

RESILIENCE/THRIVING IN POST-SECONDARY STUDENTS WITH DISABILITIES

An Exploratory Study

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Acknowledgements

The authors would like to acknowledge funding from the National Centre for Student Equity in Higher Education (NCSEHE) at Curtin University.

We would like to thank Professor Patrick Danaher, Associate Professor Peter McIlveen, and Dr Harsha Perera from the University of Southern Queensland (USQ), and Professor Sue Trinidad, Professor John Phillimore, and the two anonymous reviewers from the NCSEHE for their input and valuable comments on the earlier draft.

We also thank Ms Sonya Winterbotham and Dr Kim Sankey for their excellent data analysis support. We especially thank Ms Shaunuagh Brady, Manager Disability Resources at USQ, who assisted us to contact the potential study participants.

Finally, we would like to thank everyone else including the participants and their family members, who assisted us to complete this study.

The views and opinions expressed in this document are those of the research team and do not necessarily reflect the opinions or views of the Australian Government, state and territory governments or NCSEHE. Any interpretation of data is the responsibility of the researchers.

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Executive Summary

Across most universities in Australia, students with a disability have been enrolling in greater numbers than ever before. However, the scholarship and research on equity in the Australian higher education sector has largely ignored the needs of these students.

The overarching goal of this study was to explore and describe the lived experiences of students with a self-disclosed disability enrolled at a regional university in Australia. Given the paucity of research on the subject in Australia, the study was conducted in two stages. In stage one, a web-based survey was used to gather data on socio-demographics, disability characteristics, career optimism, wellbeing, academic satisfaction, and resilience from students with self-disclosed disability at one regional Australian university. In stage two, interviews were conducted with 30 students with self-disclosed disabilities (GPA \geq 5.5) to gain an in-depth understanding of the strategies used by these students to negotiate barriers to participation in higher education settings.

Descriptive statistics and Structural Equation Modelling were used to analyse the survey data. Thematic analysis was done with the interview data. A description of the key findings are listed below. Due to the small sample size and self-reported data, the findings need to be interpreted with some caution. Additionally, this study was conducted at one University, and hence findings cannot be generalised to other universities in Australia.

Key Findings: Stage 1 – Web-based Survey

- The sample included 274 students who had self-disclosed their disability either during the university enrolment process and/or registered with the university's Disability Resources Office (DRO) upon enrolment.
- The sample predominantly consisted of mature-age university students with a self-reported disability, a group that has not received much attention in the literature. About 70 percent of these students were above 30 years of age. The age of the participants ranged from 17 to 72 years, with an average age of 38 years. Additionally, the sample had more female students (n = 178; 65%) than male students (n = 96; 35%).
- Over a third of the sample (n = 94; 34%), who had self-identified their disability/condition during the university enrolment process, reported not self-disclosing their disability to the DRO. Furthermore, nearly 50 percent of the sample (n = 89) who self-disclosed their disability to the DRO reported not using disability-related support services since their time of self-disclosure.
- Students with a self-reported psychological condition constituted the largest group of survey respondents. Thirty-three percent of the sample (n = 90) self-identified with a psychological condition as their primary disability category. Further, fifty-five percent of the sample (n = 150) had one or more comorbid conditions. Overall, the sample included more students with self-reported "hidden disabilities" than those with sensory or physical "visible" disabilities.
- In this sample, three out of every four students reported pursuing their education online and/or via an online/on-campus option (n = 208; 76%).
- Students with self-reported GPA \geq 5.5 scored significantly higher on resilience and academic satisfaction scales, than students with self-reported GPA $<$ 5.5. Although scores on career optimism and wellbeing scale were higher for students with GPA \geq 5.5 than those with GPA $<$ 5.5, the difference did not approach significance at 0.05 levels.

- The relationship between resilience, academic satisfaction, wellbeing, career optimism and academic achievement was not direct. Although resilience was directly and significantly related to academic satisfaction and wellbeing, it was not directly related to achievement. Similarly, resilience was directly and significantly related to wellbeing and career optimism, but not directly related to achievement.

Key Findings: Stage 2 – Interviews with 30 academically high-achieving students (Grade Point Average \geq 5.5)

- The findings indicated that academically high-achieving students share many common individual characteristics. These characteristics included taking personal responsibility for their actions, having a good personal social network, perseverance, resourcefulness, and having pragmatic expectations of self and life.
- Across all interviews, student with a disability attributed most of their perceived barriers to academic success to external environmental factors rather than to individual factors. Reported perceived external barriers included being misunderstood by teaching staff, unsupportive attitudes of university administrative staff, inaccessible course materials, peer ridicule, financial difficulties, low expectations, frequent staff turnover in DRO, health, counselling, and other needed support services, and not receiving assessment adjustments on time. Among the individual factors, managing the side effects of the disability-related medication was the most commonly cited barrier.
- The findings indicated that most high-achieving students used their attributes, and their personal and social network to negotiate successfully most of the environmental barriers that impeded their academic success in the university. For some of these students, the DRO played a critical role in making the course materials accessible. Reported strategies to negotiate perceived academic barriers included peer and family support, self-discipline, perseverance, adaptability, resourcefulness, accepting their disability, and setting and reevaluating short-term goals.
- The findings indicated that academically high-achieving students are strategic learners. When faced with a situation that impeded their academic progress, these students had the acumen to identify the critical adverse factor. Rather than using a generalised strategy, they selected contextually specific strategies in their repertoire and persevered with it until the adversity was mitigated.
- There is a need to conduct longitudinal studies in examining this issue. Also, future research needs to focus on examining attitudes and teaching practices of academics.

Further Discussion

There are five major findings that warrant further discussion and research:

1. A high percentage of students in the sample had psychological conditions, with nearly 35% of the sample identifying as such. There is a high attrition rate among university students with psychological conditions. Further, many of these students have poor academic outcomes and complete fewer numbers of required courses. This suggests that many students with psychological conditions face additional barriers in university settings and that it is imperative that university administrators develop support services that address this growing body of students.
2. The relationship between academic achievement, resilience, career optimism, academic satisfaction, and wellbeing is not direct. An indirect influence of these

factors on reported academic outcomes may occur in several ways. For example, resilience may facilitate more adaptive coping and study skills strategies, while the feeling of career optimism may increase students' level of engagement with activities that advance the setting of goals, as well as their career and self-management strategies. Those who feel more positive about their choice of degree are likely to be more proactive in terms of study and career decisions. In future, longitudinal research needs to be undertaken to enable a better estimate of the influence of resilience on optimism, wellbeing and academic outcomes. This kind of research is significant as it is difficult to eliminate common university stresses such as high-stakes assessments, predominantly online teaching, substance abuse and financial debt.

3. The resilience scores of students with GPA ≥ 5.5 were higher than those of students < 5.5 . This is a new finding and has not been reported in the existing research. If this finding holds true in a larger sample and across different disability categories, it has enormous implications for improving the retention rates of students with disabilities. Disability Resources Offices across the nation can offer resilience intervention programs that can support post-secondary students with disabilities.
4. A few academic staff members did not provide educational adjustments despite appropriate documentation being provided to them. Further, interview participants perceived that some academics' decisions with regard to educational adjustments were based on their perceptions as to whether the adjustments requested would provide undue benefit to the student, and/or lower the course standards for other students. These findings suggest that some academics seem to misunderstand the principles behind reasonable adjustments. Taken together, these findings go against the spirit of the Disability Discrimination Act 1992. Research is needed into the knowledge, attitudes and teaching practices of academics, and to examine inconsistencies in the provision of instructional and assessment adjustments. There is also a need to conduct research on the type of adjustments that are most effective and appropriate for each individual. This would enable academics to offer adjustments that meet the students' needs without lowering the standards of the course.
5. Academically successful university students with a disability shared several key attributes such as: (a) being aware of their strengths and needs; (b) having the ability to discuss their disability with academics and obtain the needed instructional and assessment adjustments; (c) being aware of informal and formal services and supports; (d) having the ability to access the needed information, services or supports; (e) being adept in problem solving; and (f) having a supportive informal and formal social support network. These findings are an initial step to gaining a better understanding of the lived experiences of academically successful students with a disability in higher education. But ideally research needs also to investigate the experiences of students who drop out of higher education. This would assist university administrators to create necessary support services to prevent the attrition of these students.

Recommendations

Given the increasing number of students with psychological/emotional disabilities entering post-secondary settings, it is essential that universities re-examine their disability support policies and services. As more students with a disability opt for online study than for on-campus study, the traditional disability support service delivery might no longer be effective in meeting student needs without some revision. We propose five

recommendations for universities to consider for implementation, based on the principle “first enable the environment, and then enable the student”:

1. Create a professional development-training module for mandatory training for all academic staff that focuses on universal design principles.
2. Create specific programs of support for female university students with disabilities.
3. Provide resilience intervention training to university students.
4. Provide comprehensive and flexible disability support services.
5. Provide online student discussion groups.

Introduction

Background of the Study

Over the past several years, there has been a steady growth in the numbers of students with a disability enrolling in Australian universities. According to the Australian Bureau of Statistics (2012), the number of students with a disability enrolled in Australian universities nearly quadrupled between 1994 and 2011 from 11,656 to 42,111. Additionally, this trend of increasing enrolment patterns of students with a disability in Australian universities has been reported in a recent study by Koshy and Seymour (2014). Using the data from the Students: Selected Higher Education Statistics 2013 (Appendix 2: Equity Data), Koshy and Seymour reported that undergraduate enrolments of students with a disability in Australian universities increased by 58% between 2007 and 2013. Further, the authors found that university students with a disability in Australia represented 5.5% of all domestic undergraduate enrolments in 2013. Given that people with disabilities comprise nearly 18.5% of Australia's population, students with a disability continue to be under-represented in higher education.

Similar trends regarding increased enrolments of students with a disability in higher education have been reported in the United States of America (USA) and the United Kingdom (UK). For example, the percentage of students with a disability in universities in the USA grew from 2.6% in 1978 to 11% in 2009 (United States Government Accountability Office, 2009). Further, Sanford et al. (2011) reported that 15% of all students with a disability in 2010 pursued higher education compared with 37% of their non-disabled peers. Similarly in the UK, the percentage of students with a disability in higher education grew from 3.1% in 1995 to 5.8% in 2005 (Higher Education Statistics Agency, 2008; Riddell, Tinklin, & Wilson, 2005). Despite these increases in the enrolment numbers, students with a disability continue to be under-represented in higher education in these countries.

Despite the growth in enrolment numbers, students with a disability experience more difficulty in completing university coursework than their non-disabled peers. In one of the earliest studies of this issue, Foreman, Dempsey, Robinson and Manning (2001) reported that students with a disability were more likely to: (a) have lower Grade Point Scores (GPAs); (b) have a higher rate of withdrawal from courses; and (c) receive a non-passing grade in first-year subjects more frequently than their non-disabled peers. A few studies conducted on this issue in Australia (Gale, 2002; Ryan, 2007; Ryan & Struhs, 2012) have reported that many students with a disability attributed their academic difficulties in higher education to several factors such as academics' poor knowledge of the Disability Discrimination Act, academics' attitudes towards disability, non-accessible course materials, limited contact with academics, traditional delivery modes of instruction and assessment, interpersonal conflicts and dealing with the stigma of the disability in the university. Several participants in these studies perceived university study as a "test of endurance" (Gale, 2002, p. 69). In fact, Gale (2002) used the term "doing time" (p. 69) to describe aptly the adverse challenges and emotional negativity that students with a disability have to overcome in their quest to earn a university degree.

The above findings about university students with a disability in Australia have been echoed in several studies across the world (Atkinson, Bramley, & Schneider, 2009; Barnard-Brak, 2010; Corrigan, Barr, Driscoll, & Boyle, 2008; Fuller, Healey, Bradley, & Hall, 2004; Getzel & Thoma, 2008; Hutcheon & Wolbring, 2012; Hopkins, 2011; Magnus & Tøssebro, 2014; Mamiseishvili & Koch, 2011; Mullins & Preyde, 2013; Owen-Hutchinson, Atkinson, & Orpwood, 1998). Across most of these studies, six themes have been reported

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consistently: (a) academics' poor knowledge of disabilities; (b) academics' lack of sensitivity while discussing educational adjustments issues; (c) students with "invisible" disabilities being misunderstood by peers and academics; (d) poor study skills and time management skills of students with disabilities; (e) negative self-perceptions among students with disabilities, and (f) disability self-disclosure issues. The remarkable similarity of these findings between Australia and the rest of world implies that students with a disability are at an increased risk of dropping out from university study in many parts of the world.

As policy-makers, researchers, families, students with a disability and disability rights advocates deliberate on ways to expand university opportunities for students with disabilities, one particular issue has largely been ignored: listening to the "voices" of academically high-achieving students with disabilities. As reported by Gale and Parker (2013), more than three-quarters of all the students with a disability who enrolled in Australian universities from 2006 to 2011 persisted in the completion of their degrees. Further, studies have reported that four out of every 10 students with a disability earned their undergraduate degree within five years of commencing their study (National Center for Education Statistics, 1999; Wessel, Jones, Markle, & Westfall, 2009). Unfortunately, the experiences of academically high-achieving university students with a disability have been eclipsed in the extant literature by the alarming statistics on low retention rates and barriers to persistence.

Purpose of the Study

The present study explored the lived experiences of students with a disability who were enrolled at a regional university in Australia. Within this broad theme, this study had three purposes. First, the study explored the socio-demographics, academic, and disability-related characteristics of the students with a disability in the higher education system. Second, the study examined the relationship between resilience, career optimism, wellbeing, academic satisfaction and academic achievement. Third, the study sought instructive insights from high-achieving students with a disability about their university experiences. Emphasis was placed on understanding how these high-achieving university students managed their disability and overcame attitudinal, organisational and environmental barriers across a range of university contexts that typically disadvantaged their peers with disabilities. By listening to the voices of these high-achieving students with disabilities, the researchers further explored the perceived usefulness of their personal-social networks and the University's disability-related policies and supports.

Conceptual Framework

A variety of factors has been linked to academic persistence among students with a disability in a university. According to Berger and Lyon (2005), persistence refers to "the desire and action of a student to stay within the system of higher education" (p. 7). For many university students with a disability, both personal and environmental factors influence their academic persistence. For example, internal factors such as the severity of their impairment may lead to difficulties in attention, memory and concentration, which can interfere with the student's ability to meet the course expectations. Further, environmental factors such as the academics' attitudes towards disability and the unavailability of appropriate test adjustments can lead to anxiety, which can interfere with the student's ability to complete the course. We grounded our exploratory work in the risk-resilience framework (Murray, 2003). We posited that a resilient student with a disability would have more success in the university studies than a non-resilient student.

The risk-resilience framework offers equity researchers an asset-based approach to supporting university students with a disability. As defined by Connor and Davidson (2003), resilience embodies personal qualities that enable individuals to thrive despite adversity. Resilience-based approaches emphasise understanding how individuals with a disability use their strengths to acquire needed resources that have been previously inaccessible to them owing to prevailing attitudinal perceptions towards disability. For example, the presence of a disability in university students is a risk factor for their persistence and can lead to negative academic and social outcomes during their university study. From the perspective of the above definition by Connor and Davidson (2003), students with a disability who have earned a degree will be considered resilient since they have negotiated the barriers that might lead to attrition. A researcher using this approach would explore how students with disability acquired the various resources and overcame the hurdles that typically disadvantage their peers with disabilities.

For many students, including those with disabilities, commencing university life can be stressful. University life involves embracing new or added responsibilities, fostering new relationships and meeting new expectations. While some adapt to the changing roles and responsibilities, many students find this period overwhelming and stressful. Given that the resilience research has focused on individual outcomes in response to stress, there is a clear rationale for using the risk-resilience framework to understand the lived experiences of students with disabilities.

Significance of the Study

The framework of risk and resilience can assist in understanding the lived experiences of university students with a disability. Understanding how successful students with a disability navigate multiple challenges within the university settings will enable university researchers and administrators to develop responsive interventions to support the growing number of students with a disability in universities. Among the several theories that offer insights into student success, the resilience framework is the only framework that provides such a diverse set of preventative, asset-based interventions that use concepts such as self-efficacy, happiness, faith, optimism and humility to support marginalised or disadvantaged individuals (Hartley, 2012; Snyder & Lopez, 2002).

Presently, the existing scholarship on equity in the Australian higher education sector has largely ignored the needs of university students with disabilities. The few studies that exist focus on barriers to participation among students with dyslexia (Gale, 2002; Ryan, 2007; Ryan & Struhs, 2012) or students with a psychiatric disability (McClean & Andrews, 1999). Further, the voices and views of university students with a disability are missing from the literature. To date, there are no Australian studies that have systematically analysed the higher educational experiences of successful students with disabilities. This context of increased concern, accompanied by the relative paucity of research, provides further rationale for the current study.

Research Approach: Overview

The overarching goal of this study was to explore and describe the lived experiences of students with a disability enrolled at a regional university in Australia. Within this broad theme, this study had three purposes. First, we wanted a snapshot of the socio-demographics, academic enrolment patterns, and disability-related characteristics of the students with a disability in the higher education system. For example, what percent of students were male and what percent were female? What percent of the students had a cognitive/psychological condition versus those with sensory/physical disabilities? Or, within a particular disability category, what percent were Aboriginal/Torres Strait Islander?

A second purpose of this study was to examine the relationship between resilience, career optimism, wellbeing, and academic achievement, a relationship that has not been fully explored in higher education literature. It has been documented that many university students with a disability face multiple challenges that are physical, social, emotional, attitudinal, and financial in nature (Barnard-Brak, 2010; Buggie-Hunt, 2007; Hutcheon & Wolbring, 2012). As a result, many university students with a disability are at an increased risk of dropout. However, there has been a growing body of research that point to resilience as a critical factor in negotiating adverse conditions (Benard, 2004; Chaskin, 2008). Given that there is no research linking resilience to achievement for students with disabilities, we were keen to explore this area.

The final purpose of this study was to understand how academically high-achieving students with a disability navigated academic, social, and personal demands in the university settings that typically disadvantaged many of their peers with disabilities. Given the uniqueness of each student's situation, we were interested to identify common themes within personal and academic networks, policies, programs, and resources that these students with a disability perceived as being enablers and/or impediments in their academic journey in the university.

Study Design

The study used sequential exploratory mixed method design (Creswell & Plano Clark, 2007) to examine the lived experiences of students with a disability currently enrolled at a regional university in Australia. As presented in Table 1, this study was conducted in two stages. In stage one, an online survey was used to gather information about students with self-identified disabilities and the range of support services in higher education settings. In stage two, qualitative in-depth interviews were conducted with a subset of respondents to further illuminate survey findings and better understand the phenomena. The study examined the following research questions:

In Stage One

1. What are the demographic, academic and disability characteristics of the study sample?
2. Is there a relationship among resilience, academic satisfaction, wellbeing, career optimism and academic achievement in the study sample?
3. Is there a difference in resilience between achievement groups (GPA \geq 5.5 vs. GPA $<$ 5.5) in the study sample?

In Stage Two

4. What are the self-reported characteristics of high-achieving university students with a disability?

5. What barriers to persistence confront high-achieving university students with a disability?
6. How do high-achieving university students with a disability negotiate the barriers that impede their academic success?
7. How do high-achieving student with a disability perceive the usefulness of institutional policies, programs and support services for students with disabilities?

Stage	Description	Procedure	Outcome/Product
1	Quantitative Data Collection	Researcher-Designed Survey	Numeric data from surveys
	Quantitative Analysis	Data Screening Cronbach's alpha Confirmatory Factor Analysis Structural Equation Modelling	Descriptive statistics Reliability of Instruments Indirect/Direct relationship of resilience with achievement and wellbeing
2	Case Selection	Purposive sampling for 1-to-1 interviews (N=30)	Participants selected for interviews
	Qualitative Data Collection	Conduct interviews with selected participants (approx. 45-60 mins ea)	Audio recordings/transcribed transcripts
	Qualitative Data Analysis	Thematic Analysis	

Table 1: Study Design Stages and Data Collection / Analysis Procedures

Stage One: Survey

Method

Stage one comprised the administration of an online survey to (a) identify the socio-demographics, educational, and impairment-related characteristics of the study participants, (b) explore the relationship between resilience, career optimism, academic satisfaction, wellbeing, and academic achievement among the study participants and (c) examine the difference in resilience between those students with a high GPA and those with a lower GPA (GPA \geq 5.5 vs. GPA $<$ 5.5).

Recruitment of Participants

In accordance with the university's Student Records Privacy Policy, all participants in this study were recruited through this university's Disability Resources Division (DRD). After obtaining approval from the University Research Ethics Committee for conducting this study, the research team apprised the DRD Manager of the study's importance, objectives, methodology, and confidentiality safeguards. The DRD Manager assisted the research team in recruiting the study participants for this stage, including creating the listserv of potential participants.

The DRD Manager created a listserv of potential study participants in collaboration with this university's Records/Compliance Services Division. This listserv was crosschecked with the DRD staff to include students who did not self-disclose at enrolment but who registered with DRD following enrolment. Participants were included in the listserv only if they met all of the following three criteria: (a) were currently enrolled at the university as full-time or part-time student; (b) had self-disclosed a disability at the time of enrolment and/or registered with DRD following enrolment; and (c) had completed at least one academic year at the university. Using the above criteria, 1200 potential study participants were identified.

This sample frame included university students, who (a) self-disclosed as having a disability at the time of enrolment by checking the appropriate box on the application form and/or (b) registered with the DRD at any point during their university study. Similar to policies existing in other post-secondary educational settings across Australia, a student with disability in the university had to self-disclose voluntarily to DRD to receive support services and other reasonable academic adjustments. Self-disclosing disability in the application form during the enrolment process is not a prerequisite for receiving necessary educational support and adjustments. Therefore the sampling frame included individuals who were registered with DRD as well as students who were not registered with DRD.

Survey – Development and Description

Given that there are few empirical studies examining resilience among university students with disabilities, a self-administered online-survey questionnaire was developed in three phases. In phase one, an exhaustive literature search was performed to identify the instruments that have been specifically developed to measure the resilience, optimism, and academic satisfaction of post-secondary students with/without disabilities. Electronic databases such as EBSCO (CINAHL and Academic Search Premier), MEDLINE, PsycINFO, and PsycARTICLES, and Google Scholar were searched using a pre-set list of defined words (e.g. resilience, university students, optimism, and academic satisfaction).

In phase two, an advisory panel reviewed the suitability of questions included in the survey. The advisory panel included: (a) two academics who were experts in the field of career education and equity in higher education in regional Australian universities; and (b) two disability practitioners in regional universities in Australia. Specifically, the advisory panel examined (a) the relevance of the items included in the survey, (b) the clarity of the included survey items, and (c) the appropriateness of the wording of the open-ended questions in the survey. All of the suggestions from the advisory panel were incorporated in the survey that was piloted during the next phase.

In phase three, the survey questionnaire was piloted with a group of five recent university graduates with disabilities. This convenience sample provided feedback on the wording of the questions, the ease of access, format, length of the instrument, organisation, and relevance of the items. Except for formatting issues, the pilot group did not suggest any changes to the content or length of the survey.

The final version of the instrument was an online survey questionnaire that included multiple-choice, yes/no, rating scale, and text fill-in questions. A copy of the survey is available on request from the research team. The online-survey questionnaire included six sections, described below.

Socio-demographic characteristics

This section included questions about the respondent's age, gender, ethnic background, marital status, language spoken at home, parents highest level of education, employment status, family income, academic level, mode of study, and cumulative grade point average.

Disability-related information

This section included questions about the survey respondent's disability category, severity of disability, age of diagnosis, self-disclosure, usefulness of the academic services received, social support network, confidence with self-advocacy skills, and satisfaction with the present living situation.

Academic Major Satisfaction Scale (AMSS)

A modified version of the AMSS (Nauta, 2007) was used to assess the respondents' general satisfaction with their choice of university degree. Examples of items included: "I often wish I hadn't gotten into this major", "Overall, I am happy with the major I've chosen." The scale consisted of six items on a 5-point rating scale (from 1 = strongly disagree to 5 = strongly agree). Scale scores were the sum of the items, with reverse coding of items 1, 2, 3 and 6. Higher scores reflected a greater satisfaction with the choice of degree. With regard to item modification, the word "major" was replaced by "degree" because of its appropriateness to the Australian higher education settings. The changes were discussed with the expert committee during the Delphi rounds. This word change was applied to all the items in this scale.

In her study examining the psychometric properties of AAMS in university students, Nauta (2007) reported internal consistency of $\alpha = .94$ and $\alpha = .90$. In their study that validated the use of AMSS scales among Korean undergraduate students, Sovet, Park, and Jung (2014) reported internal consistency of $\alpha = .87$. In the present study sample ($N = 274$), $\alpha = .86$, indicating good reliability.

Career Optimism Scale (COS)

We used the COS to assess the degree to which participants were optimistic about their career prospects after graduation and their career planning process. The COS is one of the three subscales of the Career Futures Inventory (Rottinghaus, Day & Borgen, 2005). The authors described Career Optimism as a trait that reflects expectations of “the best possible outcome or to emphasise the most positive aspects of one’s future career development, and comfort in performing career planning tasks” (Rottinghaus, Day, & Borgen, 2005, p.11).

All the 11 items of the Career Optimism Scale were included in this survey. Example of items included: “I get excited when I think about my career”, “Thinking about my career inspires me”, and “It is difficult to relate my abilities to a specific career plan.” Respondents rate each items on a 5-point scale, ranging from 1 “strongly disagree” to 5 “strongly agree”. Scale scores are the sum of the items with reverse coding of items 3, 4, 5, 8, 9 and 11. In their original study that included a sample of 663 university students, Rottinghaus, Day and Borgen (2005) reported internal consistency of $\alpha = .87$. In this study sample (N = 274), $\alpha = .88$, indicating good reliability.

Connor-Davidson Resilience Scale (CD-RISC)

The CD-RISC (Connor & Davidson, 2003) is a self-reported 25-item scale that assesses one’s ability to succeed despite adversity. According to Simmons and Elias-Lambert (2012), CD-RISC is one of the most commonly used instruments to assess resilience in diverse clinical and general population. Further, Windle, Bennett and Noyes (2011) ranked the psychometric properties of CD-RISC within the top three instruments for measuring resilience in an adult population.

According to the authors, CD-RISC was designed to measure “personal qualities that enable one to thrive in the face of adversity” (Connor & Davidson, 2003, p. 76). Thus, items in the scale captured self-perceptions of the attributes of resilience, commonly reported in the extant literature, such as control, commitment, challenge, adaptability, goal orientation, self-esteem, problem solving, humour, and strengthening through stress. Although the authors described resilience as a multidimensional construct, most studies support a one-dimensional structure (Burns & Anstey, 2010; Campbell-Sills & Stein, 2007).

Each of the 25 items in the CD-RISC is self-rated on a 5-point scale. Respondents rate items on a scale from 0 (not true at all) to 4 (true nearly all the time) based on how they felt over the past month. Examples of items included: “I am able to adapt when changes occur”, “I can deal with whatever comes my way”, and “I tend to bounce back after illness, injury, or other hardships.” Total scores ranged from 0 to 100, with higher scores reflecting greater resilience. In their study that included a sample of general population and patients, Connor and Davidson (2003) reported internal consistency of $\alpha = .89$ and item-total correlations ranging from 0.30 to 0.70. In this study sample (N = 274), $\alpha = .92$, indicating good reliability.

WHO-5 Well-Being Index

The World Health Organisation Collaborating Centre for Mental Health in Frederiksborg General Hospital, Denmark designed this 5-item self-administered questionnaire to assess the subjective emotional wellbeing of persons living under medical/social and economic duress. Bech, Olsen, Kjoller and Rasmussen (2003) reported the WHO-5 Well-Being Index

as being sensitive in differentiating between individuals whose health declined progressively and those whose health did not.

Each of the five items is positively worded and related to positive mood, vitality, and general interests. Examples of items include: “I have felt cheerful and in good spirits”; “I have felt calm and relaxed”; and “I woke up feeling fresh and rested”. Respondents rate each of the items on a 6-point scale ranging from 0 (at no time) to 5 (all the time). The raw scores, ranging from 0-25, are transformed to 0-100 by multiplying by 4. Evidence suggests that a score of 50 or below is indicative of low mood, while a score of 28 and below indicates likely depression and requires further diagnostic assessment (Snoek, 2006). In their study, Bech et al., (2003) reported internal consistency of $\alpha = .86$. In this study sample ($N = 274$), $\alpha = .89$, indicating good reliability.

Instrument Design

We used the university’s in-house survey software to create the online survey. The survey was designed using procedures suggested by Dillman, Smyth and Christian (2014). For example, potentially sensitive questions (age, gender, disability) were asked towards the end of the survey. Additional features included consistent page formatting, visually pleasing layout sections, and no password to participate. Furthermore, participants were allowed to save their responses and complete the survey at a later time if they wished to do so. Finally, participants were given the option to request print or large print versions of the survey, if they had difficulty accessing it. We received two requests for printed versions of the survey.

Data Collection Procedure

The survey was made available for participants from October to December 2014. Two days prior to the actual survey distribution, an introductory email was sent to the listserv that contained the email addresses of the 1200 students with a disability who met the study inclusion criteria described above. The email alerted the participants to the upcoming survey and provided information about the importance of the topic, the survey structure, and issues related to confidentiality and voluntary participation. Two days after the introductory email alerts, email invitations with a request to participate and the link to the online survey were sent to the listserv of 1200 students. Four follow-up email alerts were sent to encourage participation in the survey. Completed surveys were received from 274 students with disabilities, a response rate of approximately 23%. The flow chart describing the participant recruitment process is presented in Figure 1.



Figure 1: Flow chart of the data collection procedures

Data Analysis

The raw data were extracted from the institutional survey software in an Excel Format and exported to SPSS 22.0 (IBM® SPSS® Statistics, IBM Corp, New York). Pre-analysis data cleaning and coding were performed prior to the data analysis. Descriptive statistics and

measures of variability were used to describe the sample. Additionally, Cronbach's alpha coefficients were computed to measure the degree of internal consistency of total scores for each of the measures used in this survey. The coefficients for each of the measures are presented in the survey-description section.

Next, a series of factor analyses were conducted to test the structure of the resilience, academic satisfaction, and career optimism scales in the sample. The conceptual models of the relations between achievement, academic satisfaction, resilience, career optimism, and wellbeing were then tested using Structural Equation Modelling (SEM). Consistent with the two-step modelling methodology (Anderson & Gerbing, 1988), two measurement models were specified and tested using Confirmatory Factor Analysis (CFA) to examine the correlations among the latent variables and fit of the full measurement structures presumed to underlie the observed data. Once the confirmatory measurement models were found to be acceptable, the predicted structural relationships were then tested using SEM.

CFA and SEM analyses were performed using Mplus 7.11 (Muthén & Muthén, 1998 – 2014). The raw data were submitted to Mplus and the model-parameters were estimated using robust maximum likelihood (MLR), which produces standard errors and tests of model fit that are robust to the non-normality of the observed data (Yuan & Bentler, 2000). For model fit assessment, Chi-Square test was used along with the following three fit indices (Marsh, Hau, & Wen, 2004): Comparative Fit Index (CFI: acceptable fit if close to 0.95 or greater), Tucker– Lewis Index (TLI: acceptable fit if close to 0.95 or greater), and the Root-Mean-Square Error of Approximation (RMSEA: best if close to 0.06 or less). We also report the Standardized Root Mean Square Residual (SRMR, with acceptable fit close to 0.05 or less) for informational purposes. Finally, latent mean differences on resilience across the academic groups (reported GPA \geq 5.5 and reported GPA $<$ 5.5 were tested by comparing a model in which the latent means in the “higher GPA group” were free to vary versus a model in which the means were constrained to equality across groups.

Results

Research Question 1: What are the demographic, academic and disability characteristics of the study sample?

Socio-Demographic Characteristics

As evident in Table 2, 274 students with a disability responded to the survey. Respondents were predominantly female (65%), with males accounting for 35% of the respondents. The majority of respondents reported being in the age group 31-45 years (40.9%), followed by the 17-30 years (29.9%) category, and the 46-72 years (29.2%) category. Ages ranged from 17 to 72 years, with a mean age of 38.8 years ($SD = 12.8$). A majority of the respondents indicated that they considered themselves to be non-Indigenous (96.4%), and that English was their primary language (93.8%). Only 3.6% of the respondents identified themselves as Aboriginal and/or Torres Strait Islander. With regard to marital status, most respondents reported being single (43.4%), while 35.4% reported being married, and 21.2% reported their marital status under the category of “other” (e.g.,

divorced/separated/widowed). In terms of employment status, most respondents reported being unemployed (41.2%), while 21.9% reported being employed full-time, 20.1% reported being employed part-time, and 16.8 % reported their employment status under the category of “other” (temporary employment positions).

With regard to estimated annual family income, the majority of the respondents (28.5%) reported their estimated annual family income to be “less than \$ 20,000”, while 24.1% reported “\$ 20,001-\$ 40,000”, 13.5% reported “\$ 40,001- \$ 60,000”, 19% reported “over \$ 80,000”, and 15 % reported “\$ 60,001 to \$ 80,000”. It is possible that some of the participants might have misunderstood what was meant by “family income” and reported their personal income instead. Therefore caution must be used in interpreting family income data.

Variable	N	Per cent
Gender		
Male	96	35.0
Female	178	65.0
Age (in years)		
≤ 30	78	29.9
31 – 45	112	40.9
> 45	84	29.2
Aboriginal / Torres Strait Islander		
Yes	10	3.6
No	264	96.4
Primary Language Spoken		
English	257	93.8
Others	17	6.2
Marital Status		
Single	119	43.4
Married	97	35.4
Others	58	21.2
Employment Status		
Not Employed	113	41.2
Full-Time	60	21.9
Part-Time	55	20.1
Others (Temporary, Casual)	46	16.8
Annual Family Income		
≤ \$20,000	78	28.5
\$21,000 - \$40,000	66	24.1
\$41,000 - \$60,000	37	13.5
\$61,000 - \$80,000	41	15.0
> \$80,000	52	19.0

Table 2: Frequency Distribution of Selected Demographic Characteristics of the Participants

Educational Characteristics

As shown in Table 3, respondents were predominantly undergraduate students (87.6%). The most common reported program of study was Health/ Psychology, with 23.7% respondents reporting this as their field of study. Other reported fields of study included “Others” (e.g. Science, Arts), Business/Accounting/Law (21.5%), Education (19.3%), and Engineering (13.1%). The self-reported GPA scores ranged between 2.5 and 7 with a

median score of 5.0. Most respondents (33.9%) reported their GPA in the range of 4 to 4.99, with 30.3% reporting it in the range of 5 to 5.99, 17.8% reporting it in the range of 6 to 7, and 10.9% reporting it in the range of 2.5 to 3.9. Nineteen respondents did not report their GPA.

In terms of study mode, most of the respondents (52%) reported pursuing their education online, with 24.1% reporting “on-campus” mode, and 24.5% reporting blended mode. With regard to continuation of studies since initial enrolment, most respondents (64.2%) reported enrolling in courses every semester, while 36% reported suspending their studies for at least a semester. When asked about their further study intentions, most of the respondents (69%) indicated their intent to study further after graduation, compared to 31% who were undecided about their future academic careers.

Variable	N	Per cent
Field of Study		
Business/Accounting/Law	59	21.5
Education	53	19.3
Engineering	36	13.1
Health/Psychology	65	23.7
Others	61	22.3
Degree		
Bachelor Degree	240	87.6
Post-Graduate/Others	34	12.4
Grade Point Average (1-7 scale)		
< 4.00	30	10.9
≥ 4.0 - < 5.00	93	33.9
≥ 5.0 - < 6.0	83	30.3
≥ 6.00	49	17.8
Not Reported	19	6.9
Attendance Mode		
On-campus	66	24.1
Web only	141	51.5
Web/On-campus	67	24.5
Attendance Status		
Absent for 1 or more semester/s	98	35.8
Continuing without a break	176	64.2
Future Plan: Continue Higher Education		
Yes	188	68.6
Not sure	86	31.4

Table 3: Frequency Distribution of the Self-Reported Educational Characteristics of the Participants

Disability-Related Information

More respondents self-reported identified as having a psychological condition (35%) than any other disability (see Table 4). Other disabilities reported included “Others-ADHD/ABI” (16.1%), chronic medical conditions (14.9%), multiple disabilities (9.5%), sensory impairment (7.2%), specific learning disabilities (5.9%), and autism (5.8%). Fifty-eight percent of participants reported having one or more co morbid diagnoses. The median age of diagnosis was 23 years; with the age group 16-30 years being the time period when

most respondents received their initial diagnosis of a disability. Close to 6 out of 10 respondents reported receiving their diagnosis before 30 years of age.

In this study, nearly 30% of the respondents chose to self-disclose their disability during enrolment. However, for most respondents (35.8%), the decision to self-disclose their disability was related to their struggles in meeting the course expectations. Other reported reasons that contributed to the decision to self-disclosure included receiving a low score in the course (16.2 %) or facing difficulty in a non-academic area, such as health, finance, or housing (18.4%). Among the students registered with DRD (n=179), nearly 50% of them did not access DRD services during the study period.

Variable	N	Per cent
Disability Category		
Autism/Asperger's Syndrome	16	5.8
Psychological Conditions	96	35.0
Sensory Impairment	20	7.2
Specific Learning Difficulty	16	5.9
Physical/Orthopaedic Disabilities	12	4.4
Chronic Medical Condition/Illness	41	14.9
Multiple Disabilities	26	9.5
Others (ADHD/ABI)	44	16.1
Not Reported	3	1.1
Co-Morbidity		
Present	150	54.7
Absent	121	44.2
Not-Reported	3	1.1
Age of Diagnosis (in years)		
≤ 16	64	23.3
> 16 – 30	98	35.8
> 30 – 45	60	21.9
≥ 45	28	10.2
Not Reported	24	9.8
Self-Disclosure		
Yes	180	65.7
No	94	34.3
When First Self-Disclosed (N=179)		
Registration/Enrolment	53	29.6
Struggling in the Course	64	35.8
Received Poor Grade	29	16.2
Others	33	18.4
Receiving Services DRD (N=179)		
Yes	90	50.3
No	89	49.7

Table 4: Frequency Distribution of the Self-Reported Disability Characteristics of the Respondents

Research Question 2: Is there a relationship between resilience, academic satisfaction, wellbeing, career optimism, and academic achievement?

Prior to conducting these analyses, a backward logistic regression was performed. This procedure was necessitated as data inspection indicated that a number of students had not reported their GPA. A backward logistic regression analysis suggested that students who did not report their GPA ($n = 19$) did not statistically differ from those who did report their GPA ($n = 255$) on key demographic variables, including field and mode of study, age, gender, self-identification of disability, and average income (Tabachnick & Fidell, 2007). Additionally, an initial data screening prior to factor analyses and SEM indicated that the item-level distributions were slightly to moderately non-normal; however absolute values were well below the criteria of 2 for skew and 7 for kurtosis as recommended as problematic values by Curran, West, and Finch (1996). The results of the SEM are presented next.

Structural Equation Models

Two latent variable models were examined using a full information maximum likelihood (FIML) estimation technique as a model-based solution for the missing data in which the parameters were estimated directly using the incomplete data set to yield relatively unbiased parameter estimates and accurate standard errors while using all available data (Newman, 2014). The first model examined the relationship between resilience, academic satisfaction, achievement, and wellbeing. The second model was similar and examined the relationship between resilience, career optimism, achievement, and wellbeing (see Figures 2 and 3). The correlations among the latent factors for model 1 and 2 are shown in Table 5. As can be seen from Table 5, achievement was not significantly related to the other model variables.

Variable	1	2	3	4
1. Resilience	-			
2. Academic Satisfaction	.48	-		
3. Career Optimism	.52	.61	-	
4. Achievement	.06	.11	.05	-
5. Well-Being	.60	.31	.43	.00

Table 5: Correlations among all latent factors for Models 1 and 2

Note: Correlations $\geq .31$ significant at $p = .01$ level (2-tailed). Other correlations are not significant.

The first model (see Fig 2) demonstrated an adequate fit to the data, $\chi^2(184) = 315.756$, $p = .001$ (CFI = .943; TLI = .934, RMSEA = .051, 90% CI [.041, .061]; SRMR = .048). As shown in Figure 2, resilience was directly and significantly related to academic satisfaction and wellbeing, but was not directly related to achievement. Academic satisfaction was also not directly related to achievement and wellbeing. The model explained 36% of the variance in wellbeing and 23% of the variance in academic satisfaction, while resilience and academic satisfaction explained only 1% of the variance in achievement. These results suggest that for this sample of students, resilience played an important role in terms of facilitating academic satisfaction and a sense of wellbeing, but did not contribute to their academic achievement.

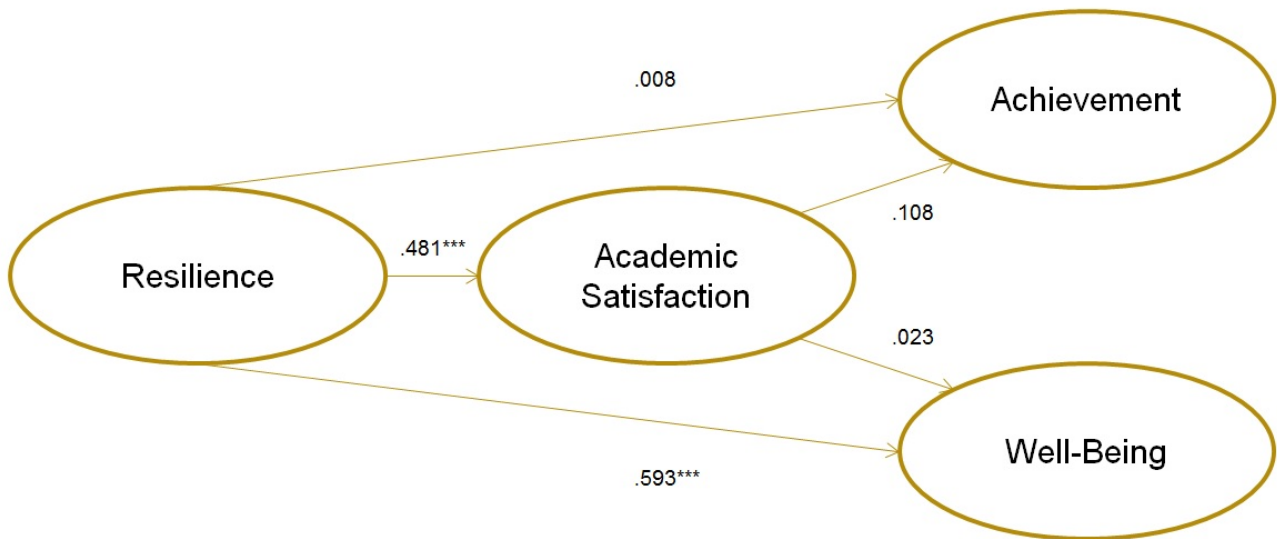


Figure 2: Standardised path coefficients for resilience, academic satisfaction, well-being and achievement model. *** $p < .001$.

The second model (see Fig 3) also demonstrated an adequate fit to the data, $\chi^2 (204) = 315.010$, $p = .001$ (CFI = .955; TLI = .950, RMSEA = .045, 90% CI [.035, .054]; SRMR = .048). As shown in Figure 3, resilience was directly and significantly related to career optimism and wellbeing. While not directly related to achievement, career optimism was significantly and directly related to wellbeing. The model explained 38% of the variance in wellbeing and 27% of the variance in career optimism, while less than 1% of the variance in achievement was accounted for. For this sample of students, resilience played an important role in terms of facilitating their career optimism, while both resilience and career optimism contribute to students' sense of wellbeing.

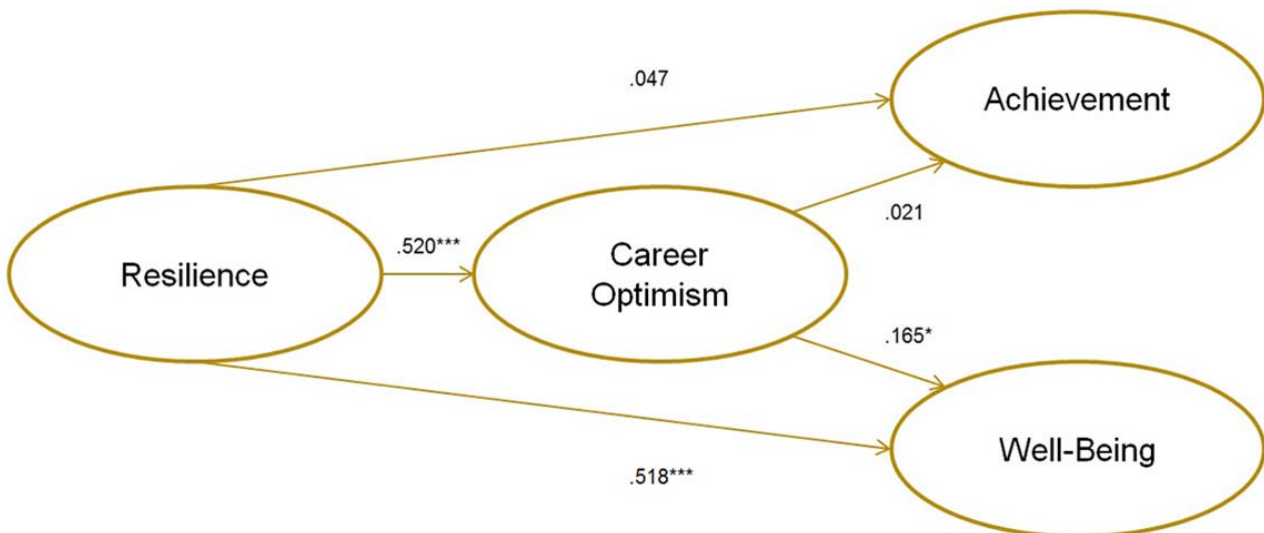


Figure 3: Standardised path coefficients for resilience, career optimism, well-being and achievement model. *** $p < .001$. * $p < .05$.

These findings provide support for a direct relationship between a capacity towards resilience in students with a disability and a greater sense of psychological wellbeing. This relationship is not facilitated by a sense of academic satisfaction. It is facilitated by a sense of career optimism, with a small significant indirect effect found among the student sample

(.139, $p < .05$). The results also suggest that the relationship between resilience, academic satisfaction, career optimism and academic achievement is not as direct.

Research Question 3: Is there a difference in resilience between the achievements (Grade Point Average ≥ 5.5 vs. GPA < 5.5)?

A subsequent multi-group invariance analysis of the Connor-Davidson Resilience Scale - 10 was conducted to examine the latent mean difference in resilience across two groups representing the higher GPA (GPA ≥ 5.5) and the lower GPA (GPA < 5.5) students. We first imposed increasingly restrictive equality constraints on the factor loadings and item intercepts to determine the measurement equivalence of the instrument between the groups. Support for a model postulating strong factorial invariance was found, which is necessary for the conduct of latent mean invariance tests. We then tested latent mean differences on resilience between the academic groups by comparing a model in which the latent means in the successful group were free to vary vs. a model in which the means were constrained to equality across groups. There was a statistically significant decrement in fit when the equality constraints were imposed on the means, $\chi^2 (1) = 6.1710$, $p < 0.05$, indicating differences in the means of resilience between the groups. Students in the higher GPA group were found to score significantly higher on resilience than students in the lower GPA group ($d = .404$).

Stage Two: Follow-up Interviews

Methods

Stage two of the study commenced in the second week of December 2014. In this stage, follow-up telephone interviews were conducted with a subset of survey respondents to gain an in-depth understanding of the experiences of academically successful students with disabilities. Given the limited research in this area, purposeful sampling was used to select participants for an in-depth exploration of (a) their lived experiences in the university, and (b) the personal, social, and institutional factors influencing the quality of those experiences.

Participants Description-Interview

Interviewees were selected from amongst those survey respondents who had indicated their willingness to participate in follow-up interviews by checking on the appropriate box on the online survey questionnaire in stage 1 of the research. Additionally, respondents willing to participate in the interviews were asked to enter their name and telephone contact details in the appropriate section of the online survey. In this study, a total of 130 survey respondents indicated their willingness to be contacted for a follow-up interview.

Follow-up telephone interviews were conducted with a subset of 30 participants selected from these 130 survey respondents. They were selected on the grounds of having provided their voluntary consent for participating in the interview; that they have affirmed that they had a GPA of 4.0 (on a 7 point scale) and higher; and that they had attended the university for at least one full year without absence. We selected students with the highest GPA. The sample included 24 females and six males, with GPAs ranging from 7.00 to 5.50, with a mean GPA of 6.05. Table 6 presents selected characteristics of the interview participants.

Pseudonym ¹	Gender	GPA ²	Disability ³
Camilla	F	6.50	Autism/Asperger's, Epilepsy, Depression
Lawrence	M	5.80	Medical
Dorothy	F	5.80	Psychological Difficulties
Joanne	F	7.00	Medical
Jen	F	6.40	Other – Cerebral Vasculitis
Kassandra	F	6.00	Psychological Difficulties
Alicia	F	6.20	Medical
Halina	F	7.00	Orthopaedic Impairment
Laura	F	6.33	Medical
Treasa	F	6.00	Psychological Difficulties
Heidi	F	6.49	Epilepsy
Josh	M	7.00	Orthopaedic Impairment
Sherrel	F	6.00	Medical
Catrina	F	6.00	Psychological Difficulties
Manuel	M	6.28	Multiple Disabilities
Aston	F	6.00	Erlers Danlos Syndrome
Andre	M	6.05	Autism/Asperger's, Epilepsy, Depression
Janine	F	6.40	Multiple Disabilities
Noreen	F	5.50	Psychological Difficulties
Rachele	F	6.00	Psychological Difficulties
Annemarie	F	5.80	Multiple Disabilities
Celeste	F	5.92	Multiple Disabilities
Vikki	F	5.53	Medical
Esmerelda	F	5.61	Psychological Difficulties
Loriann	F	5.50	Psychological Difficulties
Selma	F	6.00	Medical
Colleen	F	5.40	Psychological Difficulties
Oliver	F	6.00	Orthopaedic Impairment
Brian	M	5.55	Specific Learning Disability
Jacinda	F	5.50	Seizure Disorder

Table 6: Demographic information about participants

Note. Pseudonym¹ – pseudonyms assigned by researchers.

GPA² – as reported by participant.

Disability³ – as identified by participant.

Interview Schedule

A semi-structured interview schedule was used to gather information about the lived experiences of students with a disability in an Australian regional university. The interview questions were grounded in the literature on resilience, coping, self-determination, and self-efficacy. The interview questions chronicled each participant's journey from the time that they had considered higher education study to the present day. Specifically, the interview questions prompted participants to provide examples of their experiences as university students and the roles played by their family members, peers, teaching

academics, disability support office staff members, and significant others in their academic success. Additional prompts focused on issues related to self-disclosure, interaction with academic/professional staff, interactions with peers, and the usefulness of existing institutional supports.

Data Collection – Interviews

A postgraduate psychology student with excellent interviewing skills conducted all of the interviews. Prior to conducting the interview, the interviewer emailed an overview of the interview questions to the participants. This was done to alleviate anxiety among the interviewees and enable them to participate more effectively. All interviews were recorded using a digital voice recorder (Sony ICD-SX 700D voice recorder) and transcribed verbatim. All the interviews lasted from 45 to 60 minutes. Interview data were collected over a 3-month period from January to March 2015.

Interview Analysis

We analysed the interview data thematically, seeking answers to the specific research questions. All interview transcripts were read to identify information relevant to each of the four research questions in Stage Two of the study, and saved as a separate file. The information comprised an extract from the transcript in the form of a direct quotation (citing the participant and the line numbers from that participant's interview transcript) – this constituted “evidence”. Data were then compared across all four files in order to ensure that the evidence collected supported the response to the particular research question under scrutiny. This stage of the analysis was conducted with reference only to the criterion of whether the evidence related specifically to the particular research question.

The researchers were however guided by the principle of parsimony in that quotations were selected according to the clarity with which they provided “evidence”. Consequently, more suitable quotations replaced existing quotations, rather than generating a comprehensive list of quotations. Quotations about which a researcher was uncertain were highlighted, and discussed with another member of the research team, culminating in a decision: (a) to retain the evidence in the file; (b) to transfer the evidence to one of the other files; or (c) to expunge the evidence as not adding weight to any of the files. The researchers then reviewed the quotations for each research question in turn, conducting a quality audit to ensure that the quotations selected exemplified each more-or-less unique set of responses. These quotations formed the basis of the results and discussion section.

Results

Research Question 4: What are the self-reported characteristics of high-achieving (GPAs \geq 5.5) university students with a disability?

It is inspiring to record the successes that interviewed students were achieving in spite of the challenges associated with their respective disabilities. One personal characteristic reported by several students was the capacity to take responsibility for their engagement with higher education studies by demonstrating initiative. Jen was a good example:

“Okay, so they have a choice – they can either be a survivor or a victim, and being a survivor is needing to access and getting the help that's available... and

pretending there is not a problem or pretending that everything is the same (Jen 306-308).”

In addition to personal initiative, other students acknowledged the importance of accepting the contribution of others to their endeavours. For example, Cassandra described her situation:

“...I suppose I’m probably doing well because, I suppose I have ownership over my condition now, if like I feel as though I know how to manage it. Obviously I don’t do it alone; I’ve got doctors and psychiatrists and a partner who’s very supportive (Kassandra 187-189).”

Participants were open and honest in sharing their personal experiences, and acknowledged that personal characteristics could be obstacles. The value of these ‘negative’ examples lies in normalising students with disabilities, and may be useful when disseminating findings to commencing students - or indeed school students contemplating the transition from secondary school to higher education. Lawrence acknowledged that he would have been better off had he been less determined (“pig headed”) not to identify his needs as a student with disability:

“I shouldn’t be so proud and actually ask for help. It would have been easier if I had actually requested some help in the exam rather than just being pig headed and think, “No I’m as good as anyone else” (Lawrence 336-338).”

Annemarie identified as having perfectionistic tendencies, but shared the insight that setting very high expectations may have no benefits in the real world. As she remarked:

“And, you know, when I actually go out into the workplace, not many people actually ask you what your GPA is; they just ask you if you have a degree (Annemarie 418-419).”

Similarly, Colleen also highlighted the potential downside of perfectionism with this insight regarding assignments when she said:

“I’m perfectly capable of doing, but because of the pressure that I place on myself to do really well in each assessment, I end up sabotaging myself, and handing it in late (Colleen 120-122).”

Research Question 5: What barriers to academic persistence confront university students with a disability with high GPAs?

It was instructive to hear that students did not simply identify external circumstances or individuals as exclusively representing barriers to their success - as exemplified by Lawrence - but that there were also significant areas in which university staff, systems and structures constitutes obstructions to student success. Several students identified the attitudes (and consequently the behaviours) of university staff as problematic.

Aston identified this operating at a systemic level, commenting that:

“I think able-bodied people don't understand people with disabilities. [As a consequence, they do not provide the level of support and assistance required]. ... And that's not going to change ... unless it's an education where the attitudes [are] towards people as people (Aston 531-537).”

More specifically, administrative systems and administrative staff were identified as barriers, particularly as the promise of service and support advertised was not delivered. Joanne's comment reflected several other participants' experiences of engaging with this wider system and being disappointed by the service provided:

“I've found the administration to be incompetent but... I get annoyed at the obstacles that are there which shouldn't be there by laziness and unorganised-ness on their part (Joanne 83-86).”

The context in which this excerpt took place made it clear that this was not simply the opinion of a single disgruntled 'client' but a summary of repeated efforts, thwarted efforts at that, by the student to get the level of service promised by the particular university section. Similarly, the need for individual academic staff to comply with published policies and procedures was identified as critical in supporting the needs of individuals. For example, Joanne commented about her experience of seeking assignment extensions:

“...you go to your lecturer first and as I found that if your lecturer isn't there there's nothing they can do about it so it becomes this self-defeating loop (Joanne 183-185).”

Many observations portrayed responses to students by academic and professional staff as uninformed, uninterested or otherwise functioning as barriers. For example, Selma voiced her frustration about their experience with professional and academic staff:

“I find it really frustrating dealing with-yeah, administrative red tape ... I've sort of found that there's inequity and to me sometimes it's not what you know or what you've done or what ability or knowledge you have, it's who you know (Selma 121-123).”

Dorothy aptly summarized her experience with academic staff this as follows:

“...some lecturers are fantastic in terms of their contact and how they deal with you when you contact [them], and some of them really aren't (Dorothy 117-118).”

It was acknowledged that a lack of knowledge and awareness about the nature of disability, more particularly mental health conditions, was possibly at the root of the responses of some members of staff; two participants voiced their experiences that highlighted the need for staff training:

“I have come to realise that when you look and act 'normal' people do not understand you have a mental disability. Not being understood is lonely and sometimes that hurts (Janine 240-242).”

“...they didn't know how to treat me when I told them that I had a manic episode and that I was having trouble coping or whatever, they didn't know how to treat me. (Camilla 259-262).”

Students identified the high costs of pursuing education as a barrier to persistence. As one of the participants remarked:

“Financial pressures are always a concern... Going in first semester I paid not quite \$400 in text books, which I hadn't expected to be that high, and I'm very conscious of the [debt]... That's another \$300 of textbooks that I'm going to have to find (Halina, 122-24).”

Whereas financial stress often presents additional barriers to students, an equity scholarship may be a boon for students with disabilities. However, the process to apply for assistance may be a barrier in itself, as was exemplified by Camilla's experience:

“Yeah, you've got to jump hoops, you've got to prove all your income, and prove all your expenses and oh my goodness, they don't make it easy (Camilla 299-300).”

Financial pressures may also impact on the capacity to pay for childcare, making it difficult to attend to studies without feeling that one is neglecting one's parenting responsibilities - possibly having greater impact on women - as Rachele related:

“... my children get exacerbated [sic] with coming to me and I've got to [do] assignments in the holidays and all that (Rachele 301-302).”

The final example of barriers encountered by students has been selected because it represents many experiences reported in that students often followed the description of “problem” with one or more “solutions”; this approach is clearly constructive and contributes to the academic success of this cohort of students. This does not detract from “problems” with the system, including wait times to access psychological services, staff turnover, and administrative errors. Rachele was describing the process of gaining supporting documentation for an application for an extension to submit an assignment - required relatively frequently owing to her psychological difficulties, and for which condition she regularly consults the psychologist at the university:

“On the whole they've been pretty good. Sometimes it's been horrendous because things have come up and it takes forever to get into your psychologist when things come up unexpectedly – you finally get the letter and you hand it over to Student Services and because they've got such a high turnover in staff, paperwork has gone missing. And I suppose I've learnt now just give photocopies rather than the originals because you've got nothing to go back on (Rachele 376-381).”

Janine similarly lamented the difficulties associated with staff changes, albeit that she has experienced some stability in this regard:

“Yes, a good counsellor like [Name], and one that will stay and be available as reiterating problems and issues, etc., becomes exhausting. I cannot count the times I have had to tell 'my story' and I get sick of it (Janine 204-206).”

Research Question 6: How do high-achieving (GPAs \geq 5.5) university students with a disability negotiate the barriers that impede their academic success?

Strategies employed by successful students clearly derive in great measure from personal characteristics already identified in the section above relating to research question – 4; the material presented here is therefore complementary to that section. Halina demonstrated the value of contextualising her circumstances, reflecting stoically that:

“I don’t know, it’s not that I don’t think of myself as having a disability, I just think there are so many people worse off than me out there (Halina 192-196).”

Seeking (and providing) peer support was identified as an excellent strategy by a number of participants, as was providing such support. Some students demonstrated that taking the risk of disclosing their condition to peers could have significant benefits in terms of feeling understood and supported; this was particularly evident when there was a reciprocal disclosure:

“... [There was another student] ...who is bipolar, and so that’s been interesting. We sort of have an informal sort of support. We support each other, like if she’s a bit unwell, like you can always tell, you know, you can see the signs and know when somebody just needs a bit of support, so that’s been good as well having other people with the same condition who you’re studying with (Kassandra 82-87).”

Cultivating self-knowledge and ultimately accepting that one’s circumstances placed one at a disadvantage were identified as another strategy, and they were articulated by Aston as follows:

“Work around it. Know your strengths and work with your strengths. Don’t emphasise your weaknesses, and find ways around. Work smart not hard. Work it out, work it out in your head (Aston 559-561).”

These insights would be invaluable to all students, including under-prepared students and those from disadvantaged socio-economic backgrounds.

Although they were developed individually and hence potentially not applicable to all students, a number of strategies were mentioned, and are worth listing to illustrate further the resourcefulness and hard-earned common sense insights developed by many of the participants interviewed. Andre identified prioritising as a way of managing his depressive symptoms:

“Sometimes it’s just realising that I’m going to have to take a break for today and do something else and that later on I’ll do it (Andre 205-206).”

Another strategy highlighted the importance of nutrition:

“One thing I try to make sure of is that I always eat well (Janine 48).”

Noreen advocated exercise:

“... like my brain’s full of so many facts [that] I can’t sort them all out in my mind, and I either go for a run or go for a swim, or even just to walk 15 minutes (Noreen 74-75).”

Self-care routines were useful strategies mentioned by Celeste, as ways to pause and to take stock of demands and resources:

“Honestly, it’s mostly just sleep and making tea ...” (Celeste 190-200).

Annemarie mentioned that she listened to her body a lot more than she used to, and that she used meditation as a relaxation technique when she recognised body tension signalling:

“if I’m tipping myself too far now, so I don’t tend to fall into so many heaps now, because I can see something coming and I strategise around it (Annemarie 131-134).”

One of the many challenges facing providers of support for students with a disability relates to engaging students who do not possess the types of insights discussed above, and who may benefit from opportunities to develop them; the psycho-educational and explicitly the psychotherapeutically oriented services that might serve these ends are discussed in the following section, but the issue is flagged here since empowered (and successful) students might play significant roles including acting as informal mentors to their peers (extending the peer support notion identified earlier), but equally lobbying university authorities to provide appropriate formal services.

Many students mentioned the value of accessing the formal support provided by the university as an excellent strategy. Camilla advocated the early identification, disclosure and clarification of needs:

“Go straight to disability services and get – disability resources – and get a support, a notification of support needs (Camilla 623).”

Asked what she would want to tell any incoming students with disabilities, she went on:

“I want them to know that they're not alone. To get to know what their supports at uni are –the counsellors and everything that they’ve got there, and to make sure they register early and get that in there, so that they – yeah they know what their rights are (Camilla 632-639).”

Organisational and self-management skills may be regarded as personal attributes as well as strategies to manage significant demands with limited resources. Lawrence cogently described these skills:

“You’ve got to be organised. ... Basically I did myself a timetable up and when [I was] ... basically working a 40-hour week at uni and doing everything at uni, but as time has gone on I need to do that less and less (Lawrence 80-83).”

Brian, aged 35, is taking time off from well-paid employment as a tradesperson in order to complete a degree. The strategy that he applied to concentrate all of his energies on his studies in order to complete his studies successfully, but within the shortest period of time, was summed up as follows:

“Treat uni like a job, start doing something at 8.00 am and finish at 5.00 pm. I try to have the weekends off (14-15).”

Research Question 7: How do high-achieving (GPAs \geq 5.5) university students with a disability perceive the usefulness of institutional policies, programs and support services for students with disabilities?

As articulated by interview participants, there was significant acknowledgment of the range of support services provided for students with disabilities, and the value these represented in facilitating student success. For example:

“The [disability support statement] has been the best-you know, the biggest support to me because I know that I just need to send that off to somebody... and they’ll take that into account (Jacinta 130-132).”

“During exams...I have the option to take-just to sort of basically sit outside for 20 minutes or half an hour and de-stress I suppose... I think the fact of just having it there as a security, that if you start to feel overwhelmed that you can go out and do that, has been really, really good (Colleen 135-137).”

“The counselling having that someone telling you, “It’s okay you’re only human” was really good, yeah... and they just helped me sort through what was going on and I made a positive comeback (Vicki 138-140).”

“The disability support understands that people do have disabilities, maybe it’s psychological or physiological, but to me it’s just [that] they believe me by saying ‘Here are the resources to help you’... Someone’s disability doesn’t have to stop them from having an education and achieving an education (Catrina 142-144).”

“I find disability services emails quite frequently checking how I’m going with my courses, to make sure I’m on track and if I need any assistance to don’t hesitate to contact them. And I think it’s nice to get that email every now and then. Just someone thinking about how you’re going at uni (Tresa 144-146).”

There were also instances identified when students expressed dissatisfaction with the support received - in the sections above reference has been made to some of these, including possible remedies, such as staff sensitivity training, the consistent application of policies and procedures, and removing unnecessary bureaucratic obstacles. It was concerning that a number of participants stated that they were not aware of the services provided by the university and of how these could be utilised to assist them with academic issues and challenges:

“I think probably the disability services need to be more visible. I honestly didn’t know that there was such an animal until I started answering these questions (Halina 276-277).”

“I was really surprised, like oh my gosh, I thought ‘Gosh they’re willing to do that and offer that, even with lecture notes and ...’ I was just really - I was a bit taken [aback about] how much support there was because I didn’t really know (Catrina 331-339).”

“I haven’t investigated. I tend to be sort of rather – try to be self-sufficient, which is probably one of my downfalls (Esmerelda 181-184).”

“I didn’t know there was such a thing at all (Dorothy 250-252).”

Summary of Interview Findings

The findings from this stage of the study provided important insights not only into some of the challenges faced by students with a disability in higher education, but also into the context-specific strategies that are employed to overcome potential barriers by a group of high achieving students who identified as having a disability. It was clear from the findings that attitudes and resources formed a core resource for these individuals. The participants all demonstrated several resilience strategies in overcoming barriers, not least being solution-focused in their engagements with education, a constructive approach that has contributed to the academic success of this group of students. The specific strategies employed by the participants varied, and can be considered as deriving from the personal characteristics displayed by those individuals. Some of the shared strategies outside of individual personal characteristics included seeking and providing peer support; the importance of gaining self-knowledge about the condition and maximising the strengths rather than focusing on the challenges; and the effective accessing of formal support mechanisms that the university can provide.

The participants generally acknowledged the range of supports available to them and valued these in the facilitation of student success. However, their effectiveness was often challenged by the actual amount of support received by individuals. Participants were insightful in their recommendations of remedies for these issues such as increased staff sensitivity and awareness training; a consistent application of policies and procedures; and the removal of what were considered unnecessary bureaucratic obstacles. What was concerning from some of the interviews was the lack of knowledge that some participants had concerning the organisational supports that were available to them, and a recommendation was made by several participants that such services should be much more visible within the wider university context.

Conclusion

Discussion

The purpose of this study was to understand the lived experiences of students with a disability in higher education in regional Australia. Using a sequential mixed method design, the study first identified the demographic, academic and disability-related characteristics of students who were studying at higher education institutions in regional Australia. Next, the study used SEM techniques to explore the relationship between resilience, career optimism, wellbeing, and academic achievement. Finally, interviews were conducted with a subset of academically successful students with a disability to understand how these students overcame personal and environmental barriers that typically disadvantaged their peers with a disability. In doing so, we aimed to frame the focus of research about the retention of university students in relation to a self-empowering model that incorporated the constructs of resilience, optimism and wellbeing.

There are five major findings that warrant further discussion.

First, the results indicated a high percentage of students with psychological conditions in the sample. Nearly 35% of the sample identified themselves as having a psychological condition. This category included students with self-reported post-traumatic stress disorder, depression, schizophrenia, bipolar disorder, obsessive-compulsive disorder, panic disorder and other related disabilities. Additionally, many of these students reported having one or more psychological conditions. These findings are consistent with other studies that have reported an increasing number of students with psychological conditions at universities across Australia (Cavallaro, Foley, Saunders, & Bowman, 2005; McLean & Andrews, 1999; Stallman, 2010). This growth in the number of students with psychological conditions in higher education in Australia raises some key issues that need immediate attention.

One of these key issues of concern is the high attrition rate among university students with psychological conditions. Among all disability categories, students with psychological conditions have the highest attrition rate in higher education (Hurst & Smerdon, 2000). It has been well documented that between 40% and 86% of students with psychological conditions withdraw from university prior to the completion of their degree (Breslau, Lane, Sampson, & Kessler, 2008; Collins & Mowbray, 2005; Moisey, 2004). Further, many of these students have poor academic outcomes (Hunt, Eisenberg, & Kilbourne, 2010; Stallman, 2010) and complete fewer numbers of required courses (Cavallaro et al., 2005).

The above findings suggest that many students with psychological conditions face additional barriers in university settings that are unique to their disability needs. For example, the severity of the psychological conditions and the side effects of psychotropic medications can adversely affect the optimal functioning of short term memory, and lead to deficits in executive functioning such as planning, organising and regulating learning (Hartley, 2010). Additionally, the stigma associated with many psychological conditions prevents students from disclosing their disability to the Disability Resource Office, thus potentially depriving them of the needed academic and behavioural support. Therefore it is imperative that university administrators develop support services that address the issue of high attrition among this growing body of student population.

Second, the results indicated that the relationship between academic achievement, resilience, career optimism, academic satisfaction, and wellbeing is not direct. Existing

research suggests that an indirect influence of these factors on reported academic outcomes may occur in several ways. For example, resilience may facilitate more adaptive coping and study skills strategies (Burns & Anstey, 2010). Similarly, the feeling of career optimism may increase the students' level of engagement with activities that advance the setting of goals, as well as their career and self-management strategies (McIlveen, Beccaria, & Burton, 2013; Rottinghaus, Day, & Borgen, 2005). Finally, those who feel more positive about their choice of degree (academic satisfaction) are likely to be more proactive in terms of study and career decisions (Nauta, 2007). In the future, longitudinal research needs to be undertaken to enable a better estimate of the influence of resilience on optimism, wellbeing and academic outcomes. This kind of research is significant as it is difficult to eliminate common university stresses such as high-stakes assessments, predominantly online teaching, substance abuse and financial debt.

Third, results indicated that the resilience scores of students with GPA ≥ 5.5 were higher than those of students < 5.5 . This is a new finding and has not been reported in the existing research. Because the data were self-reported, further research needs to be conducted to clarify and/or verify the responses of participants who scored high or low in resilience. If this finding holds true in a larger sample and across different disability categories, it has enormous implications for improving the retention rates of students with disabilities. Disability Resources Offices across the nation can offer resilience intervention programs that can support post-secondary students with disabilities.

Fourth, the qualitative findings from this study indicated that a few academic staff members did not provide educational adjustments despite appropriate documentation being provided to them. In fact, post-secondary students with a disability around the world have consistently voiced their concerns about academics' limited awareness about disability rights, support services or appropriate adjustments (Burgstahler, Duclos, & Turcotte, 2000; DaDeppo, 2009; Hutcheon & Wolbring, 2012; Mamiseishvili & Koch, 2011). Further, interview participants perceived that some academics' decisions with regard to educational adjustments were based on their perceptions as to whether the adjustments requested would provide undue benefit to the student, and/or lower the course standards for other students. These findings suggested that some academics seemed to misunderstand the principles behind reasonable adjustments. Taken together, these findings are of concern and go against the spirit of the Australian Disability Discrimination Act of 1992.

Given the above findings, research is needed regarding the knowledge, attitudes and teaching practices of academics in higher education in Australia. Specifically, research needs to examine the inconsistencies in the provision of instructional and assessment adjustments from one academic to another, and between one department and another. Besides, there is a need to conduct research on the type of adjustments that are most effective and appropriate for each individual. The results of this research would enable academics to offer adjustments that meet the students' needs without lowering the standards of the course. An additional area of research includes the knowledge of universal design in course design among academics.

Findings from these research would enhance the lived experiences of many students with a disability in higher education.

Finally, findings from the qualitative interviews indicated that academically successful university students with a disability shared several key attributes such as: (a) being aware of their strengths and needs; (b) having the ability to discuss their disability with academics

and obtain the needed instructional and assessment adjustments; (c) being aware of informal and formal services and supports; (d) having the ability to access the needed information, services or supports; (e) being adept in problem solving; and (f) having a supportive informal and formal social support network. These findings are an initial step to gaining a better understanding of the lived experiences of academically successful students with a disability in higher education. Because of the small sample size, further research needs to be done to validate these findings further. Moreover, research needs to investigate the experiences of students who drop out of higher education. Specifically, the strategies used by these students to negotiate internal and external barriers need to be elucidated. These findings would assist university administrators to create necessary support services to prevent the attrition of these students.

Limitations

The above findings need to be interpreted with caution as the sample had fewer numbers of students who identified as Aboriginal and/or Torres Strait Islander, and predominantly included female participants. Although this current study was conducted at a single university, some of the critical findings might apply also to other universities in Australia.

Implications for Universities

Given the increasing number of students with psychological/emotional disabilities entering post-secondary settings, it is essential that universities re-examine their disability support policies and services. As more students with a disability opt for online study than for on-campus study, the traditional disability support service delivery might no longer be effective in meeting student needs without some revision. We propose five recommendations for universities to consider for implementation that would lead to improved outcomes for post-secondary students with disabilities. Our recommendations are based on the principle, “first enable the environment, and then enable the student.”

Recommendation 1:

Create a professional development-training module for mandatory training for all academic staff that focuses on universal design principles.

When academic staff design courses based on the principles of universal design and accessibility standards, the courses become more inclusive and meet the needs of most learners, including those with disabilities.

Recommendation 2:

Create specific programs of support for female university students with disabilities.

In this study, female students made up a majority of respondents, and needs specific to these students were highlighted. Previous research has shown that many female students, including those with disabilities, experience high levels of stress in managing the multiple roles of student, mother and partner (Johnson, Schwartz, & Bower, 2000). Specific programs, which address the possible role tensions experienced by this population, could be considered. Further research would be useful to identify further the particular challenges of female students with a disability.

Recommendation 3:

Provide resilience intervention training to university students.

One of the key findings of this study was that academically high-achieving students with a disability had higher resilience scores, compared to lower achieving students with disabilities. The findings suggest that students with high resilience scores are able to manage university related stresses (e.g., assignment deadlines and financial debt) better than those with low resilience scores. The qualitative findings indicate that resilient students better use their strengths and social support systems to negotiate university stresses. Resilience can be increased through a wide range of positive psychological interventions, and implementing such programs could be beneficial.

Recommendation 4:

Provide comprehensive and flexible disability support services.

In most Australian universities, there appears to be poor communication among academics, disability practitioners and health/psychology services. Additionally, disability and health/psychology services are usually available only during daytime hours on weekdays, when most students are working or taking classes. Therefore universities need to adopt a more comprehensive framework to meet the needs of students with disabilities. Such a framework needs to address issues related to mode of study and whether the students are on campus or are studying at a distance.

Recommendation 5:

Provide online student discussion groups.

A number of students interviewed identified having access to a peer online discussion group as being a useful tool in their studies. Many identified that having access and being able to share their experiences about their study would be helpful to them both socially and academically. The recommendation would be for a closed group specifically for students with a disability.

Conclusion

There has been a significant growth in the numbers of students with a disability in higher education in Australia. In this study, we provided an insight into specific experiences of students with a disability enrolled at a regional university. Because of the exploratory nature of this study, the results are not exhaustive. It is hoped that the current study will provide an impetus for further research in higher education. There is a need for increased research in higher education to identify evidence-based practices that specifically improve the student retention rates and enhance the quality of the academic experiences of students with a disability. The findings of this study provide a useful framework to enhance those experiences.

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