization.*** Stigma emerged as a theme in all nine participants. Stigma typically resulted from misunderstandings about concussion – especially in terms of its legitimacy – when symptoms persisted beyond an acute period (>2-weeks). Stigma most commonly emerged in relation to three subcategories: (a) time since injury (>2-weeks), (b) the invisibility of injury, and (c) lack of understanding. These subcategories of stigma emerged in all participants. A

67

distinction emerged in participants between felt-stigma vs. enacted-stigma. Felt-stigma is an anxious cognitive orientation; it refers to the feelings of embarrassment, shame, and the ongoing worry of what professors, classmates, and / or peers would think of the student for needing extra support absent any objective evidence of stigma. Enacted-stigma, on the other hand, refers to the actual experience of being treated unfairly by others as a result of one's concussion; for example, the judgement by others that one has an unfair advantage due to their academic accommodations.

Participant experiences of both felt- and enacted-stigma emerged in relation to the three stigma subcategories. For example, in terms of felt-stigma, some participants experienced an ongoing worry that others would not believe they were experiencing symptoms as a result of: (a) the prolonged time since they sustained their concussion (>2-weeks), (b) the invisibility of concussion, and (c) others' lack of knowledge and understanding about the long-term impact that concussions can have. Felt-stigma was more common in participants who did not have a strong network of social supports in place. P6 typifies the experience of other participants who exhibited high levels of felt-stigma when she explains:

> **P6:** *My biggest fear is people that would be like, oh, well, you're getting accommodations and you don't look like you're injured. Or you don't look like you're struggling, or…you sit in the lecture for three hours. You don't have a problem. I don't want people to see me on my good day and be like, well, you have no symptoms like - you're fine, you're making it up or whatever. Just like people believing me.*

P3 similarly explains her ongoing worry and feelings of embarrassment in relation to her peers and professors finding out she was registered with AE. She explains how she felt after initially registering with accommodations:

> **P3:** *I didn't want the teachers to think I'm a bad student. Someone contacted me [from AE] and asked me if I wanted accommodations, and I thought it was like a punishment kind of thing. Like I thought my marks would be lower… I thought it would put me in a disadvantage to the rest of everything, and I have never told anyone [friends, peers] that I am registered to this day.*

Evidently, feelings of worry, embarrassment, and shame in relation to being registered with academic accommodations (i.e., felt-stigma) are related to obtaining social support; participants who exhibited high levels of felt-stigma were typically less likely to seek out and obtain social support due to the fear of negative social consequences that would ensue.

Enacted-stigma, or the actual experience of being treated unfairly by others as a result of one's concussion, emerged for all participants. However, enacted-stigma was cited more frequently by participants who did not demonstrate an anxious orientation. Like felt-stigma, enacted-stigma also arose in relation to (1) Lack of concussion knowledge; (2) An incompatible experience with concussion (i.e., speedy recovery time); (3) Lack of understanding of concussion. P8, for example, takes courses in both Kinesiology and Psychology. She notes an important distinction in how her professors in these two subject areas have responded to her disability as a result of their concussion-specific knowledge:

> **P8:** *In kinesiology, I found that most of the professors were, you know, they knew what the symptoms [of concussion] were. They knew how much you could take from the symptoms. So I never really had much of an issue with those professors. Like, they were always… I emailed them and they would email me back: "OK , what do you need?" But some of my psychology professors were like, I need you to provide more documentation before I can give you these specific accommodations.*

Other participants also reported similar obstacles and experiences of enacted-stigma due to others lacking concussion-specific knowledge. For example, P2 provides an account of her experiences with people who do not understand the debilitating effects that concussion can have:

> **P2:** *I kind of just have realized that there are certain people who just don't understand. And they kind of take almost that ableist point of view where they're like, well, you look fine. Or like, why do you get special treatment over someone else? Like, I have a headache today, so like, why can't I have extra help? Whereas they don't realize that it's not simply "I have a headache." It's - I have a headache and I could take Advil and Tylenol and drink a lot of water and go to sleep. And that's not going to help anything at all. Because it's not just "Ouch, I have a headache." It's a debilitating brain injury that's not going to get better.*

Evidently, P2 is able to accept that not everyone will understand her injury, and makes efforts to inform others about the effect that her concussion has had on her, as well as her *need* for accommodations. This account typifies the experience of other participants who also cited frequent experiences of enacted-stigma. These participants tended towards a "respond-to-inform" orientation, whereby active efforts were made in providing others with concussion-related information when skepticism or questions relating to their injury arose. This is in contrast to the anxious-orientation that emerged in participants who cited frequent experiences of felt-stigma, whereby participants tended to worry and ruminate on others' perceptions of their injury and concussion related limitations.

Many participants reported felt-pressure to engage in social and academic endeavours "normally" after a couple of weeks had passed, and after they had engaged in an initial period (approximately 2 weeks) of rest. At this point, participants often reported that others expected them to be better and healthy enough to return to activities as usual; the "typical" concussion recovery period had passed, and it was then that questions began to arise concerning the legitimacy of their injury (e.g., why they were still experiencing symptoms). As P6 explains:

> **P6:** *There was a girl in my class who got a concussion from basketball, and she got better a lot faster than me. But like, everyone saw her get injured…she got hit really, really, really hard. And people were like, there's no way that you were hit that hard. Like, there is no way that you should still have symptoms and she's completely fine and able to do everything now…*

Evidently, both time elapsed since injury and the invisibility of injury were the two key factors that gave rise to a lack of understanding, and ultimately, stigma in P6 and the other participants.

Enacted-stigma also manifested in relation to misconceptions about the provision of academic accommodations to students with disabilities. Many students reported that they shied away from disclosing their disability status due to stigmatizing responses that they had received

70

from other students in the past. For example, when others found out that participants received

extra time on exams through AE, they were often met with responses such as *"You're so lucky*!"

and "*How can I get accommodations, too*?" (absent any real need for accommodations). As P7

explains:

> **P7:** *I've had some people reach out and go "Oh, how do you get an accommodation, can I just get one?" And I'm just kind of like, "No… I don't just choose to get one. I need this to be on the same playing field like." Or they'll reply like, "Oh my gosh, that's so nice. You're so lucky." Like no, actually, I'm not lucky. I'm just trying to get to perform at what you would perform - it's just trying to take away the barriers. It just makes me feel pretty crappy and delegitimizes my feelings…it just makes me feel like that's not valid.*

P3 similarly explains feelings of hesitancy to disclose her disability status to others as a result of

previous experiences of enacted-stigma. Unlike P7, she explains how she believes that academic

accommodations have become "abused" by highly competitive students who want a "leg up"

over other students. She explains how the minority of students registered with AE for illegitimate

reasons serves to perpetuate the enacted-stigma that she experiences in turn:

> **P3:** *A lot of people abuse it [AE]. A lot of people have them [academic accommodations] for the wrong reasons. Once they find out it's like, "Oh, you're so lucky!" Anyone who is that cutthroat competitive sees it as an advantage. So if they can find a way to get it, they'll milk it… I could probably count like five people that I know in my own little world who have "test anxiety."*

P3 goes on to explain how being met with skepticism by others – which becomes amplified due

to responses such as the above – results in hesitancy to disclose her disability to others.

Evidently, felt- and enacted-stigma seem to interact; participants who were once low in felt-

stigma (i.e., did not experience many anxious thoughts in relation to being believed), can

overtime become high on this variable due to repeated stigmatizing responses from others.

Individual Factors.

  The Changed Self. Refers to the changes in self-concept that emerged post-concussion

specifically relating to (a) the desire and ability to integrate with peers socially; (b) one's abilities

and motivation to succeed in school. All participants noted changes to their self-concept post-concussion. Distinctions were often made between one's self pre-concussion vs. post-concussion. Two of the most commonly cited changes related to changes to one's "social self" and changes to one's "academic self."

In terms of the social self, participants often reported changes in personality and emotions emerging post-concussion. This often manifested in the form of participants (a) feeling more introverted post-concussion, and (b) experiencing emotions that were perceived by participants as negative and in turn interfered with their ability to socialize. With regards to the desire and ability to integrate socially, P4 contrasts her pre- and post-concussion self:

> **P4:** *Socially it is definitely hard. I used to be very outgoing. I used to be able to hang out with large groups all the time. Now the noise bothers me, and so does holding more than one conversation at a time.*

P8 similarly describes the difficult experience she had socially in second year of university following her second concussion. She describes living in a house with roommates and being unable to integrate socially due to her concussion symptoms:

> **Interviewer:** *So is that the point [following your second concussion] when you really felt you started to spiral socially?*
> **P8:** *Yeah. My roommates…liked to party a lot. So they had people over at our house all the time. And I didn't want to make them stop doing that. So I just kind of like sat in my room by myself all day as they went out and had people over - it sucked! Like, because you want to be there, and you want to hang out with people, but you know, you can't.*

Other participants also showed this pattern of a changed social self as a result of concussion-induced personality changes. P9 explains how feelings of irritability resulted in him not having the same level of desire to integrate socially compared to pre-concussion. He explains:

> **P9:** *I kind of became a bit more introverted, like a bit more reluctant to go out and hang out with people…A large part of it was just kind of like I felt more irritable a lot of the time and would lash out at everyone. I didn't want to talk to people…or kind of deal with anyone. And I think maybe a portion of it would have been due to symptoms as well.*

P9 goes on to explain how his desire and ability to engage in social activities increased in direct proportion to improvements in his concussion symptoms. Evidently, most participants *desired* to engage in social activities post-concussion; however, their *ability* to socialize without experiencing negative emotions and exacerbating concussion symptoms interfered with pre-concussion levels of sociality.

In terms of the academic self, most participants reported negative changes in their abilities and motivation to succeed within their studies. For example, P3 describes how pre-concussion, she used to be a very high achieving student. She describes herself pre-concussion as the student who professors and peers viewed as a studious "overachiever" who strived for "one-hundred percent in every class." Post-concussion, this changed. As P3 explains:

> **P3:** *What it [concussion] took away from me is that I forgot how to love the things that I loved. So everything that I was so passionate about before, I had lost. Academically, for the longest time post-concussion I would just… I couldn't see an end to the pain and stuff. So my marks didn't matter. And school would be too hard. I just gave up. I mean. I really lost sight of the bigger goal and vision.*

P9 similarly contrasts his orientation to academics pre- and post-concussion. He explains the interaction between concussion symptoms, his motivation to succeed academically, and the frustration he experienced due to his changed self:

> **P9:** *Previous to my concussion, I was fairly good at kind of going out and getting my work done on time and everything. And then I guess after that… I found that I just kind of wasn't able to, like, sit down and focus. A large part of it was me struggling to find the motivation to do it, but I think it was also just struggling with the symptoms and being frustrated.*

Evidently, for many participants, concussion symptoms interfered with one's motivation and ability to succeed in their studies. This tended to result in frustration due to one's inability to achieve academically at one's pre-concussion level, and a changed view of one's "academic self" in turn.

Resourcefulness. Resourcefulness refers to the ability to use positive self-instructions, creativity, and apply problem-solving methods to cope with difficulties (Kennett et al., 2008). Although participants experienced a wide range of difficulties academically, socially, and relationally, as evidenced by the above findings, the level of resourcefulness of participants was found to minimize the negative impact of concussion symptoms on academic and social functioning. Resourcefulness manifested in different forms socially and academically. One way resourcefulness emerged in the management of social interactions was through the development of "symptom scales." P7 explains:

> *P7: One thing is I kind of go off of the scale I've developed. So with my partner, we have a scale of 10 being the worst possible day and zero being good, and I kind of keep him up to date on where I'm at on my scale, and then we can plan our social outings according to that. If I'm at a seven or eight, it's "OK, we should probably head home now." Or if I'm at a two or a three we can go out for a little longer and later.*

Evidently, P7's development of a "symptom scale" allowed her to remain socially integrated with friends and peers while keeping her symptoms at bay. A variation of the "symptom scale" that P7 developed for her own use was referred to by P8 as useful in finding the previously referenced activity "sweet spot". She explains how over time, she was able to plan out her day in order to maximize her ability to be social while simultaneously preventing her concussion symptoms from worsening.

P6 had a different approach to finding her "sweet spot" by heightening her attention to her bodily sensations. She described how, over time, she learned to pay attention to sensations in her head – "the tingles" – that signalled impending worsening symptoms. This became P6's cue to temporarily step away from situations, especially social activities that historically triggered her symptoms. She explains:

> **P6:** *So like, I can feel "the tingles" in my head, and I'm like, okay, let's take a quick break. Let's go get some water. And if the tingles are bad then I stop – I take a break for longer. I used to also take naps – like quick like twenty-minute naps to reset my brain.*

Over time, this process of listening to her body and taking breaks upon symptom onset allowed P6 to find her "sweet spot." She was then able to better anticipate activities that she could engage in – and for how long – rather than disintegrating socially all together. This ability to (a) "experiment" with one's concussion symptom threshold, and (b) tolerate unpleasant symptoms during the trial-and-error process of finding one's "sweet spot," were the key factors differentiating participants who remained socially engaged vs. those who withdrew socially all together.

Resourcefulness was reflected in academics in a variety of ways. Most of the strategies developed by participants were an attempt to mitigate the negative impact that online learning had on concussion symptoms. Strategies described by participants consisted of: averting eyes from the screen and listening as opposed to watching online lectures; scheduling breaks during the day; moderate physical exercise throughout the day; completing more "difficult" courses earlier on in the day when symptoms tended to be less severe; seeking out additional support from various healthcare practitioners in an effort to manage symptoms (e.g., psychologist, neurologist, social worker, occupational therapist, physiotherapist); at-home environment management (i.e., in efforts to reduce distractions during lectures and exams); using audiobooks to reduce eye-strain; printing online articles and chapters to avoid screen time; using blue-light glasses and software to eliminate blue light on the computer; increasing the font size on computers; taking over the counter pain medication; advocating for oneself to professors and AE by clearly communicating symptoms and accommodations required.

Participants who cited more examples of resourceful behaviours tended to mention feelings of stress and anxiety surrounding academics and concussion symptoms less frequently. They also tended to experience lower levels of "test-taking turmoil"; rather than worrying and becoming anxious about symptoms and how this would impact their performance, their default seemed to be a "problem-solving mode." P8, for example, explained how she previously struggled with online synchronous classes. It was difficult to concentrate on the screen for an extended period of time without being able to pause the lecture. This often resulted in an exacerbation of concussion symptoms in P8, until she actively worked on a strategy to mitigate the negative impact of these classes. She explains:

> **P8:** *For some of the [synchronous] classes, I would just put my phone really close and I would put the audio recording on. And then if I needed to take a break, I would just leave the room, but leave my phone there. I would write down the time that I left on and the time I came back on the recording. And then I would just go over that part later. But it took a while for me to figure that out.*

Evidently, P8 was able to recognize that she was experiencing barriers in terms of symptom exacerbation as a result of her online synchronous classes. She was effectively able to transition into "problem-solving mode," and by doing so, found a creative strategy whereby her synchronous classes were adapted into asynchronous recorded classes. This enabled her to take breaks, listen to her body as opposed to "pushing herself," and reduce unpleasant concussion symptoms in turn.

Participants who demonstrated lower levels of resourcefulness, on the other hand, tended to default to a "helplessness-mode." This tended to begin with an anxiety and stress response due to symptoms, and typically resulted in a helplessness orientation where concussion symptoms were viewed as an impossible barrier preventing academic success. For example, P4 explained

how she experienced difficulties with ongoing and severe headaches during her online classes.

She explains how she is required to push through her symptoms due to having no alternative:

> **P4:** *Well, a lot of the time I just push through [symptoms] because I don't have any other option…a lot of the time I'm just pushing through because I, I don't really – like, if I want to succeed in any of my classes, I don't really have much of an option… there wasn't really much option for getting off of screens. And that was where my main issue lies.*

P7 similarly defaulted to "helplessness-mode" in describing how she "gave up" on online

readings due to the screen time that completing them would require. She explains:

> **P7:** *I just have kind of given up on the readings, just because they're mostly moved online now. So it's kind of causing more harm than good. So I just kind of stopped doing some of those. I think I'm sure I could find it somewhere. But it's just like last year they only offered the online one.*

P6 additionally provides an account that exemplifies the feelings of anxiety and stress that

ultimately led to the helplessness orientation in these participants:

> **P6:** *I'm always scared that, like, I'm not going to reach the average needed. And it's just - it's stressful that I might have to take another year…it's not my fault that I can't take five courses. I just couldn't focus on the classes.*

Evidently, participants who were lower in resourcefulness tended towards a helplessness

orientation. They experienced feelings of stress and anxiety, and became less eager and willing

to engage in problem solving. This left them feeling helpless in terms of the future possibility of

performing well in their online studies.

　　　　Catastrophizing. Catastrophizing refers to the "future talk" that emerged while students

worked to accept that their planned for future may look different than they had previously hoped-

for, both employment-wise and relationally, as a result of their concussion(s). Catastrophizing

emerged on a continuum ranging from a positive, growth-oriented and adaptive mindset, to a

catastrophizing and self-defeating mindset. Participants who exhibited (a) higher degrees of

resourcefulness or (b) a higher level of quality social supports tended to demonstrate positive,

growth-oriented mindsets and future talk. P7, for example, typified this pattern. She displayed both high levels of resourcefulness and cited her strong support system throughout the interview, and explained how the skills she has learned as a result of her concussion will help her succeed in her future career, as opposed to hinder her. She makes evident this positive, growth-oriented mindset when she explains:

> **P7:** *I feel that some of the skills that I've learned because of it [her concussion], and the patience, is only going to help me in my future…I think by showing the resiliency that comes with dealing with the symptoms, I don't think it'll affect my future employment negatively.*

P3 similarly displayed this positive, growth-oriented mindset. It was most evident in her answer to a question related to the anticipated impact that her concussion might have on her future employment prospects:

> **Interviewer:** *How do you think your injury will impact your future employment prospects?*
> **P3:** *I don't think it will. I think that by the time I get there, it'll just kind of…not disappear, but I will personally be able to grow and train myself enough to feel that they don't exist. And I think that by training and adapting, it will make me a better employee in the end. I'll be more conscientious and that'll help a lot.*

Other participants who similarly exhibited high levels of resourcefulness and who had a strong, quality support systems also displayed positive and growth-oriented future talk. They often highlighted the positive changes that resulted from their concussion and were able to develop a problem-solving orientation if there were any anticipated difficulties in terms of employment prospects.

Participants who demonstrated lower levels of resourcefulness or who had less social support tended to display catastrophizing and self-defeating future talk. Rumination and helplessness are the main ways that catastrophizing in its negative form manifested. For example, P6 is a participant who did not have quality social supports in place. She exhibited

rumination in her future talk when she questions whether she will be able to succeed in any future career due to concussion symptoms, and what her future employers may think:

> **P6:** *I might need to take breaks at work. And I don't know if employers would be cool with that. Like, I don't know if an employer would want to hire the girl that needs to take a break every four hours compared to a person that can work eight hours straight…I don't want my boss to know that like, I need to take a break because I have a messed up brain. And they'd go "Well, why did we hire you if we could hire someone who doesn't have a messed up brain and won't cost us potential money like that?"*

Rumination was also evident in terms of the viability of future relationships. Indeed, P6 went on to explain how she worries that her current partner will break up with her due to the "burden" that her concussion symptoms place on him.

Helplessness was also evident in participants who demonstrated lower levels of resourcefulness or who had low levels of social support. Indeed, participants who displayed low levels of resourcefulness tended to more readily give up in terms of trying to overcome academic and social barriers relating to their concussion. This impacted their success academically, and the extent to which they integrated with peers in turn. P4, for example, exhibited low levels of both resourcefulness and social support. She explains how her parents downplayed her concussion symptoms, which impacted her motivation to recover from her injury and seek out additional academic accommodations in turn:

> **P4:** *My parents…downplay concussions a lot, which I think is the reason why I didn't really try very hard to solve things or recover. It will limit what I can do with my life - not just with my career, but activities. On my bad days I can hardly get out of bed because my head is so bad.*

P4 goes on to explain how she does not feel adequately accommodated, but states that it is "her fault" for not making the effort to ask for additional supports form the university to reduce her screen time:

> **P4**: *I definitely wish that I had access to a printer if not help cover the cost of hardcopy textbooks. I mean, that's also my fault because I haven't talked to them about it or asked if they could help me with accommodations for that.*

Evidently, P4 is a participant who exhibited both low levels of social support and low levels of resourcefulness, which ultimately seemed to result in her "helplessness" orientation. The above accounts highlight the rumination, helplessness, and self-defeating future talk – both employment-wise and relationally – that were also evident in the other participants who had lower levels of social support and resourcefulness.

Table 3

A representation of the predetermined superordinate (numbered) and subordinate domains affected post-concussion, with indicative quotes (middle) and list of total cases contributing to each theme (far right column).

Theme	Indicative quotes	Cases contributing to subordinate themes
1. Institutional Factors		
○ An Inconsistent Delivery	'Some of the professors were great and some of them weren't so great…, I kind of just stopped going to those specific classes and I just found someone to give me the notes [due to] not being understood and not feeling like I was supported by that professor' (Case 8)	Cases 1 through 9
○ Accommodations Process	'One of the things they didn't understand was that concussions are so variable…they needed an exact date to tell the professors. And I couldn't give them that. I ended up having to go back to the hospital to get them to sign another form, saying that I was still not OK and then submit that again' (Case 2)	Cases 1 through 9
2. Learning and Assessment		
○ Synchronous Structure	'…My brain needs structure. I create schedules on my phone where I'm like, OK, I have to work from this time to this time. So like, even if [my classes] weren't synchronous, I would try and make them synchronous' (Case 3)	Cases 1 through 9
○ Asynchronous Autonomy	'When it was online, they could record the YouTube videos for hours. It was kind of like OK, here's your entire semester in this many YouTube videos with no time regulation on when you need to complete them by. You just kind of have access to them' (Case 7)	Cases 1 through 9
○ Test-taking turmoil	'A lot of the time they use…Proctor Track. For me, I need to be able to look away from the camera and just take a break, whereas that is normally flagged for cheating. So I found it really difficult to be writing exams and just having to look at the screen and keeping my eyes where they could see them for long periods of time (Case 2)	Cases 2, 3, 5, 6, 7

Table 3 continued

3. Social Factors			
o A Balancing Act		'Because I have to spend so much on my courses, I have no time to volunteer or do any extracurriculars. I can only handle a few hours of social time. I take so many breaks and I get tired out a lot faster. (Case 5)	Cases 1 through 9
o Support			
	a. Personal	'My close knit support system, they know how bad I struggle and they always ensure and validate me…"like no, this is – they have to accommodate you. This is what you need. This is – this is this is the bare minimum here."' (Case 7)	Cases 1, 2, 3, 5, 7, 8, 9
	b. Institutional	'My writing professor, he knew I was struggling to read, so he suggested audio books and helped me navigate how to find them…completely willing to give me extensions for all my work and let me miss class to go to doctor's appointments. He has been really amazing' (Case 5)	Cases 1, 2, 3, 5, 6, 9*
o Felt-Stigma		'My biggest fear is people that would be like, oh, well, you're getting accommodations and you don't look like you're injured. Or you don't look like you're struggling, or stuff like that where they're like, well, you sit in the lecture for three hours and you don't have a problem' (Case 6)	Cases 1, 3, 4, 6, 7, 8
o Enacted-Stigma		'There was a lot of skepticism because I do present so, like, fine. Like, they all… you can't tell that I'm dealing with [my concussion] during the day because I try and hide it as much as I can. So a lot of them were like, "Oh, really, like…do you really need that?"' (Case 4)	Cases 2, 3, 4, 6, 7, 8

Table 3 continued

4.	**Individual Factors**		
o	The Changed Self	'What it [concussion] took away from me is that I forgot how to love the things that I loved . You know, I didn't see a purpose, I didn't see a future. So everything that I was so passionate about before, I had lost…I looked at my old Instagram the other day and I was like, I don't know her. I really don't.' (Case 3)	Cases 1 through 9
o	Castrophizing		
	a. Self-defeating	'The reason why a lot of my symptoms [have not improved] is because I didn't - I never really tried very hard to solve things or recover, because I'm still trying to recover' (Case 4)	Cases 4, 6, 7
	b. Adaptive	'I just kind of decided to take a different perspective on it. And it took a while... But I kind of figured out what my next steps are and what I want to do [after graduating] and kind of just focus on that' (Case 2)	Cases 1, 2, 3, 5, 8, 9
o	Resourcefulness	'[Academics] became easier second semester when I had learned techniques to study and not be sitting there for like 12-hours a day on my laptop' (Case 6)	Cases 1, 2, 3, 5, 8, 9

Note. *Cases with at least two experiences with unsupportive professors were classified as low in institutional support.

Chapter 5: Discussion

The purpose of the present study was to gain insight into the lived experiences of post-secondary students with concussion(s) who are receiving academic accommodations. This was explored in the context of the COVID-19 pandemic, where the shift to online learning became ubiquitous beginning in the early months of 2020 (Supriya et al. 2021). This is an important area of investigation for two reasons:

1. Most concussion research in the educational environment has historically focused on "Return to Learn" (RTL) in younger adolescent populations (i.e., elementary and high school settings). There has been substantially less research focusing on the impact of concussion on the post-injury accommodations process in post-secondary settings, and no research in this area to date in the context of the COVID-19 pandemic.

2. Research has primarily focused on the impact of more severe traumatic brain injuries (TBIs) and academic accommodations in educational settings. Less attention has been paid to students experiencing protracted concussion symptoms as a result of Post-Concussion Syndrome (PCS). Given the sparsity of research in this area, the present study aimed to give voice to – and examine the lived experiences of – this marginalized population of students with concussion registered with accommodations.

The present study implemented Interpretative Phenomenological Analysis (IPA), an inductively driven approach, to code for emergent themes. This led to the emergence of four major themes and twelve subordinate themes related to the experiences of university students receiving academic accommodations for concussion.

1. Institutional Factors. The Accessibility for Ontarians with Disabilities Act (AODA) requires colleges and universities to make their services universally accessible for people with

disabilities (Government of Ontario, 2014). The AODA legally obliges post-secondary institutions to proactively ensure that their facilities and services are generally accessible (Flaherty & Roussy, 2014). Previous work (e.g., Deckoff-Jones & Duell, 2018; Fichten et al., 2003; Flaherty & Roussy, 2014) has found that the AODA has not addressed many of the deeply entrenched barriers that are often faced by students receiving academic accommodations in the post-secondary setting. For example, attitudinal factors (e.g., stigmatization) are entrenched and difficult to address (Deckoff-Jones & Duell, 2018). Students with concussion have been especially prone to facing barriers in accessing accommodations at university due to the invisible nature of this disability, and the results of the present study converge with these findings.

The inconsistent delivery of accommodations was a barrier faced by many students in the sample. The provision of optimal accommodations was found to be dependent on the student exhibiting personal resourcefulness (i.e., the ability to use positive self-instructions, creativity, and apply problem-solving methods to cope with difficulties) and a having a general state of mental wellness (Kennett, O'Hagan, & Cezer, 2008). This aligns with previous research linking these two variables: individuals with high levels of personal resourcefulness tend to be better able to meet life's challenges, experience more positive mental and physical health, and recognize that it takes concerted effort to regulate and minimize the negative impact disruptive events have on their functioning (Shin, 2011; Kennett, O'Hagan, & Cezer, 2008). In the present study, students who exhibited personal resourcefulness made active efforts to contact faculty and counsellors for support and implemented problem-solving strategies. In turn, these participants experienced (a) more numerous accommodations; and (b) reported feeling well-accommodated. These findings align with research indicating that the onus is often on the students themselves to

assert their learning-specific needs in order for academic success to be achieved in the university setting (Bruce & Aylward, 2021).

The invisibility of concussion is another possible explanation for the variable delivery of academic accommodations among students that was found in the present study. Indeed, the inability for others to readily recognize a student's disability might explain why the internal efforts of students – such as personal resourcefulness – was found to be a precursor to receiving adequate academic accommodations. Previous research has found that university students with invisible disabilities are more likely to (a) report negative attitudes toward their institution; and (b) report that their institutions demonstrated fewer positive responses toward them as students compared to those with visible disabilities (Mullins & Preyde, 2011).

In the present study, students who were uncomfortable with reaching out for support fared much worse in terms of feeling well-accommodated. Among students with invisible disabilities, research has found that the accommodations they receive are more likely to be viewed as inappropriate by both peers and university faculty members – making their delivery less likely – compared to students with visible and readily identifiable disabilities (Deckoff-Jones & Duell, 2018; Burgstahler & Doe, 2006). Perhaps for students who find self-advocacy efforts more difficult to begin with, the effects of inadequate support typically found among students with invisible disabilities becomes compounded, heightening this inter-student discrepancy in the delivery of academic accommodations.

Students cited obstacles in the process of registering with – and remaining registered with – Accessible Education (AE). For these participants, the process of establishing and maintaining registration often resulted in frustration and the exacerbation of concussion symptoms due to the effort that the process required. This finding converges with previous research by Mullins and

Preyde (2013), who suggest that Canadian university students with an invisible disability experienced frustration as a result of the steps involved in registering for their accommodations. Indeed, one of the main themes that emerged in the study by Mullins and Preyde (2013) relates to the stressful "bureaucracy" involved in registering with academic accommodations. The present study aligns with this research in that many students within our sample experienced the process of navigating the system – which involved initial registration and re-registration (for those with temporary disabilities), paperwork, forms, meetings – as stressful and frustrating.

The present study differs from Mullins and Preyde (2013) in that not *all* students experienced the system as stressful and frustrating. In the present study these feelings of stress and frustration were not evident when participants had a healthcare practitioner actively treating their concussion, and were present to a lesser extent among participants who were registered with a permanent (as compared to a temporary) disability. This suggests that students who have a healthcare practitioner actively treating their concussion benefitted from a more streamlined process by not having to search for a healthcare practitioner to sign off on their forms. This likely reduced the stressfulness of the process. In addition, the reduced stress and frustration for students registered with a permanent disability suggests that registering for academic accommodations may not be inherently stressful and frustrating, but rather, it is the iterative process of registration – which involves the updating and resubmitting disability documentation once the "end date" has passed – that students experience as difficult.

2. Learning and Assessment. Students in the present study reported both benefits and drawbacks to learning to the online environment. These benefits and drawbacks were discussed in relation to synchronous and asynchronous online lectures. In general, students in the sample who reported a greater number of previous concussions, and a greater number of concussion

symptoms, found their online course experiences to be more negative than positive. This was expressed in relation to the exacerbation of concussion symptoms through increased screen time. The benefits of synchronous online courses noted by students in the sample were (a) the human interaction inherent in these "live" synchronous classes; and (b) the fixed weekly time slots (i.e., the predetermined structure that this format of learning provided), which were not present for asynchronous learning formats.

In contrast, the instantaneous "live" feedback and immediate responses by professors and classmates are not possible in asynchronous online classes. Previous research has found that students generally favour synchronous courses due to the direct instructor and classmate feedback inherent to this learning environment (Febriz et al., 2021). Indeed, the learner-teacher interaction involved in synchronous classes (e.g., providing students with immediate real time feedback, and engaging in live online discussions with professors and peers) creates a stronger sense of contribution, enhances student motivation and commitment, and supports better performance in courses as compared to asynchronous online formats (Chen and You, 2007; Hrastinski, 2008, 2010; Malkin et al., 2018). In one study, Febriz et al. (2021) surveyed students from a German university ($N = 3,056$) and found that students experienced a higher degree of satisfaction in terms of felt-support of their basic psychological needs with synchronous compared to asynchronous courses. This was attributed to the live group activities that the synchronous format allows.

Importantly, previous research on the preference of synchronous online experiences as compared to asynchronous online experiences has been conducted within the general population of university students and has not focused on students registered with accessible education, and did not differentiate results depending on disability status. This might explain why the present

study found that students had substantively more ambivalent attitudes towards synchronous courses. Although students in the present study appreciated the interactive nature of online synchronous lectures, participants cited more barriers than benefits within this format – particularly when such courses involved prolonged group work and engagement. It seems, then, that students in the current study had positive affect towards synchronous courses *up to a point*. That is, although group discussions and live time question and answer sessions were appreciated, it is when participation and engagement became prolonged and mandatory (e.g., in the case of the real time, online group assignment cited by P5), symptom exacerbation negated any benefit that this human interaction provided. This finding aligns with extant research which has found that students with disabilities face additional obstacles in the context of remote learning compared to students without disabilities (Fawaz & Samaha, 2020; Sundarasen et al., 2020; Terras et al., 2020).

The main benefits of asynchronous courses reported by students in the sample were the ability to (a) pause and take breaks during classes and (b) schedule their day depending on symptom severity, both of which prevented the exacerbation of concussion symptoms. These benefits align with those experienced by students with learning disabilities (LDs). Petretto et al. (2021) found that students with LDs preferred asynchronous courses due to the increase in autonomy and personalized work schedules that this format allowed, as students were able to work at their preferred time of the day (which prevented the exacerbation of cognitive difficulties), and engage in "flexible learning" (i.e., pausing and resuming a lecture, engaging in class at a preferred time of day). Like the participants in the present study, this ability to engage in flexible learning was experienced as a general advantage of the asynchronous learning format,

and played a role in lowering the risk of students experiencing an exacerbation of disability-related symptoms.

Drawbacks of asynchronous courses cited by participants in the current study consisted of (a) the added amount of course content – and screen time exacerbated concussion symptoms – that this format of classes resulted in; and (b) "felt pressure" in relation to scheduling and completing course work in a timely manner. The additional screen time for asynchronous courses tended to be the result of additional online resources that were often added to online courses, coupled with longer lectures in classes that used this method of delivery. The additional screen time – and the screen-induced symptoms reported by students in asynchronous courses – aligns with previous research; van Ierssel et al. (2020) found that for students with a concussion, the overload and visual stimulation from screens in the context of online learning triggered concussion symptoms. Fabriz et al. (2021) found that compared to synchronous online courses, asynchronous online courses contained significantly more recorded lectures, student presentations, and more discussions via online forums. This finding was reported as neither inherently beneficial nor detrimental for the average student, but the additional screen time required for these additional components of asynchronous classes have clear implications for students with concussion who experience screen-induced symptom exacerbation.

In terms of the scheduling and completion of asynchronous course work, previous research has found that online asynchronous courses require more self-study skills to stay on track; this includes having the motivation, organization, and will (i.e., self-regulation) to follow learning goals (Hartnett, 2015; Wandler & Imbriale, 2017). For the students in the current study experiencing injury-related deficits in motivation, the above finding may explain the difficulties some participants had with the scheduling and completion of their asynchronous courses. For

other participants in the current study, learning how to "pace" oneself seemed to be as important as motivation in terms of success in asynchronous courses. Indeed, the current consensus on alleviating post-concussion symptoms is to resume daily activities "as tolerated" and at a pace that does not exacerbate symptoms or cause new symptoms to emerge (Silverberg et al., 2020). Some participants in the current study had ample motivation yet struggled as a result of attempting to complete multiple asynchronous courses in a single day. This resulted in symptom exacerbation and a loss of productivity. This finding highlights the need to work with students experiencing concussion to reduce felt-pressure in their asynchronous courses – perhaps by assisting them with scheduling – in order to prevent symptom exacerbation from interfering with their academic success.

Regardless of whether classes were synchronous or asynchronous, all students in the study had experience with using Proctortrack for online tests and exams. Students whose professors used more "stringent" Proctortrack settings (e.g., when students were flagged for cheating when they averted their eyes from the screen) experienced more stress, anxiety, and an increase in concussion symptoms during and following online tests and exams. Indeed, many of the in-person exam accommodations allowed for students – such as breaks, hand-written tests, and reduced-distraction testing environments – did not translate well to the online testing environment. This finding aligns with the results found by Terras et al. (2020), who found that students with disabilities did not have access to many of their accommodations while online.

3. Social Factors. In addition to academics, students in the present study also experienced social difficulties post-concussion. For example, students often struggled with balancing their academic and social lives as a result of diminished mental and physical energy levels post-concussion. For many participants, this balance was weighted towards prioritizing

academic responsibilities over social engagement, which often resulted in students sacrificing sociality in order to succeed in their academics. This "balancing act" was also reported in a study by Cahill et al. (2014), who found that university students who experienced TBIs often missed out on non-academic (e.g., social) activities and prioritized academics due to their limited cognitive and physical resources.

A difference found in the present study compared to the Cahill et al. (2014) study relates to the development and implementation of coping strategies, which enabled a better balance between social and academic endeavours. Indeed, in the Cahill et al. (2014) study, participants reported being "forced" to prioritize one demand (i.e., academics) over another (i.e., social life). In the present study, some participants were able to effectively find a reasonably good balance, which they referred to as their "sweet spot." This reduced the negative affect associated with the trade-off between academics and social engagement. Finding the "sweet spot" was accomplished through a process of trial and error, and through a concerted effort by participants to not push themselves when symptoms worsened. This involved scheduling breaks into daily activities, printing hardcopies to limit screen time where possible, and practicing sleep hygiene. Perhaps the participants in the present study who achieved this "sweet spot" were higher in personal resourcefulness – as evidenced by their concerted and effective use of creative coping strategies – which enabled them to meet the challenge of balancing the two domains (Kennett, O'Hagan, & Cezer, 2008).

Having quality social supports was another way that students were able to effectively balance social and academic domains. Support encompasses both structural factors (e.g., relationship status, social support, quality of social contacts) and functional factors (e.g., relationship conflict, communication, intimacy; Bannon et al., 2020). In the present study,

participants who had high levels of adaptive structural and functional support – as evidenced by the presence of supportive significant others, family members, professors, and healthcare practitioners – seemed to adjust better post-concussion. This was seen in the success of these participants in finding an appropriate balance between their academic and social occupations, which tended to lead to fewer and less severe concussion symptoms and ultimately to lower levels of stress and anxiety in relation to their academic and social endeavours.

The above finding aligns with previous research by Bannon et al. (2020) who found that high levels of structural and functional support predict one's ability to adjust to illness and disability, regardless of initial health status, age, gender, and disease type. In terms of concussion more specifically, research has found that social isolation, relationship strain, and psychosocial deficits predict long-term concussion outcomes (Bowen et al., 2010). The above findings might explain why no clear pattern emerged in the present study in terms of either (a) the severity of concussion; or (b) the number of concussions sustained by participants and the magnitude and interference of concussion symptoms on one's daily life. Indeed, some participants sustained a greater number of concussions (>3) and sustained quite severe injuries yet seemed to adapt and cope quite effectively. Perhaps these more positive health outcomes are attributable to the intact social networks and the social support that were present for these participants.

Students in the present study cited support from professors as an important factor in overall feelings of support within the academic environment. Students reported being met with variable responses from professors, on a continuum from undermining to supportive. This aligns with previous research that reported students registered with academic accommodations at university experiencing some professors as flexible and supportive, and others as being more rigid in their approach (Kendall & Tarman, 2016). This provides a possible explanation for the

inconsistent delivery of academic accommodations for students in the present study. Although the documented accommodations may look identical on paper across participants, the extent to which students felt that their accommodations were implemented consistently and in a supportive manner was dependent on the attitudes and beliefs of individual faculty members.

There seem to be far reaching implications of students' felt-support from professors. When students felt supported by at least one professor, they felt more comfortable in asking for support from professors in other classes in turn. In addition, students tended to perform better in classes where they felt supported. These findings corroborate the findings of Haag (2009), who found that when even one faculty member is supportive and accommodating of students' academic needs, those students feel more comfortable in turning to other faculty members for assistance.

One of the ways in which students in the current study experienced a lack of support related to feelings of stigmatization. Students experienced stigmatization in both of its forms, enacted stigma and felt stigma. Enacted stigma is external and relates to experiences of actual discrimination and unfair treatment by others, while felt stigma is internal, and relates to anticipated experiences of discrimination (Scambler, 1998). Previous research has indicated a bi-directional relationship between felt stigma and enacted stigma (see Scambler, 1998; Boyle, 2018), and this was also apparent in the present study. For example, when students in the current study experienced enacted stigma (for example, in the case of discrediting remarks relating to participants not needing academic accommodations because they "look fine"), the fear associated with anticipated future experiences of stigma became amplified (i.e., it contributed to felt stigma). This aligns with Boyle's (2018) finding that in adults who stutter, those who reported

more experiences of enacted stigma in the past year experienced a higher level of felt stigma in turn.

This amplification of felt stigma in the present study often led to participants concealing their disability status from friends, peers, and professors in an attempt to prevent future experiences of enacted stigma from occurring. This relates to Scambler's (1998) finding that individuals with epilepsy worked to conceal their diagnosis in attempts to avoid experiences of enacted stigma. The unfortunate consequence of concealing one's disability status, however, is the lack of support that often results. Indeed, the necessary precursor to registering with academic accommodations and receiving ongoing support is disclosing one's disability status to others. For university students with disabilities, persistence and success in academics has been linked to the presence of – and access to – adequate and appropriate supports and accommodations (Kreider, 2015). For some participants in the present study, the fear of being met with stigmatizing and discrediting responses from others outweighed any potential benefits that might have been derived from talking about one's experiences. This was especially the case among participants who had at least one experience with an unsupportive professor. This aligns with extant research indicating the reluctance to request for accommodations due to the belief that social costs outweigh any performance benefits (Egan & Giuliano, 2009; Baldridge & Viega, 2001; Lee, 1997).

The invisibility of concussion seems to be an important component of student experiences of felt and enacted stigma in the present study. Indeed, when enacted stigma occurred, it often related to a lack of understanding of the student's limitations due to no visible "marker" of the student's disability. This invisibility, coupled with the common misconception that concussions heal in 1-2 weeks for everyone, were important factors that perpetuated enacted

stigma (Hadanny & Efrati, 2016). This aligns with previous research indicating that having a visible disability reduces stigma-related reluctance to seek out accommodations. Indeed, in a study on university students with invisible disabilities, researchers found that there were several demands associated with accessing supports in the university environment; decisions by students to pursue needed supports were impacted by others' disbelief regarding the presence of an "actual disability," perceived stigma, and sense of unfairness from instructors and peers (Kreider, 2015; Zaussinger & Terzieva, 2018). Although students in the present study were actively receiving accommodations, the above findings may explain why many students experienced a hesitancy to disclose their disability status to professors and peers, and request for adjustments to their academic accommodations that would have potentially provided them with additional academic support, especially in the online environment.

4. Individual Factors. Throughout the interviews, participants made reference to the ways that they had changed post-concussion. Distinctions were made between their "pre-concussion self" and their "post-concussion self." The most commonly cited changes related to the "social self" and the "academic self." In terms of the social self, participants reported changes in personality and emotions emerging post-concussion. More specifically, several participants reported that post-concussion, they felt (a) less extraverted; and (b) experienced an increase in negative emotionality (e.g., anxious and depressive symptoms, irritability), both of which were not evident pre-concussion, and which reduced their desire to socialize. This finding relates to several studies which have reported that acquired brain injury can lead to changes in personality (Tate, 2003; Max, 2006; Diaz et al., 2012). In a study by Leonhardt et al. (2016), researchers found that in a group of patients with an acquired brain injury ($n = 114$), a significant decline in extraversion was found compared to controls. This decline in extraversion was found

to be associated with heightened levels of depression and anxiety; this may explain why participants in the present study who reported feeling less extraverted post-concussion also tended to report an increase in negative emotionality, such as depressive and anxious symptoms.

In terms of the academic self, some participants reported a reduction in motivation and an impaired ability to succeed in their studies, both of which were intertwined with their concussion symptoms. This finding coincides with previous research in university students with TBIs, which found that students with TBI experienced difficulties with focus, attention, and memory which impaired academic functioning (Kramer & Davies, 2016). In the current study, participants' inability to achieve academically at their pre-concussion level resulted in frustration and a changed view of their "academic self." Students who were once "overachievers" and set high expectations for their academic performance were required to adjust and lower their expectations to match their post-concussion abilities.

The above findings align with a study by Mealings, Douglas, and Olver (2019), who found that in a sample of university students post-TBI, injury-related changes such as cognitive impairments led to changes in self-concept; this shaped students' aspirations, performance, and goals within their academic occupations. Students in the study were required to reshape and adjust to the way in which their post-injury identity related to their role as a student – a finding that was also evident in the present study. In the present study, however, students also cited having to adjust to the way in which their post-injury identity related to their future career plans. Many students reported having to develop alternate career plans that were more realistic given their new limitations post-concussion (e.g., three students in the sample changed career paths from a medical doctor to less emotionally and physically demanding careers).

This changed view of their academic self was found to impact the way that students spoke about their plans for the future. A continuum of catastrophizing emerged, whereby some participants spoke about the future in a positive, growth-oriented manner, while others displayed a catastrophizing and self-defeating mindset. This catastrophizing mindset has been discussed by Chaput et al. (2015), and encompasses the dimensions of rumination, magnification, and helplessness. In the current study, where students fell on this catastrophizing continuum depended upon whether they displayed personal resourcefulness or had quality social supports; students who were high in social support or personal resourcefulness spoke about their future in more positive, adaptive ways, and did not exhibit a catastrophizing coping style (i.e., rumination, helplessness). They often highlighted the positive changes that resulted from their concussion, and were able to develop a problem-solving orientation if they anticipated difficulties in terms of employment prospects.

The above finding aligns with research linking higher levels of social support to both (a) significant reductions in chronic pain, and (b) use of adaptive coping styles (e.g., cognitive reframing, emotional expression and problem solving; Holtzman et al., 2004; Philpot, Schumann, & Ebbert, 2020). In the present study, participants with quality social supports also tended to speak about their concussion symptoms as manageable and reported fewer symptoms during the course of the interview. This coincides with research by Chaput et al. (2015) which found that post-concussion, lower scores on the Pain Catastrophizing (PC) scale were associated with fewer and less severe concussion symptoms.

Some students in the present study went so far as to speak about the way that their concussion provided them with positive qualities – such as persistence, patience, and empathy – that ultimately help them succeed in their future employment. These participants came to

recognize that they had changed in positive ways that would not have been possible absent their concussion experience. This finding relates to research on "post-traumatic growth" (PTG), which refers to the perceived benefits and positive effects that arise from a traumatic event (Tedeschi & Calhoun, 1995; Powell, Gilson, & Collin 2012). The findings of the current study relating to PTG also coincide with research by Nochi (2000), who found that participants who sustained TBIs experienced new and unexpected lives post-injury, yet reported growing in ways that would not have been possible without having sustained a TBI (e.g., in terms of moral development, gaining insights, empathy).

Students who exhibited less resourcefulness or who had poorer quality social supports tended to speak about the future in a catastrophizing way, with components of rumination (e.g., "I can't stop thinking about how much it hurts") and helplessness (e.g., "there is nothing I can do to reduce the intensity of the pain"). This aligns with the results of Boothby et al. (2004), who found that chronic pain patients receiving less support from their partners scored higher on a measure of catastrophizing. In the context of the present study, this finding speaks to the importance of students feeling adequately supported by university personnel (e.g., professors, academic counsellors) and significant others in order for the student to more readily adopt positive, adaptive coping strategies in the academic environment, and refrain from engaging in catastrophizing coping responses.

Personal resourcefulness also acted as a buffer against catastrophizing. Participants in the study who used displayed personal resourcefulness – in the form of positive self-instructions, creativity, and problem-solving methods – did not display rumination or helplessness (Kennett et al., 2008). These participants developed numerous strategies to mitigate the negative impact that online learning had on their concussion symptoms. For example, when online learning became

difficult, participants high in resourcefulness reverted to a "problem-solving mode" which took the form of developing creative strategies to mitigate the negative impact that online learning had on their concussion symptoms. This aligns with research linking personal resourcefulness to the ability to readily meet life's challenges (Kennett et al., 2008). This is in contrast to participants who were low in personal resourcefulness, who tended to revert to a helplessness-mode wherein concussion symptoms were viewed as an impossible barrier that prevented academic success. This coincides with research indicating that low resourceful individuals are more likely to use catastrophizing as their main coping strategy, while higher resourceful individuals are likely to draw on more numerous, adaptive coping strategies (Kennett et al., 2008).

Limitations and Future Directions.

This study has shed light on the perspectives of university students with concussion who are registered with academic accommodations in the context of the COVID-19 pandemic. Previous research has not investigated the educational experiences of this population, and the recent transition to online learning has posed additional questions in terms of equitable education in the post-secondary setting. The limitations of the current study are discussed below.

The first limitation relates to the generalizability of the findings. As is the case with all qualitative research, the findings reported are specific to the nine participants interviewed. Eight of the nine participants in the study were female, and participants ranged from 19 to 23 years of age; a larger sample of participants with a greater variability of gender and age may have provided additional perspectives. In addition, the results rely on data from a single Canadian university. The AODA mandates accessibility standards to universities in Ontario, yet such standards do vary across provinces (e.g., The Accessibility for Manitobans Act, The Nova Scotia

100

Accessibility Act; AODA, 2021). The results of the current study should be interpreted keeping this variability of accessibility standards across universities in mind.

The second limitation relates to some difficulty with interpretation of the results due to the ongoing COVID-19 pandemic. Since there has been little research in the area of students registered with accessibility services for concussion in the post-secondary setting, it is difficult to determine which barriers are the result of the pandemic-related shift to online learning, and which barriers existed prior to the pandemic. Indeed, since research has demonstrated heightened levels of stress and burnout of university faculty members during the pandemic (e.g. see Abdullah, 2021; Gin, 2021) perhaps some of the barriers found in the present study were amplified due to this context.

Another limitation relates to two students in the sample who were registered with more than one disability. Due to this, although both students were asked to speak to their concussion experiences specifically, the multiple disabilities likely had a combined impact that shaped their perspectives of AE and the university experience.

A possible volunteer bias should also be noted. Students who chose to participate in the study may have differed in characteristics from participants who chose not to take part. For example, the students who chose to participate may have had more manageable concussion symptoms, resulting in their willingness to engage in the interview. Students who were experiencing more severe concussion symptoms may not have participated perhaps due to the severity of their condition. This may have left out additional insights and perspectives that could have resulted from a more diverse neurological profile of participants.

Taken as a whole, the current study has provided a first glimpse into the lived experiences of post-secondary students with a concussion who are receiving academic

accommodations. Student experiences with their accommodations were mixed; there were several benefits and drawbacks experienced by students; the transition to online learning resulted in both new barriers (i.e., test-taking difficulties with Proctortrack) and the amplification of pre-existing barriers (e.g., an exacerbation of concussion symptoms due to increased screen time). Factors that were often beyond students' control – such as faculty and familial support, financial resources – affected whether students felt well-accommodated in their classes and created discrepancies across students in the provision of accommodations. Students who exhibited personal resourcefulness fared better and viewed their accommodations more favourably; students with less personal resourcefulness (which was linked to stigma, anxiety) found self-advocacy and problem solving more difficult, which created barriers to attaining adequate support. These students viewed their academic accommodations less favourably – especially following the transition to online learning.

Implications for Counselling

These findings point to two potential areas for intervention, namely at the individual and systems levels. At the individual level, resourcefulness training, a cognitive-behavioural intervention, could be implemented for students registered with AE. Past research has found this type of training to be effective in facilitating the development of social (help-seeking) and personal (self-help) resourcefulness skills, which can in turn result in improved global health (Eggenschwiler, Preechawong, Roberts, & Morris, 2006; Zauszniewski, 2014, 2016). This training could conceivably help to increase the post-concussion resourcefulness of students, enabling them to reap the benefits associated with social and academic support.

Implications for Institutions

On a systems level, upon initial registration with AE students may benefit from a standardized educational workshop that could encompass various factors: a list of internal and external supports available; information regarding the AODA and the obligation faculty members have in accommodating them (which might help to reduce felt-sigma); an option for assisting students with filling out paperwork as needed; and a list of qualified healthcare practitioners to sign off on the AE registration forms. It would also be beneficial to educate faculty members on concussion and the prolonged symptoms experienced by students with PCS; this might also help in reducing stigma, and result in a more uniform provision of support to students from faculty members.

Finally, it would be worthwhile to consider providing students registered with AE for concussion some leniency in terms of their documented "end date for recovery." All of the students in the current study cited this end date as posing difficulties for them in terms of (a) the reluctance of doctors in selecting an end-date for recovery for them due to the highly variable nature of concussion symptom duration; (b) the additional paperwork and points of contact between AE and healthcare practitioners that is required when the end-date has passed; and (c) the temporary expiry of academic accommodations that occurred for several participants while waiting for their documentation to be updated, which left them without accommodations for a period of time. Due to the above concerns, it would be helpful for AE personnel to use their discretion in terms of extending accommodations for students with concussion on a case-by-case basis.

Combining the above individual and systems level interventions and supports could help in alleviating some of the felt barriers and obstacles involved in obtaining academic

accommodations, and bring post-secondary institutions a step closer to providing truly accessible education.

While this study was the first to systematically report students' perceptions of their academic accommodations post-concussion in the context of the pandemic, it was limited in scope with nine students at one snapshot in time. This study should be repeated with a larger number of students, and with a greater variability of age and gender to determine the generalizability of the results. It would also be useful to implement a mixed methods approach in order to determine statistically the strength of the relationship between the variables in question – for example, between personal resourcefulness and students' satisfaction with their academic accommodations. This would provide stronger evidence for the usefulness of implementing resourcefulness training interventions in the post-secondary setting for students registered with AE for concussion.

References

Abdullah, Z. D. (2021). The perspective of university academics on remote teaching during Covid-19 pandemic. *Malikussaleh Journal of Mathematics Learning, 4*(2), 62–69. doi:10.29103/mjml.v4i2.5706

Adler, J. M., Lodi-Smith, J., Phillippe, F. L., & Houle, I. (2016). The incremental validity of narrative identity in predicting well-being: A review of the field and recommendations for the future. *Personality and Social Psychology Review, 20*, 142-175.

Alase, A. (2017). The Interpretative Phenomenological Analysis (IPA): A Guide to a Good Qualitative Research Approach. *International Journal of Education & Literacy Studies*, *5*(2). doi:10.7575/aiac.ijels.v.5n.2p.9

André-Morin, D., Caron, J. G., & Bloom, G. A. (2017). Exploring the unique challenges faced by female university athletes experiencing prolonged concussion symptoms. *Sport, Exercise, and Performance Psychology, 6*(3), 289-303. doi:10.1037/spy0000106

Bahkir, F., & Grandee, S. (2020). Impact of the COVID-19 lockdown on digital device-related ocular health. *Indian Journal of Ophthalmology, 68*(11), 2378–2383. Doi:10.4103/ijo.IJO_2306_20

Baldrige, D. C., & Viega, J. F. (2001). Toward a greater understanding of the willingness to request an accommodation: Can requesters' beliefs disable the Americans with Disabilities Act? *Academy of Management Review, 26*, 85-99.

Bannon, S. M., Greenberg, J., Goldson, J., O'Leary, D., & Vranceanu, A. M. (2020). A Social Blow: The Role of Interpersonal Relationships in Mild Traumatic Brain Injury. *Psychosomatics*, *61*(5), 518–526. doi:10.1016/j.psym.2020.04.003

Benner, P. (1994). The Tradition and Skill of Interpretive Phenomenology in Studying Health,

    Illness, and Caring Practices. In *Interpretive Phenomenology: Embodiment, Caring, and*

    Ethics in Health and Illness. London: SAGE

Boothby, J. L., Thorn, B. E., Overduin, L. Y., & Charles Ward, L. (2004). Catastrophizing and

    perceived partner responses to pain. *Pain, 109*(3), 500–506.

    doi:10.1016/j.pain.2004.02.030

Bowen, C., Hall, T., Newby, G., Walsh, B., Weatherhead, S., & Yeates, G. (2009). The impact of

    brain injury on relationships across the lifespan and across school, family and work

    contexts. *Hum Syst*, *20*, 65–80.

Bowen, C., Palmer, S., & Yeates, G. (2010). *A Relational Approach to Rehabilitation: Thinking*

    About Relationships After Brain Injury. New York, NY: Karnac Books

Brooks, E. A., Unruh, A., & Lynch, M. E. (2015). Exploring the lived experience of adults using

    prescription opioids to manage chronic non-cancer pain. *Pain Research & Management,*

    20(1), 15-22. doi:10.1155/2015/314184

Brown, C. (1997). Psychometric properties of the Depression Anxiety Stress Scales (DASS) in

    clinical samples. *Behaviour Research and Therapy, 35*(1), 79–89. doi:10.1016/s0005-

    7967(96)00068-x

Brown, R., Moloney, M., & Brown, J. (2018). Gender differences in the processes linking public

    stigma and self-disclosure among college students with mental illness. *Journal of*

    Community Psychology, 46, 202–212. doi:10.1002/jcop.21933

Bruce, C., & Aylward, M. L. (2021). Disability and Self-Advocacy Experiences in University

    Learning Contexts. *Scandinavian Journal of Disability Research, 23*(1), 14–26.

    doi:10.16993/sjdr.741

Burgstahler, S., & Doe, T. (2006). Improving postsecondary outcomes for students with

    disabilities: Designing professional development for faculty. *Journal of Postsecondary*

    Education and Disability.

Cahill, S., Rotter, J., Lyons, K., & Marrone, A. (2014). Survivors of brain injury: The narrative

    experiences of being a college or university student. *Canadian Journal of Occupational*

    Therapy, 81(2), 93–101. doi:10.1177/0008417414533185

Chaput, G., Lajoie, S. P., Naismith, L. M., & Lavigne, G. (2016). Pain Catastrophizing

    Correlates with Early Mild Traumatic Brain Injury Outcome. *Pain Research and*

    Management, 2016(7). doi:10.1155/2016/2825856

Conrod, P. (2006). The role of anxiety sensitivity in subjective and physiological responses to

    social and physical stressors. *Cognitive Behaviour Therapy, 35*(4).

    doi:10.1080/16506070600898587

Deckoff-Jones, A., & Duell, M. (2018). Perceptions of Appropriateness of Accommodations for

    University Students: Does Disability Type Matter? *Rehabilitation Psychology, 63*(1), 68–

    76. doi:10.1037/rep0000213

Diaz, A. P., Schwarzbold, M. L., Thais, M. E., Hohl, A., Bertotti, M. M., Schmoeller, R., …

    Walz, R. (2012). Psychiatric Disorders and Health-Related Quality of Life after Severe

    Traumatic Brain Injury: A Prospective Study. *Journal of Neurotrauma, 29*(6), 129–1037.

    doi:10.1089/neu.2011.2089

Egan, P. M., & Giuliano, T. A. (2009). Unaccommodating attitudes: perceptions of students as a

    function of academic accommodation use and test performance. *North American Journal*

    of Psychology, 11(3), 487–500.

Fabriz, S., Mendzheritskaya, J., & Stehle, S. (2021). Impact of Synchronous and Asynchronous Settings of Online Teaching and Learning in Higher Education on Students' Learning Experience During COVID-19. *Frontiers in Psychology, 12*, 733554–733554. doi:10.3389/fpsyg.2021.733554

Fawaz, M., & Samaha, A. (2020). E-learning: Depression, anxiety, and stress symptomatology among Lebanese university students during COVID-19 quarantine. *Nursing Forum,, 56*(1), 52–57.

Fichten, C., Barile, M., Asuncion, J., Fossey, M., Robillard, C., & Lamb, D. (2003). Canadian post-secondary students with disabilities: where are they? *Canadian Journal of Higher Education, 33*(3), 71–113.

Flaherty, M., & Roussy, A. (2014). A failed game changer: post-secondary education and the Accessibility for Ontarians with Disabilities Act. *Education Law Journal, 24*(1), 1-23.

Frost, G., & Connolly, M. (2018). Managing the transition from concussion to return to learn in post-secondary education: strategies based on principles of UDL. *Collected Essays on Learning and Teaching, 11*. doi:10.22329/celt.v11i0.4976

Gin, L. E., Guerrero, F. A., Brownell, S. E., & Cooper, K. M. (2021). COVID-19 and Undergraduates with Disabilities: Challenges Resulting from the Rapid Transition to Online Course Delivery for Students with Disabilities in Undergraduate STEM at Large-Enrollment Institutions. *CBE Life Sciences Education, 20*(3). doi.org/10.1187/cbe.21-02-0028

Goffman, E. *Stigma: the management of spoiled identity*. Harmondsworth: Penguin, 1963.

Government of Ontario. (2014). Accessibility. http://www.ontario.ca/government/accessibility. Accessed 22 October 2020.

Gray, A. J. (2002). Stigma in Psychiatry. *Journal of the Royal Society of Medicine, 95* (2), 72-76. doi:10.1258/jrsm.95.2.72

Haag, H. K. L. (2009). Exploring the experience of university students coping with acquired or traumatic brain injury (Master's thesis). Waterloo, ON: Wilfred Laurier University. Retrieved from http://scholars.wlu.ca/etd/911

Hadanny, A. & Efrati, S. (2016). Treatment of persistent post-concussion syndrome due to mild traumatic brain injury: current status and future directions. *Expert Review of Neurotherapeutics, 16*(8), 875-887. doi:10.1080/14737175.2016.1205487

Hartnett, M., Alison St. George, & on, J. (2011). Examining motivation in online distance learning environments: Complex, multifaceted and situation-dependent. *International Review of Research in Open and Distance Learning, 12*(6).

Hefferon, K., Grealy, M., & Mutrie, N. (2008). The perceived influence of an exercise class intervention on the process and outcomes of post-traumatic growth. *Mental Health and Physical Activity, 1*(1), 32-39. doi:10.1016/j.mhpa.2008.06.003

Hindes, Y., & Mather, J. (2007). Inclusive Education at the Post-Secondary Level: Attitudes of Students and Professors. *Exceptionality Education Canada, 17*(1), 107-128.

Holtzman, S., Newth, S., & Delongis, A. (2004). The Role of Social Support in Coping with Daily Pain among Patients with Rheumatoid Arthritis. *Journal of Health Psychology, 9*(5), 677–695. doi:10.1177/1359105304045381

Hrastinski, S. (2008). Asynchronous and synchronous e-learning: A study of asynchronous and synchronous e-learning methods discovered that each supports different purposes. *EDUCAUSE Quarterly*, *31*, 51–55.

Hrastinski, S. (2010). How Do e-Learners Participate in Synchronous Online Discussions?

    Evolutionary and Social Psychological Perspectives. In N. Kock (Ed.), *Evolutionary*

    Psychology and Information Systems Research: Vol 24 (pp. 119–147). doi:10.1007/978-

    1-4419-6139-6_6

Husserl, E., & Gibson, W. R. B. (1931). *Ideas : general introduction to pure phenomenology*.

    London: Allen and Unwin.

Kendall, L. (2016). Higher education and disability: Exploring student experiences. *Cogent*

    Education, 3(1), 1256142–. doi:10.1080/2331186X.2016.1256142

Kennett, D. J., O'Hagan, F. T., & Cezer, D. (2008). Learned Resourcefulness and the Long-Term

    Benefits of a Chronic Pain Management Program. *Journal of Mixed Methods*

    Research, *2*(4), 317–339. doi:10.1177/1558689808319732

King, N. S., Crawford, S., Wenden, F. J., Moss, N. E. G., & Wade, D. T. (1995). The Rivermead

    Post-concussion Symptoms Questionnaire: A Measure of Symptoms Commonly

    Experienced after Head Injury and its Reliability. *Journal of Neurology*, *242*(9), 587-592.

Kramer, M., & Davies, S. (2016). Challenges and Supports During the Transition from High

    School to College for Students with Traumatic Brain Injuries. *Contemporary School*

    Psychology, 20(4), 370–382. doi:10.1007/s40688-016-0095-9

Kreider, C. M., Bendixen, R. M., & Lutz, B. J. (2015). Holistic Needs of University Students

    with Invisible Disabilities: A Qualitative Study. *Physical & Occupational Therapy*,

    35(4), 426–441. doi:10.3109/01942638.2015.1020407

Larkin, M. & Thompson, A. (2012). Interpretative phenomenological analysis. In Thompson, A.

    & Harper, D. (Eds.), *Qualitative research methods in mental health and psychotherapy: a*

    guide for students and practitioners (pp.99-116). John Wiley & Sons: Oxford.

Leary, M. R., & Kowalski, R. M. (1990). Impression Management: A Literature Review and

    Two-Component Model. *Psychological Bulletin, 107*(1), 34–47. doi.org/10.1037/0033-

    2909.107.1.34

Lee, F. (1997). When the going gets tough, do the tough ask for help? Help-seeking and power

    motivation in organizations. *Organizational Behavior and Human Decision Processes,*

    72, 336-363.

Leonhardt, A., Schmukle, S. C., & Exner, C. (2016). Evidence of Big-Five personality changes

    following acquired brain injury from a prospective longitudinal investigation. *Journal of*

    Psychosomatic Research, 82, 17–23. doi:10.1016/j.jpsychores.2016.01.005

Li, X., Theisen, A., Seo, C., & Sibley, D. S. (2018). Resourcefulness: Current Insights and

    Future Directions for Family Scholars and Clinicians. *The Family Journal (Alexandria,*

    Va.), *26*(4), 433–443. doi:10.1177/1066480718806521

Lovibond, S.H. & Lovibond, P.F. (1995). *Manual for the Depression Anxiety & Stress Scales.*

    (2nd Ed.). Sydney: Psychology Foundation.

Malkin, A., Rehfeldt, R. A., & Shayter, A. M. (2016). An Investigation of the Efficacy of

    Asynchronous Discussion on Students' Performance in an Online Research Method

    Course. *Behavior Analysis in Practice, 11*(3), 274–278. doi:10.1007/s40617-016-0157-5

Maruta, L.-B. (2018). Concussion Subtype Identification With the Rivermead Post-concussion

    Symptoms Questionnaire. *Frontiers in Neurology, 9*, 1034–1034.

    doi:10.3389/fneur.2018.01034

Max, J. E., Levin, H. S., Schachar, R. J., Landis, J., Saunders, A. E., Ewing-Cobbs, L., …

    Dennis, M. (2006). Predictors of personality change due to traumatic brain injury in

    children and adolescents six to twenty-four months after injury. *The Journal of*

Neuropsychiatry and Clinical Neurosciences, 18(1), 21–32.
doi:10.1176/appi.neuropsych.18.1.21

Mealings, M., Douglas, J., & Olver, J. (2019). Is it me or the injury: Students' perspectives on adjusting to life after traumatic brain injury through participation in study. *Neuropsychological Rehabilitation*, doi:10.1080/09602011.2019.1574231

Meilleur, M., & Ontario. (2006). Accessibility for Ontarians with Disabilities Act, 2005 (AODA): 2006 annual report. Toronto: Ministry of Community and Social Services.

Mullins, L., & Preyde, M. (2013). The lived experience of students with an invisible disability at a Canadian university. *Disability & Society*, *28*(2), 147–160. doi:10.1080/09687599.2012.752127

Oliver, M. (2013). The social model of disability: thirty years on. *Disability & Society, 28*(7), 1024–1026. doi:10.1080/09687599.2013.818773

O'Rourke, D. J., Smith, R. E., Punt, S., Coppel, D. B., & Breiger, D. (2017). Psychosocial correlates of young athletes' self-reported concussion symptoms during the course of recovery. *Sport, Exercise, and Performance Psychology*, *6*(3), 262-276. doi:10.1037/spy0000097

Parachute's protocol for Return to Learn after a concussion. (2019). Retrieved October 22, 2020, from Parachute website: https://parachute.ca/wp-content/uploads/2019/06/Return-to School-Strategy.pdf

Petretto, D. R., Carta, S. M., Cataudella, S., Masala, I., Mascia, M. L., Penna, M. P., … Masala, C. (2021). The Use of Distance Learning and E-learning in Students with Learning Disabilities: A Review on the Effects and some Hint of Analysis on the Use during

COVID-19 Outbreak. *Clinical Practice and Epidemiology in Mental Health, 17*(1), 92–102. doi:10.2174/1745017902117010092

Phillips, A., Terras, K., Swinney, L., & Schneweis, C. (2012). Online disability accommodations: Faculty experiences at one public university. *Journal of Postsecondary Education and Disability, 25*(4), 331–344

Philpot, L. M., Schumann, M. E., & Ebbert, J. O. (2020). Social Relationship Quality Among Patients With Chronic Pain: A Population-Based Sample. *Journal of Patient Experience, 7*(3), 316–323. doi:10.1177/2374373519862934

Pietkiewicz, I. & Smith, J. (2014). A practical guide to using Interpretative Phenomenological Analysis in qualitative research psychology. *CPPJ, 20*, 7-14. doi:10.14691/CPPJ.20.1.7.

Prince, C. & Bruhns, M. E. (2017). Evaluation and Treatment of Mild Traumatic Brain Injury: The Role of Neuropsychology, *brain sciences, 7*(8). doi:10.3390/brainsci7080105

Reaume, G. (2014). Understanding critical disability studies. *Canadian Medical Association Journal (CMAJ), 186*(16), 1248–1249. doi:10.1503/cmaj.141236

Scambler, G. (1998). Stigma and Disease: Changing Paradigms. *The Lancet, 352*(9133), 1054-5. doi:10.1016/S0140-6736(98)08068-4

Shaw, R., Burton, A., Xuereb, C. B., Gibson, J., & Lane, D. (2014). *Interpretative phenomenological analysis in applied health research*. London: SAGE Publications.

Silverberg, N. D., Iaccarino, M. A., Panenka, W. J., Iverson, G. L., McCulloch, K. L., Dams-O'Connor, K., … Weyer Jamora, C. (2020). Management of Concussion and Mild Traumatic Brain Injury: A Synthesis of Practice Guidelines. *Archives of Physical Medicine and Rehabilitation, 101*(2), 382–393. doi:10.1016/j.apmr.2019.10.179

Smith, S. A., Woodhead, E., & Chin-Newman, C. (2021). Disclosing accommodation needs: exploring experiences of higher education students with disabilities. *International Journal of Inclusive Education, 25*(12),1358–1374. doi:10.1080/13603116.2019.1610087

Smith, J. A. (2011). Evaluating the contribution of interpretative phenomenological analysis. *Health Psychology Review, 5*(1), 9–27. doi:10.1080/17437199.2010.510659

Statistics Canada. (2017). *A demographic, employment, and income profile of Canadians with disabilities aged 15 years and over, 2017,* Catalogue no. 89-654-X2018002. Retrieved from: https://www150.statcan.gc.ca/n1/en/pub/89-654-x/89-654-x2018002-eng.pdf?st=ZHCkjjrC

Sullivan, M. J. L., Bishop, S. R., & Pivik, J. (1995). The Pain Catastrophizing Scale: Development and validation. *Psychological Assessment, 7*(4), 524-532. doi:10.1037/1040-3590.7.4.524

Sundarasen, S., Chinna, K., Kamaludin, K., Nurunnabi, M., Baloch, G. M., Khoshaim, H. B., ... & Sukayt, A. (2020). Psychological impact of COVID-19 and lockdown among university students in Malaysia: Implications and policy recommendations. International *Journal of Environmental Research and Public Health, 17*(17), 6206.

Supriya, K., Mead, C., Anbar, A, Caulkins, J., Collins, J., Cooper, K., LePore, P., Lewis, T., Pate, A., Scott, R., & Brownell, S. (2021). COVID-19 and the abrupt shift to remote learning: Impact on grades and perceived learning for undergraduate biology students. In *Medical Letter on the CDC & FDA*NewsRX LLC. doi:10.1101/2021.03.29.437480

Tate, R. L. (2003). Impact of pre-injury factors on outcome after severe traumatic brain injury: Does post-traumatic personality change represent an exacerbation of premorbid traits? *Neuropsychological Rehabilitation, 13*(1-2), 43–64. doi:10.1080/09602010244000372

Tedeschi, R.G., & Calhoun, L.G. (1995). *Trauma and transformation: Growing in the aftermath of suffering.* Thousand Oaks, CA: Sage.

Terras, K., Anderson, S., & Grave, S. (2020). Comparing disability accommodations in online courses: A cross-classification. *Journal of Educators Online, 17*(2).

Terzieva, B., Dibiasi, A., Kulhanek, A., Zaussinger, S., & Unger, M. (2016). *Situation of students with disabilities, chronic diseases and health Impairment* [Quantitative part of Student Social Survey 2015 report]. Vienna: IHS.

van Ierssel, J., O'Neil, J., Sveistrup, H., Marshall, S., & Graham, I. (2020). A qualitative study of persons with persistent post-concussion symptoms and clinicians with concussion expertise to inform the development of a concussion-specific questionnaire. *Disability and Rehabilitation,* 1–12. doi:10.1080/09638288.2020.1743772

Van Manen, M. (1990). *Researching lived experience : human science for an action sensitive pedagogy / Max van Manen*. London, Ont: Althouse Press.

Wandler, J., & Imbriale, W. (2017). Promoting college student self-regulation in online learning environments. *Online Learning, 21*(2). doi:10.24059/olj.v21i2.881.

Wang, C., Zhao, H., & Zhang, H. (2020). Chinese college students have higher anxiety in new semester of online learning during COVID-19: A machine learning approach. *Frontiers in Psychology, 11*, 587413–587413. doi:10.3389/fpsyg.2020.587413

World Health Organization. (2020). Coronavirus (COVID-19) events as they happen. Retrieved January 17, 2022, from www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen

Zaussinger, S. & Terzieva, B. (2018). Fear of stigmatisation among students with disabilities in Austria. *Social Inclusion 6*(4), 182-193.

Zauszniewski, J. A., Eggenschwiler, K., Preechawong, S., Roberts, B. L., & Morris, D. L. (2006). Effects of teaching resourcefulness skills to elders. *Aging & Mental Health, 10*(4), 404–412. doi:10.1080/13607860600638446

Zauszniewski, J. A., & Bekhet, A. K. (2011). Measuring Use of Resourcefulness Skills: Psychometric Testing of a New Scale. *ISRN Nursing*, *2011*, 787363–787367. doi:10.5402/2011/787363

Zauszniewski, J. A., Musil, C. M., Burant, C. J., & Au, T.-Y. (2014). Resourcefulness Training for Grandmothers: Preliminary Evidence of Effectiveness: Grandmothers' Resourcefulness Training. *Research in Nursing & Health, 37*(1), 42–52. doi:10.1002/nur.21574

Zauszniewski, J. A., Lekhak, N., Napoleon, B., & Morris, D. L. (2016). Resourcefulness Training for Women Dementia Caregivers: Acceptability and Feasibility of Two Methods. *Issues in Mental Health Nursing, 37*(4), 249–256. doi:10.3109/01612840.2015.1119222

Zhang, Landmark, L., Reber, A., HsienYuan Hsu, Kwok, O., & Benz, M. (2010). University Faculty Knowledge, Beliefs, and Practices in Providing Reasonable Accommodations to Students With Disabilities. *Remedial and Special Education, 31*(4), 276–286. doi:10.1177/0741932509338348

Appendix A

Western

Semi-Structured Interview

1. How has your injury influenced your experiences at university (e.g., socially, academically)?
    a. Can you identify any social or academic obstacles that you have faced over the course of your studies, specifically related to your injury?
    b. How have you overcome these obstacles?
2. Can you describe any barriers that you encountered in the process of registering with AEW?
    a. How long did it take for you to be accommodated for your injury?
3. In general, do you feel well accommodated for your concussion, given the shift to online learning?
    a. How does this compare to your experience of accommodations at Western prior to the transition to online learning?
    b. How have the professors within your courses responded to your accommodations? [Have they been understanding? Have you met with resistance to your accommodation requests?]
    c. Have you felt supported by your professors, post-concussion? Why or why not?
4. Do you find online learning more difficult than in person classes? Why or why not?
    a. What are the major challenges you face related to your concussion with classes being online?
5. Have you experienced any benefits to classes being online compared to in person?
6. Do your peers know that you are registered with AEW? If so, how did they respond?
7. How do you think your injury will impact your ability to graduate with your chosen degree?
    a. Have you had to change your career plans based on your injury?
    b. How do you think your injury will impact your future employment prospects?
    c. How do you think your injury will impact on your future relationships?

Appendix B

Documentation of Sensory, Physical and Medical Disabilities

Accessible Education

1151 Richmond Street, London, Ontario, Canada, N6A 3K7
t: 519 661 2147   f: 519 850 2584
w: http://academicsupport.uwo.ca/   e: aew@uwo.ca

___

Purpose of this form

Accessible Education (AE) requires documentation from a licensed health care professional, who is qualified to communicate a diagnosis and has in-depth knowledge of a student's condition, in order to arrange academic accommodation and/or related services. Information on this form also may be used toassess a student's eligibility for financial support. Documentation should be as complete as possible in order to facilitate AE's assessment of a student's request for services.

___

To be completed by student

Student Name: _____ **Date of Birth:** _____ / _____ / _____

                                                                                    (Year/Month/Day)

Student Number: _____

I authorize the professional named below to disclose to Accessible Education (AE) information on thisform and additional or clarifying information that is necessary for provision of disability services at Western University. I also authorize AE to communicate with this professional in order to obtain information that is relevant to provision of AE's services.

Date : _____ Student Signature : _____

___

To be completed by licensed health care professional

Name (please print):   Registration Number:

_____   _____

Address of medical professional:

_____   Telephone # : _____

_____   Fax # : _____

Profession:
■ Family Physician   ■ Pediatrician   ■ Other_____

Signature: Date:

_____   _____

Documentation of Sensory, Physical and Medical Disabilities

Diagnostic Statement

Please provide a clear diagnostic statement or indicate that the student's difficulties do not meet criteria for a diagnosis. If more than one condition is present that may affect academic progress, please specify all relevant conditions.

Diagnosis

_____

_____

Date of the condition's onset: _____

Date of last clinical assessment: _____

How long have you been treating this student? _____

Statement of Permanent Disability

The designation of permanent disability has legal implications and is used in determining a student's eligibility for government grants and loans**.** Please refer to the following definition of permanent disability when answering the question below it.

Permanent disability is defined as a **functional limitation** due to a disorder that restricts a person's ability to perform daily activities necessary to participate in post-secondary studies and is expected to remain with the person for the person's expected life.

In your professional opinion, does the student's condition meet criteria for a permanent disability as defined above?

Yes □ No □

Please check the appropriate description(s) as they apply to this student's condition.
(Check all that apply)

□   Not a disabling condition in the current academic setting

□   Temporary disability: anticipated duration from _____ to _____

□   Permanent disability with ongoing chronic symptoms

□   Permanent disability with episodic symptoms. Is the student currently experiencing symptoms? _____

□   Updated documentation regarding disability status should be reassessed every _____

    because of the changing nature of the illness

Abilities & Activities	No Impact	Mild Impact	Moderate Impact	Severe Impact	Don't Know
To what degree does the disability directly affect the following physical and sensory capacities?					
Hearing					
Speech					
Vision					
Mobility					
Dexterity					
To what degree does the disability directly affect the following cognitive abilities?					
Working memory					
Long-term memory					
Speed of information processing					
Language use					
Rational thinking and reasoning					
To what degree is the disability associated with any of the following symptoms?					
Pain					
Fatigue					
Poor Concentration					
To what degree does the disability create functional limitations specific to the following academic tasks when adaptations have _not_ been made or assistive devices are _not_ used?					
Handwriting					
Typing or keyboarding					
Listening					
Reading					
Speaking					

Does the disability affect the student's tolerance for:

☐ sitting for less than 50 minutes

☐ sitting for more than 50 minutes

☐ standing for more than 15 minutes

☐ walking (cannot walk more than_____meters at a time)

☐ lifting (cannot lift more than_____kg)

☐ reaching above shoulder level

☐ twisting: neck, back, knees, wrists (please circle all that apply)

☐ bending: neck, back, knees, wrists (please circle all that apply)

☐ performing activities of daily living (please list):

If possible, please estimate how often the effects of the student's disability may necessitate his or herabsence from classes:

□ < 1 day per month □ 2-5 days per month □ >5 days per month

Is it your opinion that the student will be able to meet the demands of a full course load (15-25 hours of lectures, labs, and/ or tutorial meetings per week plus 25-30 hours of study time per week? □ yes □ no

If you answer is no, please estimate the maximum amount of time that the student would be able to spendin these activities: approximately _____ hours per week.

Will you be monitoring this student on a regular basis while he or she is attending university?

□ yes □ no

Are there situations or activities that may worsen this student's condition?

Medication Information

Please list medications that the student is taking.

Brand or Generic Name	*Dosage and Frequency*	*Adverse effects **currently experienced** that may affect academic functioning*

Additional Information:

Thank you for taking the time to complete this form.

MARY PRIOR

CLINICAL GOALS

I am a passionate Master of Counselling Psychology student at Western University. My aim is to use the knowledge and skills that I have gained over the past several years throughout my course work and research endeavors in an applied clinical setting, where I can truly make a difference in the lives of clients.

EDUCATION

MA   Western University, Counselling Psychology   In Progress
Relevant Courses: Practicum in Counselling, Research Design in Counselling, Assessment in Counselling, Cross-Cultural Counselling, Systemic Practice
Supervisors: Dr. Andrew Johnson and Dr. Susan Rodger

B.Sc.   Trent University, Psychology   Graduate 2020
Relevant Courses: Advanced Statistical Analysis, Advanced Abnormal Psychology, Behaviour Modification, Personality Theory, Motivation and Emotion

---

HONORS AND AWARDS

Frederick Banting and Charles Best Canada Graduate Scholarship-Master's (CGS M)
Western University, $17,500 over 12 months   2020 - 2021

Entrance scholarship - Graduate Student Assistant   2020
Psychology, Western University, $7,000

CLINICAL EXPERIENCE

Vanier Children's Mental Wellness, London, ON   September 2021 to present
.**Focused Family Therapy Intern**

- Collaborated with children and families to address various presenting issues (emotion dysregulation, aggression, anxiety, suicidality, grief, attachment disruptions) to improve individual and family functioning.
- Used a systems approach with the child, family, and significant others involved with the family (CAS, school board personnel). Completed comprehensive assessments using the ChYMHS+ and clinical formulations for each client.
- Consulted with a multi-disciplinary team to create a tailored treatment plan for complex cases.
- Used a single-session brief counselling approach during weekly 'TalkIN' sessions.

Vanier Children's Mental Wellness, London, ON.   January 2021 to present
Group Co-Facilitator
- Co-facilitated a weekly Circle of Security group – an early intervention program for parents.
- Educated and counselled parents on this evidence-based, attachment-focused method of parenting.

Ontario Shores Centre for Mental Health Sciences, Whitby, ON   2019 - 2020
Volunteer
- Forensic Assessment Unit (FAU)
  - Visited one-on-one with clients; took part in recreational activities with clients.
- Drop-In Centre
  - Engaged in friendly conversation with clients; planned and took part in recreational games; prepared coffee and refreshments.

RESEARCH EXPERIENCE:

Western University, London, ON   2020 - 2022
Graduate Student Assistant, School of Health Studies (Research Project for Thesis)
- Develop and administer Qualtrics survey to students registered with Accessible Education at Western (AEW) who have experienced concussion(s).
- Collect, code, and transcribe data from one-on-one semi-structured interviews with students at Western who are receiving academic accommodations for concussion.
  Supervisor: Dr. Andrew Johnson, Acting Director of School of Health Studies

---

THESIS, PAST AND PRESENT:

My current research examines the lived experiences of post-secondary students who have sustained concussion(s) and who are receiving academic accommodations at Western University. The goal is to mitigate felt barriers and obstacles involved in the process of attaining academic supports so that truly equitable access to education can become a reality in post-secondary settings.

Western University, London, ON   2020 - 2022
Master's Thesis Research: Academic Accommodations for University Students Post-Concussion, Examining Their Lived Experiences
Supervisors: Dr. Andrew Johnson and Dr. Susan Rodger

Trent University, Oshawa, ON   2019 - 2020
Undergraduate Honours Research: "The Effect of Concussion on Athlete Identity," Department of Psychology
- Conducted an Ethics proposal and received approval from departmental committee.
- Completed the Tri Council Ethics Tutorial for research on human subjects.
- Devised a proposal of research project.
- Recruited eligible participants from the community.
- Conducted participant interviews and transcribed audio recorded data.
- Wrote up final results and presented poster of findings.

- Supervisor: Dr. Fergal O'Hagan

PROFESSIONAL AND VOLUNTEER EXPERIENCE

Western University, London, ON
- Orientation coordinator for incoming students   2021
  - Planned and executed orientation events for first year M.A Counselling Psychology students
  - Provided presentation outlining program milestones, timing and nature of courses, and choosing a potential thesis supervisor

ADMINISTRATIVE EXPERIENCE

Clerk at The Regional Municipality of Durham, Whitby, ON   2016
Employment
- Collected information from clients for initial applications for Ontario Works (i.e., social assistance) at Central Intake and scheduled applications.
- Provided administrative support to Income and Employment Support teams.
- Input, maintained and organized data management reports to ensure information was correct in the database and confidentiality was upheld.

PRESENTATIONS

Paper Presentation, "Identity Challenges Post-Concussion: An Overlooked Consequence of Concussion in Youth (expanded version)," Department of Psychology's "Work and Health" End-of-Year Research Symposium, April 2019.

Paper Presentation, "Identity Challenges Post-Concussion: An Overlooked Consequence of Concussion in Youth.," Trent University's Annual Research Symposium, March 2019.

QUALIFICATIONS

Tri Council Ethics Tutorial for Research on Human Subjects
Counselling on Access to Lethal Means (CALM) Certification
Emergency First Aid with CPR + AED
Mental Health First Aid
Workplace Conflict Leadership Development Training
Conflict-Anger-Learning Communication-Mediation (CALM) Training
Young Worker Awareness Program