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Erika Abarca Millan,  
University of Chile, Chile

## \*CORRESPONDENCE

Paul A. Bartolo  
✉ paul.a.bartolo@um.edu.mt

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# Aspirations and accommodations for students with disability to equitably access higher education: a systematic scoping review

Paul A. Bartolo<sup>1\*</sup>, Michelle Borg<sup>2</sup>, Anne-Marie Callus<sup>3</sup>, Alistair De Gaetano<sup>4</sup>, Marchita Mangiafico<sup>2</sup>, Edward Mazzacano D'Amato<sup>2</sup>, Carmen Sammut<sup>5</sup>, Ramona Vella Vidal<sup>2</sup> and Jonathan Vincent<sup>6</sup>

<sup>1</sup>Department of Psychology, University of Malta, Msida, Malta, <sup>2</sup>Access-Disability Support Unit, University of Malta, Msida, Malta, <sup>3</sup>Department of Disability Studies, University of Malta, Msida, Malta, <sup>4</sup>Autism Advisory Council, Government of Malta, Birkirkara, Malta, <sup>5</sup>Department of International Relations, University of Malta, Msida, Malta, <sup>6</sup>Educational Research Department, Lancaster University, Lancaster, United Kingdom

**Introduction:** Several international conventions have recognized the importance of equal access to higher education on the basis of 'capacity'. However, inequalities persist for various groups. This paper presents a systematic scoping review of studies on the aspirations and access needs of students with disability, medical and mental health conditions to equitably participate in tertiary education.

**Methods:** A search of ERIC, PsycINFO and Web of Science databases identified 133 relevant research articles from across the world covering the experiences of students with all types of disability. These were subjected to thematic analysis.

**Results:** Three main themes were identified. Firstly, the findings showed that a crucial component of the student higher education experience was the development of their own self-identity, addressing stigma and enhancing self-advocacy skills, autonomy, and career prospects. Secondly, the studies described how students struggled for full membership in the university community, calling for a transformation of university physical, social and teaching environments for them to access and participate in academic and social activities. Thirdly, the analysis showed that students valued individual accommodations in both coursework and assessment.

**Discussion:** These findings constitute a newly comprehensive framework for inclusive tertiary education systems and individual accommodations which is grounded in empirical research from a wide variety of contexts. This can serve higher education institutions to develop policy and procedures to ensure equitable participation of students with disability.

## KEYWORDS

disability, mental health, higher education, access, inclusion, accommodations, equity

## 1 Introduction

Several international conventions have recognised the importance of ensuring equal access to higher education on the basis of 'capacity' to promote individual and societal development [UNESCO and The Right to Education Initiative (RTE), 2022]. The United Nations Convention on the Rights of Persons with Disabilities (UN General Assembly, 2006) requires state parties 'to ensure that persons with disabilities are able to access general tertiary education... on an

equal basis with others' and that 'reasonable accommodation is provided' [art. 24(5)]. However, while the number of students with disability in higher education (HE) is growing, increasing research shows that they still face barriers to equitably participate successfully in an ableist environment (Lindsay et al., 2018; Brown et al., 2021; Sheldon et al., 2021).

The term persons with disability also includes persons having medical and mental health conditions, as the impairment component of disability within the scope of the UNCRPD: 'those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others' (art. 1; see Szmukler et al., 2014). Thus, in a study of a United States nationally representative college student sample, Carroll et al. (2020) asked participants 'whether they have a long-lasting (6 or more months) health condition or disability that substantially limits a major life activity' (p. 816). Moreover, students often report having 'multiple disabilities or health problems' (Griful-Freixenet et al., 2017, p. 1632). Such approaches serve to also include respondents who would otherwise conflate the term 'disability' with one of several conditions seen as 'traditionally' disabling, in resulting samples. For instance, in an online survey of 105 students from 30 universities in the United Kingdom, one-third declared a single disability, one-third two disabilities, and the remaining third 3–11 disabilities (Osborne, 2019). On the other hand, some students may be hesitant to identify as disabled due to stigma and, therefore, studies do not capture all students with disability in higher education (Grimes et al., 2019).

The aim of this study is to support HE institutions to develop appropriate structures and processes to respond to the diversity of needs of students with disability for them to equitably participate in tertiary education. This will be achieved by bringing together the voices of students in HE from around the world that have been reported in research about student aspirations, requests for reform in HE systems, and requests for individual accommodations. By emphasising student voice, it is expected that students will be empowered to express their aspirations and needs. Furthermore, it is understood that once institutions become more aware of student requirements, there is a greater chance for them to address these needs effectively, allowing more students with disability to participate successfully in HE (Accardo et al., 2019b).

The study thus aims to review student perspectives around three objectives. Firstly, it seeks to develop a better understanding of students with disability by expressing their aspirations, that is what they wish for and hope to achieve in and through HE, and how these are processed within an ableist tertiary environment.

The other two objectives address the two recommended prongs for the promotion of inclusive education (Bartolo et al., 2002). The first prong (and second objective) focuses on the development of a universal design of the whole university and campus systems that welcome and cater to the needs of all the diversity of students, in terms of both the learning system as well as the physical and social environment (Burgstahler, 2015). This is usually seen as most desirable because it promotes the equal valuing of all members of the university community, but it is also regarded as the most difficult as it requires a shift in the mentality of staff and students as well as systemic changes.

The other prong (and third objective) is complementary to the first prong in that no ideal universal designs exist that meet each individual's specific needs. Therefore, HE systems must also have

procedures in place to enable individuals to participate equitably through relevant individual accommodations as necessary. Such accommodations too are required for participation in both learning and assessment (Edwards et al., 2022; Rodeiro and Macinska, 2022) as well as for participation in community activities.

It should also be noted that accommodations are in addition to, but distinct from, providing therapeutic services to improve students' well-being and skills. An inclusive system and the provision of accommodations is more in line with the social model of disability, which stipulates that the education system should be tailored to the needs of people with disabilities rather than expecting individuals to adapt to the system (Oliver, 2013). While some universities address both needs through a single service (e.g., Murphy, 2017; Ehlinger and Ropers, 2020), most universities, including the University of Malta, address the two needs through separate services (University of Malta, n.d.).

There is already a wealth of literature on the aspirations, experiences, and needs of students with disability in HE. Indeed, we found that at least 89 systematic reviews in the field had already been published from January 2017 to February 2022. These were identified through a search of all databases at the University of Malta library (HyDi—Hydro Date Initiative) with the following search terms: (includ\* OR disab\* OR access\* OR accomod\* OR adjust\* OR concession\* OR 'transition planning' OR 'mental health') AND ('higher education' OR tertiary OR university OR college OR post-secondary) AND 'systematic review'. Only 10 of these were found to be relevant to the current review after applying the inclusion criterion that the majority of studies in the review had to report student voice, and the exclusion of reviews that reported intervention treatments or were focused on socioeconomic or cultural disadvantage. These 10 reviews were found to cluster into four major concerns relevant to our own review: (a) three were general reviews of the provision of accommodations for students with disability (Lindsay et al., 2018; Brown et al., 2021; Moriña and Biagiotti, 2021); (b) four reviewed experiences of students with mental health conditions in HE (Sanderson et al., 2020; Sheldon et al., 2021; Elharake et al., 2022; Reis et al., 2022); (c) two reviewed the use of Assistive Technology (AT; McNicholl et al., 2021) and online learning (Reyes et al., 2021); and (d) one reviewed post-secondary education transition programmes (Lindsay et al., 2019). Thus, while the scope of the first cluster was quite similar to the current review, the other three clusters had narrower ranges, namely: students with mental health conditions only (b); the use of AT and online learning only (c); and transition processes only (d). Moreover, while the first cluster addressed our broader research question, the reviews were limited in other ways: one reviewed studies conducted only in the United States (Brown et al., 2021), and another looked at studies published between 1996 and 2016 (Lindsay et al., 2018). Only Moriña and Biagiotti's review addressed two issues that are covered in the current review, but their two main foci differed from ours in other ways. The limited overlap was also evident in that only nine of their included 31 were also included in our own review. Thus, while their first focus was on what they termed student 'internal success factors'—'Self-Determination, Self-Advocacy, Self-Awareness, Self-Discipline, Self-Esteem, and Executive Function' (p. 5), their account regarded these factors as students' personal characteristics, with no mention of how these internal factors were influenced by the HE context and there was no reference to stigma. The second focus which was closer to our study

highlighted what they called ‘external success factors’: ‘Family support, Moral support, Financial support, Social support, University support, Disability services, Staff and faculty support, and Peer social support’ (p. 5). However, because their focus was on success factors, only a minor consideration was given to the current study’s main issues, namely how the university system facilitated access to learning and belongingness, and the difficulties and needs encountered that necessitated accommodations.

The present review captures the student voice: first, regarding their aspirations and engagement within an ableist HE environment; secondly regarding how far they perceive the HE system as accessible and enabling or otherwise; and, thirdly, how their individual participation is influenced by the provision or otherwise of accommodations that enable them to overcome any impairments. It is acknowledged that students with various disabilities, medical and mental health conditions may have different aspirations, needs and perceptions, but this review includes both studies that focus on particular conditions as well as those that focus on a variety of conditions. The goal is to construct a framework for understanding the perceived overall responsiveness of the HE system to individual needs.

## 2 Methods

The current systematic review is a scoping review. While traditional systematic reviews study the effectiveness of interventions, scoping reviews are useful for answering much broader questions, such as ‘What is known about this concept?’ (Tricco et al., 2018, p. 1). Our research question was: what are the expressed aspirations and access needs of students with disability to equitably and successfully participate in higher education? The goal was thus to capture the range of concepts about aspirations, accessibility and accommodations (Thomas and Harden, 2008).

The SPIDER model (Cooke et al., 2012) was used to search for studies for this systematic scoping review. Table 1 shows the SPIDER tool’s components and how they were used to create descriptions of our own Sample, Phenomenon of Interest, Design, Evaluation, and Research Type, which were then translated into the following more specific search terms: (disab\* OR ‘mental health’ OR inclus\* OR

access\* OR accommod\* OR adjust\* OR transition; in title); AND (‘higher education’ OR tertiary OR university OR college OR ‘post-secondary education’ OR undergraduate; in title); AND student\* (in abstract). The search was further restricted to empirical, peer-reviewed journal articles, in English, published from January 2017 to February 2022. We are aware that we might have picked more articles if we had added more specific disability labels—such as autism or dyslexia—to the first list of terms, but we found that we did have representation of different disabilities without adding more to the already high number of included studies.

### 2.1 PRISMA search

Three databases were searched: PsycINFO, deemed to be the most relevant to our research question and which was used in previous reviews; ERIC for a wider capture of research in education; and the multidisciplinary Web of Science. Figure 1 presents the PRISMA search process. The search yielded a total of 1801 studies (after duplicates were removed). The two main researchers then first separately read the title and abstract and agreed on the inclusion of only 181 studies based on the following inclusion and exclusion criteria: included articles were required to primarily report the voices of students with disability, mental health conditions, and/or medical conditions; however, such articles were excluded if they reported therapeutic interventions, or if they focused on dimensions of student diversity other than disability, such as socioeconomic disadvantage, gender, race, ethnicity, and LGBTIQ, or if they focused on intellectual disability. The two researchers again first read the full texts separately, and then agreed on the exclusion of another 48 articles based on the same inclusion and exclusion criteria. It was decided that, while the quality of the studies varied, it was deemed sufficient that the articles were peer reviewed and that they reported student voice and its context (see, e.g., Bradley et al., 2018). As a result, we ended up including a total of 133 studies in our review (see Figure 1).

### 2.2 Nature of the included studies

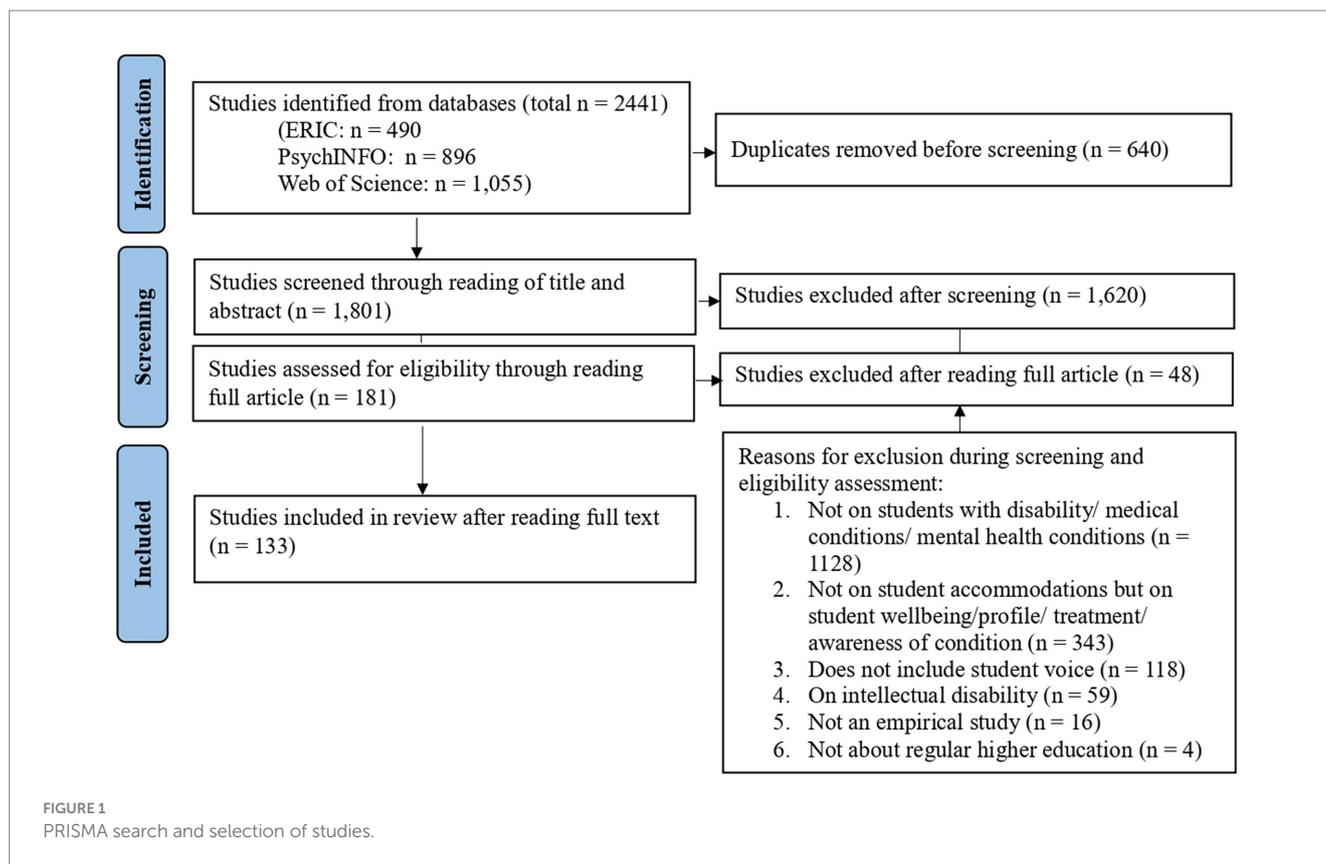
Participants in the 133 studies reviewed were enrolled in HE institutions in various countries across continents (see Table 2): 51 from America and Canada, 49 from Europe, seven from the Middle East, eight from Asia, 17 from Africa, and seven from Australia and New Zealand (this totals to more than 133 because some were from more than one country).

Table 2 also shows that most of the studies (90) used a qualitative method, while 31 used a quantitative methodology, and 12 used mixed methods. The number of participants in qualitative research was 1,835, ranging from a single case study (Hadley, 2017) to 75 participants (Vaccaro et al., 2018). Those in quantitative research totaled 9,304, while those in mixed methods totaled 1,063, resulting in a full total of 12,202 participants.

More than a third of the studies (55) focused on a single disability, namely physical disability (7), visual impairment (12), hearing impairment (1), ADHD (3), ASC (13), LD (8), medical conditions (2), and mental health conditions (9). The remaining 78 included participants with more than one type of condition (see Table 2).

TABLE 1 SPIDER search tool.

Sample	Students with disability (including medical and mental health difficulties) in higher education
Phenomenon of interest	Aspirations and engagement of students with disability in higher education and their requests for inclusive systems and individual accommodations
Design	Diverse methods (as long as they involved empirical data with student voice)
Evaluation	Student aspirations, experiences and perceptions of higher education
Research type	Qualitative, Quantitative, and Mixed studies



## 2.3 Method of analysis

This scoping review is based on a qualitative thematic analysis of the included 133 studies. The two main researchers used NVivo software to collaboratively thematically analyse all 133 included articles in three inductive stages (Thomas and Harden, 2008): initial line-by-line descriptive coding of the findings section of the studies that led to numerous topic codes (e.g., Accommodations for ADHD, Accessibility to classrooms); this was followed by the grouping of the codes into a hierarchical structure with the following 10 larger descriptive categories (aspirations for higher education, transition processes, difficulties encountered, overarching challenges and system reform, individual accommodations, student self-identity, stigma, assessments of disability, online facilitation and barriers, employment and future life) finally the extracts of each of these topics were then reread analytically in search for meaningful answers to our research question, leading to the identification of three themes and 13 subthemes as described below.

## 3 Findings

Table 3 gives an overview of the three themes and 13 related subthemes that were identified through the thematic analysis of the 133 studies reviewed. These themes addressed our research question on the aspirations for and experiences in HE of students with disability, the accessibility issues of HE environments, and the students' concerns and needs for individual accommodations. First, the analysis revealed that a crucial component of the student higher

education experience was the development of their own self-identity, addressing stigma and enhancing self-advocacy skills, autonomy, and career prospects; second, the studies described how students struggled for full membership in the university community, calling for a transformation of university physical, social and teaching environments for them to access and participate in academic and social activities; and third, the analysis showed that students found individual accommodations for both coursework and assessment to be necessary and very helpful. These findings are described in the next sections.

### 3.1 Theme 1: An opportunity for exploring self-identity

Firstly, the studies showed that students with disability, no less than their peers, experienced post-secondary education as a period of ongoing identity exploration (Squires et al., 2018; Dangoisse et al., 2020). While this might be considered an 'internal' issue for students (Squires and Countermine, 2018), and therefore not strictly within the scope of our study on how HE institutions are expected to accommodate students, it is linked to our search for considering student aspirations, and also to access and accommodations in two ways: firstly, because this internal struggle is part of the process of students' readiness to disclose their disability or otherwise with implications for accessing needed accommodations (Vergunst and Swartz, 2021); and, secondly, because the identity process also reflects the experience of being accepted and valued as equals at university (Ule, 2017). Two studies (Vaccaro et al., 2018; Newman et al., 2019)

TABLE 2 Main features of the list of 133 articles included in the review by area of disability.

First author and date	No. and disability of participants	Country of study	Method (QT/QL/M)	Research topic
<b>Physical disability</b>				
Abrams and Abes (2021)	1 PI	United States	QL	Queer disabled activist
Al Masa'deh (2020)	63 PI	Jordan	QT	Perception of challenges by SwPI
Braun and Naami (2021)	2 PI	Ghana	QL	Experiences of SwPI
Duma (2019)	7 PI	Africa	QL	SwPI in a university residence
Mays and Brevetti (2020)	10 PI	United States	QL	Out of class engagement by SwPI
Minotti et al. (2021)	27 PI	United States	M	Communities for SwPI
Úbeda-Colomer et al. (2019)	1,219 PI	Spain	QT	Perception of barriers for SwPI
<b>Hearing impairment</b>				
Hendry et al. (2021)	16 HI	United Kingdom	QL	Communication barriers for SwHI
<b>Visual impairment</b>				
Almog (2018)	16 VI	Israel	QL	SwVI negotiating HE experience
Bualar (2018)	12 VI	Thailand	QL	Inclusion of SwVI
Cassells and Weber (2018)	5 VI	South Africa	QL	Accessible materials for SwVI
Frank et al. (2020)	4 VI	United Kingdom	QL	Barriers and facilitators for SwVI
Hewett et al. (2017)	32 VI	United Kingdom	QL	Provision for SwVI
Hewett et al. (2020)	32 VI	United Kingdom	QL	SwVI negotiating HE experience
Hewett et al. (2021)	40 VI	United Kingdom	QL	Inequality faced by SwVI in HE
Lessy et al. (2021)	8 VI	Indonesia	QL	SwVI transition to employment
Manyumwa (2018)	6 VI	Zimbabwe	QL	Positive and negative experiences of SwVI
Mask and DePountis (2018)	2 VI	United States	QL	Transition support for SwVI
Pacheco et al. (2018)	19 VI	New Zealand	QL	Digital technology for SwVI
Pacheco et al. (2021)	19 VI	New Zealand	QL	Transition to HE of SwVI
<b>Attention deficit hyperactivity disorder</b>				
Hsiao et al. (2018)	1 ADHD	United States	QL	Experience of SwADHD
Jansen et al. (2017b)	86 ADHD	Belgium	QT	ACs for SwADHD
Taneja-Johansson (2021)	5 ADHD	Sweden	QL	Barriers and facilitators for SwD
<b>Autism spectrum condition</b>				
Accardo et al. (2019a)	23 ASC	United States	M	ACs for SwASC
Accardo et al. (2019b)	48 ASC	United States	M	Inclusion of SwASC
Bell et al. (2017)	6 ASC	Ireland	QL	Transition experience of SwASC
Jansen et al. (2017a)	43 ASC	Belgium	QT	ACs for SwASC
Kim et al. (2021)	27 ASC	United States	QL	Support from DSS for SwASC
Kim et al. (2021)	27 ASC	United States	QL	Transition experience for SwASC
Lambe et al. (2019)	25 ASC	United Kingdom	QL	Transition experience of SwASC
Lei et al. (2020)	21 ASC	United Kingdom	QT	Transition experience for SwASC
Lucas et al. (2022)	34 ASC	United Kingdom	QT	Transition experience for SwASC
Pesonen et al. (2021)	30 ASC	EU	QL	Transition to employment for SwASC
Sarrett (2018)	97 ASC	United States	M	ACs for SwASC
Van Hees et al. (2018)	34 ASC	Belgium	QL	Transition for SwASC
Vincent (2019)	21 ASC	United Kingdom	QL	Transition after HE for SwASC

(Continued)

TABLE 2 (Continued)

First author and date	No. and disability of participants	Country of study	Method (QT/QL/M)	Research topic
<b>Learning disability</b>				
Abed and Shackelford (2020)	22 LD	Saudi Arabia	QL	Support requested by SwLD
Dreyer (2021)	14 LD	South Africa	QT	Lack of support for SwLD
Fox and McNally (2018)	110 LD	United States	QT	Relationship of SwLD with Faculty
Hadley (2017)	1 LD	United States	QT	Pathway of SwLD, dysgraphia & ADHD
Hadley (2018)	10 LD	United States	QL	Transition to employment for SwLD
Lambert and Dryer (2018)	8 LD	Australia	QL	Online experience of SwLD
O'Byrne et al. (2019)	5 LD	Ireland	QL	Transition experience of SwLD
Russak and Hellwing (2019)	8 LD	Israel	QL	Success factors for SwLD
<b>Medical conditions</b>				
Agarwal and Kumar (2017)	1 MC (lupus)	United States	QL	Experience of SwLupus
Bê (2019)	2 MC(ME/CFS)	United Kingdom, Portugal	QL	Barriers for SwMC
<b>Mental health conditions</b>				
Corrigan et al. (2020)	20 MHC	United States	QL	Use of ACs by SwMHCs.
Kain et al. (2019)	14 MHC	United States	QL	Barriers & support for SwMHC
Lucas et al. (2018)	35 MHC	United Kingdom	QT	Transition to employment for SwMHC
Meluch and Starcher (2020)	228 MHC	United States	QT	Challenge of disclosure of MHC
Murphy (2017)	14 MHC	Ireland	M	Needs of SwMHC
O'Shea and Kaplan (2018)	5 MHC	United States	QL	Identity of SwMHC
Stegenga et al. (2021)	10 MHC	United States	QL	Access to support for SwMHC
Vergunst and Swartz (2021)	15 MHC	South Africa	QL	Challenge of Disclosure of MHC
Woodhead et al. (2021)	72 MHC	United States	M	Disability disclosure
<b>Various disabilities</b>				
Abes and Wallace (2018)	13 PI/MC	United States	QL	SwPI in an ableist environment
Aquino (2021)	8 various	United States	QL	Stigma prevents disclosure
Bartz (2020)	45 various	Germany	M	Barriers for SwD in HE
Biggeri et al. (2020)	50 various	Italy	QL	Needs of SwD for participation
Bogart et al. (2019)	215 various	United States	QT	Attitudes towards dHillierisability
Bruce and Aylward (2021)	30 various	Canada	QL	Negotiating accommodations in ableist environment
Clouder et al. (2019)	74 various	North Africa	QL	Use of assistive technology
Dangoisse et al. (2020)	5 various	Belgium	QL	Transition to HE experience
Devar et al. (2020)	12 various	South Africa	QL	Pressure to be 'normal'
Duma and Shawa (2019)	17 various	South Africa	QL	Parental support for SwD
Ehlinger and Ropers (2020)	13 various	United States	QL	Classroom experiences of SwD
Encuentra and Gregori (2021)	421 various	Spain	QT	Online accessibility
Fleming et al. (2017)	325 various	United States	QT	Social inclusion of SwD
Flink and Leonard (2019)	10 various	United States	QL	Need for information & staff support
Fossey et al. (2017)	25 various	Australia	QL	Use of assistive technology

(Continued)

TABLE 2 (Continued)

First author and date	No. and disability of participants	Country of study	Method (QT/QL/M)	Research topic
Fox et al. (2022)	392 various	United States	QT	Need for flexible accommodations
Francis et al. (2019)	8 various	United States	QL	Empowering SwD in HE
Francis and Chiu (2020)	1 VI, 1 PI	Taiwan	QL	Barriers and success factors for SwD
Freedman et al. (2020)	15 various	United States	QL	Ableist barriers to accommodations
García-González et al. (2021)	16 various	Spain	QL	Barriers to participation
Gin et al. (2021)	66 various	United States	QL	Online learning experience during Covid
Griful-Freixenet et al. (2017)	10 various	Belgium	QL	UDL to meet needs of SwD
Grimes et al. (2019)	3,995 various	Australia	QT	Reasons for non-disclosure
Grimes et al. (2020)	111 various	Australia	QT	Reasons for non-disclosure
Heiman et al. (2017)	148 LD, ADHD	Canada (31), Israel (117)	QT	Use of ICT as a facilitator
Hillier et al. (2019)	46 various	United States	M	Impact of mentoring
Ijadunola et al. (2019)	52 PI, VI, HI	Nigeria	M	Physical accessibility issues
Jorgensen et al. (2018)	110 MHC, LD	Canada	QT	Different needs for different groups
Kaur et al. (2017)	114 various	Malaysia	QL	ACs in assessment for SwLD
Kent et al. (2018)	125 various	Australia	QT	Disability disclosure
Khalifa et al. (2018)	82 various	Qatar	QT	Need for HE adaptations for SwD
Kourea et al. (2021)	11 various	Cyprus	QL	Experience of SwD during COVID 19
Kreider et al. (2019)	52 LD/ADHD	United States	QL	Self-identity of SwD
Kreider et al. (2021)	52 LD, ADHD	United States	QL	Holistic peer mentoring for SwD
Kunnath and Mathew (2019)	42 various	India	QL	Various challenges faced by SwD
Langorgen and Magnus (2018)	14 various	Norway	QL	Facilitators of participation for SwD
Lett et al. (2020)	108 various	Canada	QT	Impact of ableist attitudes on SwD
Li et al. (2021)	13 PI, HI, VI	China	QL	Adjustment to barriers to participation
Lucas and James (2018)	16 ASC/MHC	United Kingdom	M	Use of mentoring
Malcolm and Roll (2017)	353 various	United States	QT	Impact of AT for SwD
Malcolm and Roll (2019)	105 various	United States	QT	Use of AT by SwD
Mamboleo et al. (2019)	289 various	United States	QT	Factors in disclosure of disability
Mamboleo et al. (2020)	289 various	United States	QT	Factors in use of ACs by SwD
McKinney and Swartz (2022)	22 various	South Africa	QL	Reasons for non-disclosure
McNicholl et al. (2020)	111 various	Ireland	QT	Use of assistive technology
Melero et al. (2018)	Three various	Spain	QL	Barriers & facilitators for SwD
Mngomezulu (2019)	Three various	South Africa	QL	Disclosure of disability
Morgado Camacho (2017)	44 various	Spain	QL	SwD describe the ideal university
Moriña (2017)	44 various	Spain	QL	SwD's resilience despite barriers
Moriña et al. (2017)	44 various	Spain	QL	The ideal inclusive university

(Continued)

TABLE 2 (Continued)

First author and date	No. and disability of participants	Country of study	Method (QT/QL/M)	Research topic
Moriña et al. (2018)	44 various	Spain	QL	Making HE more inclusive
Moriña and Morgado (2018)	44 various	Spain	QL	Architectural & communication barriers
Moriña and Perera (2020)	44 various	Spain	QL	Systemic inclusive factors for SwD
Moswela and Mukhopadhyay (2018)	7 VI, PI	South Africa	QL	Experience of female SwD
Mutanga (2018)	14 various	South Africa	QL	Experience of SwD
Namlı and Suveren (2019)	82 VI, HI, PI	Turkey	M	Challenges faced by SwD
Ndlovu (2021)	Six various	South Africa	QL	Use of assistive technology
Newman et al. (2019)	75 various	United States	QL	Sense of purpose of SwD
Nieminen and Pesonen (2019)	Three various	Finland	QL	UDL in mathematics
Odame et al. (2021)	7 HI, 20 VI	Ghana	QL	Transition experience for SwHI/VI
Osborne (2019)	105 various	United Kingdom	QT	Classroom experiences of SwD
Padilla-Carmona et al. (2020)	Five various	Spain	QL	Call for flexible response to needs
Pfeifer et al. (2020)	25 ADHD, LD	United States	QL	Self-advocacy dimensions
Pfeifer et al. (2021)	25 ADHD, LD	United States	QL	Factors related to self-advocacy
Perera-Rodríguez and Moriña Díez (2019)	44 various	Spain	QL	Technology to enable SwD
Polo Sánchez and Aparicio Puerta (2021)	50 various	Spain	QT	Perceived attitudes towards SwD
Seale et al. (2021)	17 various	Canada, Germany, Israel, United Kingdom, United States	QL	Making technology accessible
Smith et al. (2021)	155 various	United States	QT	Disability disclosure discomfort
Squires et al. (2018)	45 various	United States	QT	Developing independence
Squires and Countermeine (2018)	541 various	United States	M	Experiences of SwD
Subrayen and Suknunan (2019)	5 PI, VI	South Africa	QL	Support though learning communities
Thompson-Ebanks and Jarman (2018)	Nine various	United States	QL	Disclosure of disability
Ule (2017)	22 various	Slovenia	QL	Identity development of SwD
Vaccaro et al. (2018)	75 various	United States	QL	Sense of purpose of SwD
Vlachou and Papananou (2018)	32 various	Greece	QL	Experience of SwD
Wilkens et al. (2021)	21 various	Germany	QT	Online accessibility
Yusof et al. (2020)	14 PI, VI	Malaysia	QL	Needs of SwPI and SwVI
Zabeli et al. (2021)	Two various	Kosovo	QL	Challenges and opportunities for inclusion

ACs, Accommodations; SwD, Students with disability; SwADHD, Attention deficit hyperactivity disorder; SwASC, Autism spectrum condition; SwHI, Hearing impairment; SwPI, Physical impairment; SwLD, Learning disability (referred to as Specific Learning Difficulties in the United Kingdom); SwMC, Medial condition; SwMHC, Mental health condition; SwVI, Visual impairment; QL, Qualitative; QT, Quantitative; M, Mixed methodology.

described this process as the development of students' sense of purpose. It was found that students with disability had varying perspectives on their future, ranging from having no clear sense of purpose to having a purpose beyond the self (Newman et al., 2019).

Students with psychosocial disabilities 'indicated that experiences in college act as catalysts for identity exploration' (O'Shea and Kaplan, 2018, p. 366). This process is here described through four subthemes for Theme 1, namely, overcoming stigma, developing resilience and

TABLE 3 Overview of the 3 themes and their 13 subthemes.

Themes	Subthemes
Theme 1: An opportunity for exploring self-identity	1.1 Facing stigma 1.2 Disability as a resilience factor 1.3 Self-advocacy skills for transition to HE 1.4 Need to be prepared for employment
Theme 2: Students call for transformation towards accessible physical, social and learning environments	2.1 Call for physical accessibility 2.2 Call for Universal Design for Learning (UDL) 2.3 Call for lecturers to attend to students' needs 2.4 Digital technology as a helpful support 2.5 Students want to be part of HE community 2.6 Need for students to be informed 2.7 Need for Disability Support Service to be more effective
Theme 3: Students find course and examination accommodations very helpful	3.1 Common and varied accommodations for different difficulties 3.2 Call for more individualised support

autonomy, the perception of self-advocacy as a crucial transitional skill, and the need for preparation for transition to employment.

### 3.1.1 Subtheme 1.1: Facing stigma

Many studies reported that students with disability felt different than others. For instance, students with visual impairment reported that, even though they felt respected, 'it is as if we were living in two completely separate worlds' (Biggeri et al., 2020, p.918). An inclusive university environment is needed to foster a healthy identity development (Moriña, 2017). But peers were observed to have low expectations for people with communication impairments (Manyumwa, 2018; Mays and Brevetti, 2020) and other disabilities because they 'confuse disability with low intelligence' (Vlachou and Papananou, 2018, p. 216). Students with disability felt inferior to others and avoided use of accommodations that singled them out in an environment that valued normalcy (Almog, 2018; Squires et al., 2018; Bê, 2019). Many studies highlighted the challenges of stigma stemming from being different in an ableist environment (e.g., Abes and Wallace, 2018; Sarrett, 2018; Grimes et al., 2019, 2020; Lett et al., 2020; Abrams and Abes, 2021; Li et al., 2021). 'Stigma' is a significant issue in 24 studies and is mentioned 783 times across 72 studies. Students with disability may feel undervalued because students without disability tended to adopt the medical model, which pathologises individual differences, while they themselves embraced the social model, which instead attributes difficulties to the ableist social norms (Bogart et al., 2019). Stigma was felt more intensely due to intersectionality, such as students from marginalised groups, and/or having additional disabilities and mental health conditions (Thompson-Ebanks and Jarman, 2018), and/or disadvantaged

socio-economic background (Abes and Wallace, 2018; Vaccaro et al., 2018; Taneja-Johansson, 2021).

However, two studies focused on the resilient positive identity development of students with disability in a 'society that has become more open to difference' (Ule, 2017, p. 1604). They reported that at university 'people were more open-minded and expressed less judgement towards them which allowed them to feel more self-confident and develop a sense of belonging towards the university community' (Dangoisse et al., 2020, p. 520).

On the other hand, as accommodations exposed their being different, students 'needed to balance the perceived benefits of accommodations with their fear of stigmatisation' (Dangoisse et al., 2020, p. 523; Freedman et al., 2020). Because students were 'anxious and preoccupied with imaginations of what stigma their status could bring' (Mngomezulu, 2019, p. 272), some opted not to disclose their disability to their peers and lecturers, forgoing the opportunity for support (Devar et al., 2020; Aquino, 2021; McKinney and Swartz, 2022). Grimes et al. (2019) reported that students either did not disclose their disabilities as they felt they were responsible to find solutions, or revealed it when necessary to lecturers but not through official channels, or sought external support instead (i.e., professionals, family and friends). Similarly, the majority of students in Van Hees et al. (2018) decided to mask their difficulties and act like any other student. In a Far Eastern university, no students with mental health conditions and Learning Disability (termed Specific Learning Difficulties—SpLD—in the United Kingdom) offered to participate in the study due to associated stigma (Yusof et al., 2020). Students with mental health conditions found it more difficult to disclose their condition (Grimes et al., 2020; Smith et al., 2021), especially students with depression (Woodhead et al., 2021). Students who lacked opportunities for private disclosure experienced more discomfort (Smith et al., 2021). Others feared that disclosure would threaten future employment (Grimes et al., 2019; McKinney and Swartz, 2022). The use of the term 'disability' prevented a student from seeking support services (Osborne, 2019).

### 3.1.2 Subtheme 1.2: Disability as a resilience factor

Some students also felt that their disability interfered with their goals and options (Mays and Brevetti, 2020), with some claiming that they were denied the opportunity to enrol in a particular course (Cassells and Weber, 2018; Vlachou and Papananou, 2018; Francis and Chiu, 2020). On the other hand, in other studies students talked about perseverance in a field despite experiencing setbacks (Vaccaro et al., 2018), and how disability strengthened their achievement goals (Francis et al., 2019; Newman et al., 2019). Additionally, some students with physical disabilities felt more resilient: 'I think I've grown into a more determined person because of my impairment since sometimes I had to fight more for my rights than I would have needed to otherwise' (Ule, 2017, p. 1599). Similarly, in Dangoisse et al. (2020), students with physical and sensory disabilities felt better equipped than non-disabled students to handle the new obstacles of university life. Graduates with learning disability underlined 'that their disabilities had forced them to face all kinds of difficulties, and that these situations had strengthened them and led to their development...: it forced them to take chances, to demand more from themselves...' (Russak and Hellwing, 2019, p. 417; O'Byrne et al., 2019).

For some students, disability extended their horizons beyond just deciding about a course or career: ‘It was about doing something meaningful with one’s life. Students often talked about ‘making a difference,’ ‘helping others,’ or ‘paying [support and advocacy] forward’ (Vaccaro et al., 2018, p. 41). ‘After [multiple spinal] surgeries I was like, I wanna be a biomedical engineer and I wanna solve all the world’s problems.’ (p. 43; see also Moriña et al., 2018; Vlachou and Papananou, 2018).

### 3.1.3 Subtheme 1.3: Self-advocacy skills for transition to higher education

Self-advocacy skills were a main focus of eight studies which reported that students saw them as key for successful transition to HE (Fleming et al., 2017; Mask and DePountis, 2018; Squires and Counterline, 2018; Kreider et al., 2019; Accardo et al., 2019b; Pfeifer et al., 2020, 2021; Bruce and Aylward, 2021). Self-advocacy is mentioned 769 times across 47 studies. Students felt the need to recognise their disability and ‘learn to ask for some help and to get over the fear of disturbing others or being stigmatised’ (Dangoisse et al., 2020, p. 520). Students with mental health conditions were found to have lower self-efficacy than those with learning disability (Jorgensen et al., 2018). The latter stated that, ‘Regardless of the source of support, it was very obvious that in order to succeed, the individual must have enough self-awareness and self-confidence to reach out and create the social network’ (Russak and Hellwing, 2019, p. 419). The same was observed regarding the empowerment of students with physical disabilities (Mays and Brevetti, 2020) and ADHD (Pfeifer et al., 2020).

Students on the autism spectrum felt that transition preparation programmes were most beneficial as they provided opportunities to meet other students, practise navigating the college environment, and develop schedules (Accardo et al., 2019b; Lei et al., 2020; Kim et al., 2021). In addition, the transition was an ongoing process (Hewett et al., 2017) that presented more challenges to students with disability and required more effort and need for support (Pacheco et al., 2018, 2021; O’Byrne et al., 2019). For example, students with sensory impairments had to learn about the university’s academic programme and physical environment and deal with the challenges like finding friends (Pacheco et al., 2018; Hendry et al., 2021). Students on the autism spectrum needed help with reducing the heightened anxiety they felt in an unfamiliar situation in addition to academic support (Bell et al., 2017).

### 3.1.4 Subtheme 1.4: Need to be prepared for employment

Students perceived facilitation into the job market as key for overcoming family dependence as well as societal oppressive norms that saw disability as incompatible with ‘employment, independent living, sexuality and parenthood’ (Vlachou and Papananou, 2018, p. 552). University was seen as a first step towards developing their autonomy, which would be achieved through finding their preferred job and achieving personal independence (Clouder et al., 2019). They believed that their time in university helped them acquire a variety of life skills, such as taking initiative and communication (Hadley, 2018; O’Byrne et al., 2019; Vincent, 2019). On the other hand, some reported lack of preparation for employment (Büscher-Touwen et al., 2018; Lucas et al., 2018; Hewett et al., 2021; Lessy et al., 2021; Lucas et al., 2022). While organisation factors (career counselling and placements)

were found to facilitate the transition to work, persons with autism found self-direction still difficult and therefore greatly appreciated the individualised support that was received through caring lecturers and mentors (Ule, 2017; Pesonen et al., 2021).

## 3.2 Theme 2: Students call for transformation of university systems towards accessible physical, social, and learning environments

As was previously mentioned, students with disability want to participate in all facets of university life (Murphy, 2017). The word ‘access\*’, which appeared 2,879 times over 125 studies, was the term most frequently used to describe this inclusive approach. Access was not seen in terms of gaining entry into higher education or physical accessibility, but was perceived in terms of participating equitably in all spheres of higher education, including in the community life and social activities and use of facilities of the institution as well as in teaching and learning. Simply providing individual students with individual accommodations does not satisfy their need to belong: ‘Rather than being seen only as someone who needs care and accommodations, Taylor wished people saw him as a valuable person’ (Abes and Wallace, 2018, p. 552; Mutanga, 2018). Fleming et al. (2017) found that students who felt like they belong also had the highest levels of satisfaction with their university experience.

The students’ call for inclusion in all university activity that were reported in the reviewed studies are described in seven subthemes of Theme 2 below (see Table 3): (2.1) physical accessibility to buildings and facilities; (2.2) the implementation of Universal Design for Learning (UDL); (2.3) the use of digital technology; (2.4) better understanding of students with disability by lecturers and peers; (2.5) opportunities for involvement in university social life; (2.6) more available information on university policies, facilities, accommodations and support; and (2.7) better understanding by the disability services officers themselves.

### 3.2.1 Subtheme 2.1: Call for physical accessibility

Physical disability/impairment was particularly addressed in eight studies (Ule, 2017; Moriña et al., 2018; Moriña and Morgado, 2018; Moswela and Mukhopadhyay, 2018; Ijadunola et al., 2019; Úbeda-Colomer et al., 2019; Al Masa’deh, 2020; Minotti et al., 2021). However, these conditions appear in 23 different articles. Four physical accessibility issues were raised: getting to university, navigating the campus, accessing buildings and classrooms (Mays and Brevetti, 2020), and accessing communication (Moriña and Morgado, 2018; García-González et al., 2021). Accessibility of spaces is measured not merely in terms of being ‘architecturally accessible’ but in terms of usability: ‘one that is large enough and equipped with the technology necessary for studying is vital for ensuring that students with disability can participate in university life’ (Biggeri et al., 2020, p. 920).

Accessible roads and transportation are key for mobility and independence (Kunnath and Mathew, 2019; Francis and Chiu, 2020; García-González et al., 2021), including disabled-friendly buses (Moriña and Morgado, 2018; Mays and Brevetti, 2020), and pot=hole free and non-muddy streets (Úbeda-Colomer et al., 2019; Braun and Naami, 2021). Students objected to being required to use non-regular access or physical support: ‘I do not feel good about it [using the

entrance for cars] because I am a human being and I should use the entrance for people and not the one for cars' (Braun and Naami, 2021, p. 105).

The locations and timing between lectures were a problem for students with visual and physical impairments, leading to late arrival for sessions (Bualar, 2018; Yusof et al., 2020) and tiredness (Mays and Brevetti, 2020). Students listed inaccessible dorms and generally badly designed buildings (Duma, 2019; Francis and Chiu, 2020; García-González et al., 2021), lack of ramps, elevators and automated doors (Braun and Naami, 2021), and inaccessible library areas, and lecturers' offices (Moriña and Morgado, 2018; Mutanga, 2018). According to a Greek study, 'most of the participants talked about unsuitable elevators, stairs and lighting, absence of ramps and of wheelchair accessible toilets as well as classrooms with poor acoustics' (Vlachou and Papananou, 2018, p. 213; see also Yusof et al., 2020). The availability of facilities is frequently not sufficient: 'there are issues like parking designated for the disabled being utilised by others, broken toilets, maintenance problems...' (Yusof et al., 2020, p. 1154); and delayed responses to requests for alternative accessible venues (Mutanga).

There were also issues with how classrooms were set-up: desks and seating secured with screws created problems (Moriña and Perera, 2020), including for participation in activities that required students to switch seats (Osborne, 2019). Blind students had difficulty using their braille slate on small tables (Bualar, 2018; Melero et al., 2018).

The need to move around for information was coupled with a lack of availability or inadequacy of alternate electronic communication (García-González et al., 2021), such as paper copies of forms or complicated and inaccessible websites for applications that blind students could not complete without sighted assistance (Hewett et al., 2017).

These physical access barriers were reported to have a significant negative impact on students' participation and 'academic freedom', such as having to change programmes for better accessibility or missing tutorials (Braun and Naami, 2021). Such barriers resulted in 'feelings of exclusion, fear, sadness, pain, shame, isolation, humiliation, agony, discomfort, dejection,... feeling exhausted, tired, beaten, and dispirited... [and] infantilised when they had to rely on others to help them move around campus' (p. 105).

### 3.2.2 Subtheme 2.2: Call for universal design for learning

Universal Design (UD) can be applied to any environment or product in HE (Burgstahler, 2015). But it has been more widely used as an appeal for systemic access to learning termed Universal Design for Instruction (Scott et al., 2003), or Universal Design for Learning (UDL) which universities are offering as part of the resources for faculty and staff (University of Rochester, n.d.). UDL was a main focus of five studies (Griful-Freixenet et al., 2017; Nieminen and Pesonen, 2019; Yusof et al., 2020; Ndlovu, 2021; Wilkens et al., 2021) and was mentioned in 51 studies. This call has greater importance because it addresses the needs of both students with recognised disabilities as well as those of many others with unrecognised needs (Jansen et al., 2017b). Moreover, it helps students with disability not to feel 'singled out' or segregated for accommodations (Hewett et al., 2020). UDL suggests that lecturers can encourage diverse students to participate by using multiple means of (i) representation of what needs to be learned, (ii) action and expression (how it will be demonstrated and

acquired), and (iii) engagement (motivation for learning; CAST, n.d.). Two studies (Griful-Freixenet et al., 2017; Nieminen and Pesonen, 2019) examined whether student needs were addressed through UDL. The use of multimedia, text in alternate formats, structured material, and coherent delivery ['When instructors structure things clearly then you have a skeleton to hang everything you hear on ...' (Griful-Freixenet et al., 2017, p. 1636)], and the inclusion of fieldwork or real objects were among the UDL representational components that students cited. The use of an online platform, the provision of notes or guidance and templates, outlining clear expectations, using small group exercises and discussions, multiple forms of assessment, including self-assessment practises, as well as the use of various tools, such as a word processor (Griful-Freixenet et al., 2017), and a detailed rubric, were all examples of UDL elements of action and expression (Nieminen and Pesonen, 2019). Accessibility issues of online learning were also of concern to both students with disability and those without (Heiman et al., 2017; Gin et al., 2021; Wilkens et al., 2021).

However, because students had a variety of needs, different accommodations were required. For instance, various learning preferences—such as the combination of sensory inputs, repetition of content, and the level of autonomy and guidance provided by the instructor—were perceived as advantageous by some and as obstacles by others (Griful-Freixenet et al., 2017). While some participants favoured online resources, others preferred printed materials; some learned through lectures, but 'for some people, sitting through a lecture is a waste of time' (Nieminen and Pesonen, 2019, p. 16). Students also varied in their preferred evaluation method.

Moreover, given that most universities adopted a 'one-size-fits-all' approach to curriculum design, most participants emphasised the significance of formal accommodations for succeeding in their courses (e.g., Griful-Freixenet et al., 2017). Additionally, some needs went beyond UDL and required individual arrangements such as a blind person's need for assistance with graphs (Griful-Freixenet et al., 2017; Biggeri et al., 2020). One study found that the best way to achieve effective individualised accommodations was through negotiation over time between the student and the lecturer (Hewett et al., 2020). Indeed, one study reported that students with disability felt that their lecturers needed to be able to address their individual learning needs (Fox and McNally, 2018).

### 3.2.3 Subtheme 2.3: Call for lecturers to attend to students' needs

Students valued being part of the university community. The attitudes and actions of lecturers thus hampered or encouraged student engagement (Vlachou and Papananou, 2018). Many studies (e.g., O'Byrne et al., 2019; Abrams and Abes, 2021; García-González et al., 2021) revealed significant student anxiety over instructors' lack of understanding. One-fifth of students in Osborne (2019) 'specifically mentioned that they wished their academic teaching staff would understand that they are not lazy, and that they are not faking their condition in order to gain marks' (p. 239; see also Moriña et al., 2018). Students with invisible disabilities had to struggle to be recognised as needing additional help because of the disbelief of academic staff (Bé, 2019; Kain et al., 2019; Osborne, 2019).

Some lecturers thought the student lacked the necessary aptitude and asked them to change their course of study, while others opposed statements of need because they thought learning disability did not exist, or thought that people with disabilities could not succeed in

college (Squires and Counterline, 2018), and refused to make the suggested accommodations (Hewett et al., 2017; Langørgen and Magnus, 2018; Sarrett, 2018; Abed and Shackelford, 2020; Bartz, 2020; Moriña and Perera, 2020). When refusing to give a copy of the lecture presentation ahead of time, a lecturer told the student: 'Well, buy yourself better glasses' (Melero et al., 2018, p.1134). These attitudes may lead to students not asserting their needs (Freedman et al., 2020; Pfeifer et al., 2021). Indeed one student was told by the head of department: 'You are like everybody else, a student like every other student, so try to be like everyone else' (Almog, 2018, p.225; Padilla-Carmona et al., 2020). One student had to formally lodge a complaint with student services about a lecturer who kept denying requests to record lectures (Mamboleo et al., 2020). Moreover, both overt discrimination and more subtle ableist microaggressions were found to be related to higher levels of anxiety and depression, as well as to a lower academic self-concept (Lett et al., 2020). Such attitudes thus deny the recognition, enjoyment or exercise, on an equal basis with others, of disabled students' right to a tertiary education (UN General Assembly, 2006).

The studies highlighted how students felt they had a harder time managing university responsibilities, particularly due to side effects of medication or associated mental health issues, and that this was not acknowledged by lecturers (Sarrett, 2018; Squires and Counterline, 2018; Osborne, 2019). All of this had an impact on students' motivation, sense of belonging in the classroom, and confidence in their own capacity for success (Ehlinger and Ropers, 2020). Students complained that the university administration did not have appropriate regulations and procedures to ensure their needs were met, or, when these were in place, they were not followed by staff (Mutanga, 2018; Stegenga et al., 2021).

Not all academics were aware of students' individual needs, even when pertinent policies existed (Squires and Counterline, 2018; Moriña and Perera, 2020; García-González et al., 2021). Students claimed that the university lacked a process for communicating their needs to the appropriate lecturers (Moriña et al., 2017; Squires and Counterline, 2018). Students highlighted the need for initial meetings with lecturers early in the semester (Mamboleo et al., 2020). However, García-González et al. claimed that lecturers were unable to meet with the students.

On the other hand, others spoke of how their learning and participation were facilitated by lecturers who were open-minded, attentive, and truly concerned about their needs (Langørgen and Magnus, 2018; Melero et al., 2018; Vlachou and Papananou, 2018; Bê, 2019; Francis et al., 2019; Kain et al., 2019; Biggeri et al., 2020; Ehlinger and Ropers, 2020; Frank et al., 2020; Mamboleo et al., 2020). A visually impaired student described how a lecturer 'figured out a way to stream what he was putting on the screen to my laptop so I could see it up close and be able to read the documents' (Mamboleo et al., 2020, p. 47); other lecturers expressed openness and concern for students' well-being and learning, reaching out, sharing resources, and encouraging students' ongoing engagement in the course after noticing the students' lack of engagement. Students also spoke in favour of participatory and active classes (Morgado Camacho et al., 2017). They felt most fulfilled when they could contribute to everyone's learning: 'I really feel proud and happy when my group is helped by me'; 'to know that our opinions are important to lecturers for assessment makes me feel so good about learning' (Kaur et al., 2017, p. 765).

Students in 45 of the studies requested staff training on disability issues because of the aforementioned challenges (e.g., Morgado Camacho et al., 2017; Ule, 2017; Khalifa et al., 2018; Melero et al., 2018; Squires and Counterline, 2018; Flink and Leonard, 2019; Osborne, 2019; Perera-Rodríguez and Moriña Díez, 2019; Accardo et al., 2019a; Abed and Shackelford, 2020; Meluch and Starcher, 2020; Moriña and Perera, 2020; García-González et al., 2021; Polo Sánchez and Aparicio Puerta, 2021; Zabeli et al., 2021). Such training could cover topics relating to disabilities generally as well as to particular conditions (Moriña et al., 2017; Sarrett, 2018). There was also a call for lecturers to receive training in technological applications, such as how to assist blind students (Perera-Rodríguez and Moriña Díez, 2019). A hearing-impaired student argued how it is impossible to lip read when lecturers are looking at the blackboard, keep talking while walking, when they are sitting down behind a computer, or when they switch off the lights to read the slides (Melero et al., 2018).

### 3.2.4 Subtheme 2.4: Digital technology experienced as a helpful support

Although students greatly valued the chance to interact with lecturers and peers in classrooms and campuses, they also reported that the addition of online communication and learning opportunities could make their attendance at lectures and learning more easily accessible. Such explicit comparisons occurred in seven studies that captured the COVID-19 experience (one published in 2020 and six in 2021; e.g., Kourea et al., 2021). However, 35 made reference to 'assistive technology', 44 used the term 'digital', 13 referred to online courses, and 70 studies included 'email', and 31 studies mentioned 'electronic' contact and materials.

At least two studies reported that students with disability saw the abrupt and poorly planned shift to online learning during the COVID-19 as stressful and unsuccessful (Kourea et al., 2021) leading to loss of accommodations (Gin et al., 2021). Difficulties were reported when the recording was of poor quality, when students with disability were unable to participate in discussions and ask questions, and when the screen was cluttered (Kent et al., 2018). One study, however, found that students with disability coped with it better than other students as they benefited from the use of blended teaching, digital technology, and electronic communication (Wilkins et al., 2021). Pacheco et al. (2021) reported that students felt a sense of mastery and satisfaction when they managed to complete a research essay independently using digital technologies. These technologies aided in planning and organisation, especially time management, and made it easier to access course materials (Ndlovu, 2021; Seale et al., 2021). Moreover, when students' assistive technology (AT) needs were met, even their social engagement during lectures and beyond was significantly enhanced (McNicholl et al., 2020).

To manage transition, a variety of technologies were used, including wireless internet connections, mobile phones to save information being discussed in meetings, electronic magnifiers (Pacheco et al., 2018), digital voice recorders and cameras (Pacheco et al., 2021), the campus map in pdf format or Google Maps to navigate through the university environment, and devices to access bus timetables (Pacheco et al., 2018). Additionally, students used the internet to search for information about the university (Dangoisse et al., 2020). They also used internet communication with university employees, and emails to request course information and disability support, as well as for academic materials (Pacheco et al., 2018; Dangoisse et al., 2020). Technology helped to

overcome constraints like time and place to establish and sustain social relationships, in one instance by the setting up by a lecturer of closed online social groups (Pacheco et al., 2018).

### 3.2.5 Subtheme 2.5: Students want to be part of higher education community

Students with a disability were concerned also about barriers to participating in university life (Ehlinger and Ropers, 2020; Lei et al., 2020; Hendry et al., 2021). Students' formal and informal interaction with peers and lecturers had important influences on their sense of belonging, self-identity and self-worth (O'Shea and Kaplan, 2018). When students had the chance to interact with others, often through extracurricular activities, they performed better academically (Fleming et al., 2017; Mays and Brevetti, 2020). They saw that having a strong social network—family, friends, classmates, teachers, coaches, mentors, and support service providers—was essential for success (Mutanga, 2018; Russak and Hellwing, 2019). Students on the autism spectrum (Sarrett, 2018) noted that the university lacked accommodations that addressed social needs including access to mentors or a support group for people with disabilities.

Students valued lecturers who fostered a sense of community: 'working together as a team helped them form a bond between each other... the collegial work environment fostered mutual understanding and respect between the students' (Kaur et al., 2017, p. 764). 'When the classroom climate is not so structured and when people are able to be more open and vulnerable in that space so that we can learn and bounce ideas off of each other, that's when my anxiety becomes a lot more manageable' (Ehlinger and Ropers, 2020, p. 341). Mentoring was also seen to have a significant impact on engagement (Mays and Brevetti, 2020).

Different accommodations were needed for various disabilities. Socialising was particularly difficult for students with hearing impairment, who struggled to develop alternate forms of communication (Hendry et al., 2021). One student advised that other students study sign language. A blind student heard about forthcoming events but was unable to read any flyers or posters about them (Mask and DePountis, 2018; Mays and Brevetti, 2020). One study reported that students did not participate in activities on campus as they were discouraged by others, due to lack of physical accessibility, and due to feeling overwhelmed (Fox et al., 2022); one student felt self-conscious about her clubfoot (Mays and Brevetti, 2020). Having a chronic illness, such as lupus, can also make it difficult for students to participate in extracurricular activities (Agarwal and Kumar, 2017).

Studies reported two perspectives for encouraging student engagement in the social life of the university: enabling students with disability to join the general student population or creating safe spaces and self-help groups for people with specific conditions. Students with physical disabilities in Minotti et al. (2021) held both points of view: while some saw the need for a supportive disability community, many did not feel like they belonged to the larger disability community. Similarly, some students with autism felt separate spaces can feel safe and inclusive, but at the same time interacting with the wider university community promoted independence (Mays and Brevetti, 2020). Students with mental health conditions felt the need to discuss their struggles with people who had gone through a similar situation, but they also believed that by doing so, they were rendered invisible to the campus community and missing the opportunity to renegotiate their identity (O'Shea and Kaplan, 2018). An argument for self-advocacy groups was made regarding students with

Lupus (Agarwal and Kumar, 2017) as well as for student teachers with visual or physical disability (Subrayen and Suknunan, 2019). Some students claimed that they combined the two perspectives by becoming activists for inclusion (Mays and Brevetti, 2020).

### 3.2.6 Subtheme 2.6: Need for students to be informed

Another systemic need identified by studies was for them to be given more information on two levels: first, about university architecture, practises, and organisational aspects generally, and whether or not these were accessible (e.g., Al Masa'deh, 2020); and second, about the accommodations that were available and how to access them (e.g., Langørgen and Magnus, 2018; Melero et al., 2018; Bê, 2019; Flink and Leonard, 2019; Francis et al., 2019; Ijadunola et al., 2019). The first academic year was particularly difficult for students as they were unaware of accommodations, and they felt lost and dependent on the staff's goodwill (Moriña and Perera, 2020; Pfeifer et al., 2020; Dreyer, 2021). Lack of knowledge of accommodations available was also reported for online courses (Encuentra and Gregori, 2021).

Students in Van Hees et al. (2018) stressed the importance of having a point of contact who can orient them to their new environments, inform them about activities, advise them on socially appropriate behaviour, and be someone they can turn to for help. This point of contact could introduce them to faculty members and other personnel (Murphy, 2017).

### 3.2.7 Subtheme 2.7: Need for disability support service to be more effective

Studies described how students valued the support of the DSS but also pointed out its inadequacies, particularly as a 'bureaucratic jungle' (Langørgen and Magnus, 2018; Moriña and Perera, 2020; Kim and Crowley, 2021). These experiences differed at various universities as well. Some students believed that the DSS itself either lacked a proper understanding of the students' needs (visual impairment; Hewett et al., 2017), or the authority and resources necessary to efficiently organise support plans (Vlachou and Papananou, 2018). Some reported the lack of guidelines for accessing support and that the procedures requiring a formal diagnosis and its processing as too onerous, so that students spent months waiting to be tested and to receive approval, and to get finally get the necessary accommodation (Abed and Shackelford, 2020).

In one study students reported that the DSS counsellor was not advocating sufficiently for students (Mamboleo et al., 2020). However, other students believed that the DSS was trying its best to assist students who encountered difficulties and was especially helpful in providing laptops with voice software (Vlachou and Papananou, 2018), or in organising Individual Support Plans (Francis and Chiu, 2020).

Parents were at times involved with the DSS. While parental support was reported as a success factor for students with disability (Moriña and Biagiotti, 2021), students had various opinions regarding parent involvement. The right to self-determination, autonomy, and expression was clamoured for by some. Others also opposed uninvited parental participation in activities (e.g., Van Hees et al., 2018; Duma and Shawa, 2019). On the other hand, some students requested parental support while making curriculum decisions or speaking with staff to learn more about access arrangements, among other things.

Additionally, students felt that their parents supported them emotionally throughout challenging and transitional moments (Van Hees et al., 2018; Francis et al., 2019). Visually impaired students also valued the guidance given by family members regarding choice of institution (Pacheco et al., 2021).

### 3.3 Theme 3: Students find course and examination accommodations very helpful

As was said above, because of stigma, students with disability were frequently hesitant to request accommodations. They highlighted the importance of not using deficit language in official forms and asked for more specific categories that they did not associate with disability (Grimes et al., 2019). Moreover, students themselves might face the dilemma of needing to develop autonomy, also in preparation for employment, while having a pressing need for support to overcome difficulties in completing assignments (Hadley, 2017). Thus, some did not request accommodations to assert their independence: 'I want to go through college and succeed without Disability Services' (Squires et al., 2018). However, most students said that they sorely needed individual course and test access arrangements to create a fair playing field for them (Sarrett, 2018). 'Accommod\*' was mentioned 3,087 times in 113 of the studies. Students called for more effective processing of such accommodations. Accommodations boost students' self-confidence and give students with disability equal opportunities to succeed while learning alongside their peers (Abed and Shackelford, 2020).

Students also mentioned a number of difficulties that made it harder to implement accommodations. These included the instructor's lack of understanding, their judgmental attitudes, improper implementation of accommodations, and the DSS counsellor not advocating sufficiently for students (Abed and Shackelford, 2020; Freedman et al., 2020; Mamboleo et al., 2020). Delays in getting the accommodations or equipment required were reported in several studies (e.g., Fossey et al., 2017; Langørgen and Magnus, 2018; Stegenga et al., 2021). Some students received assistance when they terminated their studies (Moriña and Perera, 2020). Students were worried about lagging behind without support (Lambe et al., 2019). Financial difficulties were another issue raised by students with learning disability when trying to have a professional psychological evaluation (Lambert and Dryer, 2018; Grimes et al., 2019). Others chose not to request any accommodations since the office was 'slow and disorganised' (Squires and Counterline, 2018).

While many studies reported how students were wary not to be seen as having an advantage through accommodations, one article queried this possibility in private universities that serve students from higher socioeconomic groups: students were found to request accommodations even if they did not have an evidence-based diagnosis of a learning disability (Weis et al., 2017). The authors also point out that most of the top-ranked private liberal arts colleges in the United States have double to triple the national average percentage of students receiving accommodations for disabilities.

Thus, Weis et al. (2017) call for evidence-based documentation of needs, which was indeed what studies showed was usually required. While some students reported starting to understand themselves better and felt validated after receiving a diagnosis (Francis et al., 2019), there are also questions about the requirements for

self-disclosure, bureaucracy, and expenses involved in such a 'medical' approach (Griful-Freixenet et al., 2017).

#### 3.3.1 Subtheme 3.1: Common and varied accommodations for different difficulties

Students with a variety of conditions and in various institutions used typically similar accommodations for both coursework and assessment (note that we have not included here accommodations for community engagement, but such individualised support for engagement is evident in the search for mentoring as explained below). Moreover, while studies frequently listed accommodations by type of disability, Table 4 presents a collection of accommodations categorised by need, namely, physical difficulties, medical needs, sensory processing difficulties, hearing impairment, visual impairment, executive functioning difficulties, self-regulation and social difficulties. This categorisation is more appropriate because students highlighted the need for individualised accommodations based on need rather than category of condition (Hsiao et al., 2018; Accardo et al., 2019a).

There were some difficulties and accommodations that were common to all categories, such as the processing of tasks being more time-consuming and laborious for various reasons, necessitating extra time during assessments or extended deadlines for assignments, and being facilitated by the use of digital technology (see Table 4). For extensions, various words were used, including 'extra time' in 44 studies (e.g., Accardo et al., 2019a), 'extended time' in 27 studies (e.g., Mamboleo et al., 2020), and a few referred to 'extended examination duration' or 'extended test time' (e.g., Jansen et al., 2017b).

#### 3.3.2 Subtheme 3.2: Call for more individualised support

Students expressed varying degrees of satisfaction with the accommodations given. Sarrett (2018) found that 68% of the 42 students expressed satisfaction with the accommodations received and talked highly of their interactions with the DSS. The remainder said their sensory, social, academic, or mental needs were not being met (see also Bualar, 2018). Other students requested greater personalised attention, alternative assessments, flexible attendance policies (O'Byrne et al., 2019), individualised negotiation of support and a rise in the number of ACs awarded under stressful situations (Accardo et al., 2019a; Stegenga et al., 2021). Some students said they requested specific ACs that were not provided or offered (Sarrett, 2018; O'Byrne et al., 2019). Some students with ADHD chose not to use ACs because they believed they were ineffective (Jansen et al., 2017b). As previously mentioned, students attempted to strike a balance between the benefits ACs provide and the challenge of disclosing a disability, which was also influenced by prior success in requesting accommodations (Mamboleo et al., 2019).

One accommodation that was highly valued by students, and can be classified under individual personal and social integration support, was having the support of a mentor. This was mentioned in 33 of the studies. Mentor support was particularly helpful during transitions (Hillier et al., 2019) and first year of university (Sarrett, 2018). Mentors acquainted them with the university environments, informing them about the services, developing their time-management, study, and group-work abilities, and teaching students how best to interact with professors and other problem solving skills (Lucas and James, 2018; Sarrett, 2018; Hillier et al., 2019; Kreider et al., 2021). Additionally, Lucas and James found that mentors served as advocates, resolving any issues with communication between the mentee and university personnel, while

TABLE 4 Individual course and assessment accommodations (ACs) by category of difficulty.

References	Category of difficulty	Course ACs	Assessment ACs
	Physical difficulties		
Agarwal and Kumar (2017); Biggeri et al. (2020); Braun and Naami (2021); García-González et al. (2021); Ijadunola et al. (2019); Jansen et al. (2017a); Kourea et al. (2021); Malcolm and Roll (2017); Malcolm and Roll (2019); Moriña and Morgado (2018); Namli and Suveren (2019); Osborne (2019); Squires and Countermeine (2018)	<ul style="list-style-type: none"> <li>• Mobility</li> <li>• Fine motor coordination</li> <li>• Difficulty using standard learning equipment</li> </ul>	<ul style="list-style-type: none"> <li>- Use of word processor</li> <li>- Note taker Use of AT</li> <li>- Digital textbooks</li> <li>- Choice of accessible venue</li> <li>- Lecture recording</li> <li>- Accessible podium, workstation, classroom equipment</li> </ul>	<ul style="list-style-type: none"> <li>- Use of word processor</li> <li>- Oral exams, use of scribe</li> <li>- Extra time</li> </ul>
	Medical difficulties		
Agarwal and Kumar (2017); Bê (2019); García-González et al. (2021); Griful-Freixenet et al. (2017); Mays and Brevetti (2020); Mngomezulu (2019)	<ul style="list-style-type: none"> <li>• Hospital visits/admissions/homebound</li> <li>• Fatigue and pain</li> <li>• Migraines</li> </ul>	<ul style="list-style-type: none"> <li>- Flexible attendance, late drop-in</li> <li>- Part-time enrolment and reduced course load Online course/participation during hospitalisation</li> <li>- Note taker Sitting down during tasks</li> <li>- Frequent rest breaks</li> <li>- Lowered lights, sit away from window</li> </ul>	<ul style="list-style-type: none"> <li>- Extended deadlines</li> <li>- Adaptations in exams</li> <li>- Oral exams, use of scribe</li> <li>- Extra time</li> <li>- Alternative exam conditions</li> <li>- separate room</li> <li>- Supervised rest breaks</li> </ul>
	Hearing impairment		
Biggeri et al. (2020); Hendry et al. (2021); Langørgen and Magnus (2018); Melero et al. (2018); Mngomezulu (2019); Moriña and Morgado (2018); Odame et al. (2021); Vlachou and Papananou (2018)	<ul style="list-style-type: none"> <li>• Missing academic information/discussion in class</li> <li>• Inability to follow conversations in noisy environments</li> <li>• Difficulties participating in social activities</li> <li>• Inability to get in touch with the university when only phone contact available</li> <li>• Difficulty getting job placements</li> </ul>	<ul style="list-style-type: none"> <li>- One-to-one meetings with staff</li> <li>- Tutor</li> <li>- Sign Language Interpreters</li> <li>- Materials in accessible language—videos with subtitles</li> <li>- Low noise, acoustic environment</li> <li>- Sitting in front</li> <li>- Use of digital devices such as speakers, microphones</li> <li>- Small classrooms</li> <li>- Teaching others basic sign language</li> <li>- Alternative communication methods</li> <li>- More funding</li> </ul>	
	Visual impairment		
Biggeri et al. (2020); Bualar (2018); Frank et al. (2020); Griful-Freixenet et al. (2017); Hewett et al. (2017); Hewett et al. (2020); Ijadunola et al. (2019); Lambert and Dryer (2018); Lei et al. (2020); Melero et al. (2018); Mamboleo et al. (2020); Mays and Brevetti (2020); Moriña and Morgado (2018); Moriña and Perera (2020); Mutanga (2018); Namli and Suveren (2019); Odame et al. (2021); Pacheco et al. (2018); Pacheco et al. (2021); Perera-Rodríguez and Moriña Díez (2019); Vlachou and Papananou (2018)	<ul style="list-style-type: none"> <li>• Eyes get tired easily</li> <li>• Difficulty navigating environment</li> <li>• Difficulty with visual information</li> <li>• Difficulties with group work/collaboration with peers</li> </ul>	<ul style="list-style-type: none"> <li>- Schedule of lectures</li> <li>- Mobility support</li> <li>- Fixed furniture/seating in one level</li> <li>- Adding Braille across campus</li> <li>- Bigger monitor/font/print</li> <li>- Tactile alternatives to pictures</li> <li>- Stream presentations</li> <li>- Advance lecture notes/slides/reading lists</li> <li>- Accessible study material</li> <li>- Library support to search for books, use of speech synthesis</li> <li>- Screen reader</li> <li>- Power point material read out</li> <li>- Describe diagrams in lectures/notes</li> <li>- Use more auditory modality</li> <li>- Slow-paced lectures</li> <li>- Note taker</li> <li>- Demonstrations one-to-one</li> <li>- Online fora to collaborate with peers</li> <li>- Closed groups on social media</li> <li>- Transportation for practicum</li> <li>- More funding</li> </ul>	<ul style="list-style-type: none"> <li>- Extra time</li> <li>- AT for access to and response to test papers</li> <li>- Enlarged paper</li> <li>- Reader for exam/oral exam</li> <li>- Separate room</li> <li>- Accessible feedback notes</li> </ul>
	Sensory processing difficulties		

(Continued)

TABLE 4 (Continued)

References	Category of difficulty	Course ACs	Assessment ACs
Corrigan et al. (2020); Jansen et al. (2017a); Mays and Brevetti (2020); Mngomezulu (2019); Sarrett (2018)	<ul style="list-style-type: none"> <li>• Stereotypical/ Repetitive movements</li> <li>• Oversensitivity to sensory stimulation</li> <li>• Different sensory processing issues</li> </ul>	<ul style="list-style-type: none"> <li>- Quiet retreat places</li> <li>- Low sensory stimulation</li> <li>- Use of headphones</li> <li>- Note taker, written instructions</li> <li>- Variety of seating options</li> <li>- Use of word processor</li> </ul>	<ul style="list-style-type: none"> <li>- Exam in smaller groups</li> <li>- Extra time</li> <li>- Distraction free room</li> <li>- Extended deadlines</li> </ul>
	Executive functioning difficulties		
Abed and Shackelford (2020); Accardo et al. (2019a); Corrigan et al. (2020); Griful-Freixenet et al. (2017); Hillier et al. (2019); Hsiao et al. (2018); Jansen et al. (2017a,b); Kaur et al. (2017); Malcolm and Roll (2017, 2019); Mamboleo et al. (2019, 2020); O'Byrne et al. (2019); Sarrett (2018)	<ul style="list-style-type: none"> <li>• Overwhelming information</li> <li>• Difficulty focusing, sustaining or shifting attention</li> <li>• Working memory difficulties</li> <li>• Planning and organising</li> <li>• Difficulty following instructions</li> <li>• Making careless mistakes</li> <li>• Oversensitivity to change</li> <li>• Problems distinguishing gist from detail</li> <li>• Organising and processing information</li> <li>• Slow in getting thoughts on paper</li> <li>• Time management</li> <li>• Difficulty reading material</li> </ul>	<ul style="list-style-type: none"> <li>- More time for tasks</li> <li>- Use of AT</li> <li>- Recording lectures</li> <li>- Schedule lectures for best effort, rest breaks</li> <li>- Exemption (waiver) from course/ curriculum requirements</li> <li>- Advance lecture notes</li> <li>- Planning of excursion in advance</li> <li>- Picture overview of teachers</li> <li>- Note taker</li> <li>- One-on-one classes</li> </ul>	<ul style="list-style-type: none"> <li>- Test items reduced /adapted</li> <li>- Exam questions one at a time</li> <li>- Alternative exam format</li> <li>- Extra time</li> <li>- Flexible assignment deadlines</li> <li>- Exam deferral</li> <li>- Selected seating/small group, separate room</li> <li>- Visual time indication</li> <li>- Reading exam questions aloud</li> <li>- Reader for exams</li> <li>- Use of a word processor</li> <li>- Use of a spellchecker</li> <li>- Test instructions both written and oral</li> <li>- Use of visuals</li> </ul>
	Self-regulation difficulties		
Biggeri et al. (2020); Corrigan et al. (2020); Hsiao et al. (2018); Jansen et al. (2017a,b); Mays and Brevetti (2020); Murphy (2017); Mutanga (2018); Van Hees et al. (2018)	<ul style="list-style-type: none"> <li>• Overwhelmed end of semester exams</li> <li>• Impulsive behaviour</li> <li>• Problems handling stress</li> <li>• Anxiety, depression, distress ...</li> <li>• Chaotic housing situations on campus</li> </ul>	<ul style="list-style-type: none"> <li>- Structure/routines</li> <li>- Contact person</li> <li>- Sessions on academic skills</li> <li>- Approving absences</li> <li>- Lecture recording Note taker Comfort animals Early registration Use of headphones Subtitling Writing</li> <li>- Availability of a single room</li> </ul>	<ul style="list-style-type: none"> <li>- Replace with weekly tests</li> <li>- Exam in smaller groups/ quiet room</li> <li>- Choice of assessment formats</li> <li>- Exam deferral</li> <li>- Extra time</li> <li>- Flexible ACs</li> </ul>
	Social interaction difficulties		
Osborne (2019); Pacheco et al. (2018); Sarrett (2018); Van Hees et al. (2018)	<ul style="list-style-type: none"> <li>• Difficult to be in a group/in large groups</li> <li>• Difficulty following rules/ expectations</li> <li>• Difficulties meeting staff physically</li> <li>• Difficulty with presenting to others</li> <li>• Difficulty with participating in class</li> </ul>	<ul style="list-style-type: none"> <li>- Designated away seating space</li> <li>- Written rule/expectations</li> <li>- Use personal email</li> <li>- Do not single out students to answer questions</li> </ul>	<ul style="list-style-type: none"> <li>- Smaller presentation audiences</li> </ul>

providing mentees with access to trustworthy individual guidance and all-round support in a confidential setting that also served as an opportunity to challenge some mentees to leave their comfort zone, make the shift to independence, and accomplish their social and academic objectives. Some students benefitted from peer tutoring (Accardo et al., 2019b; Biggeri et al., 2020).

## 4 Discussion

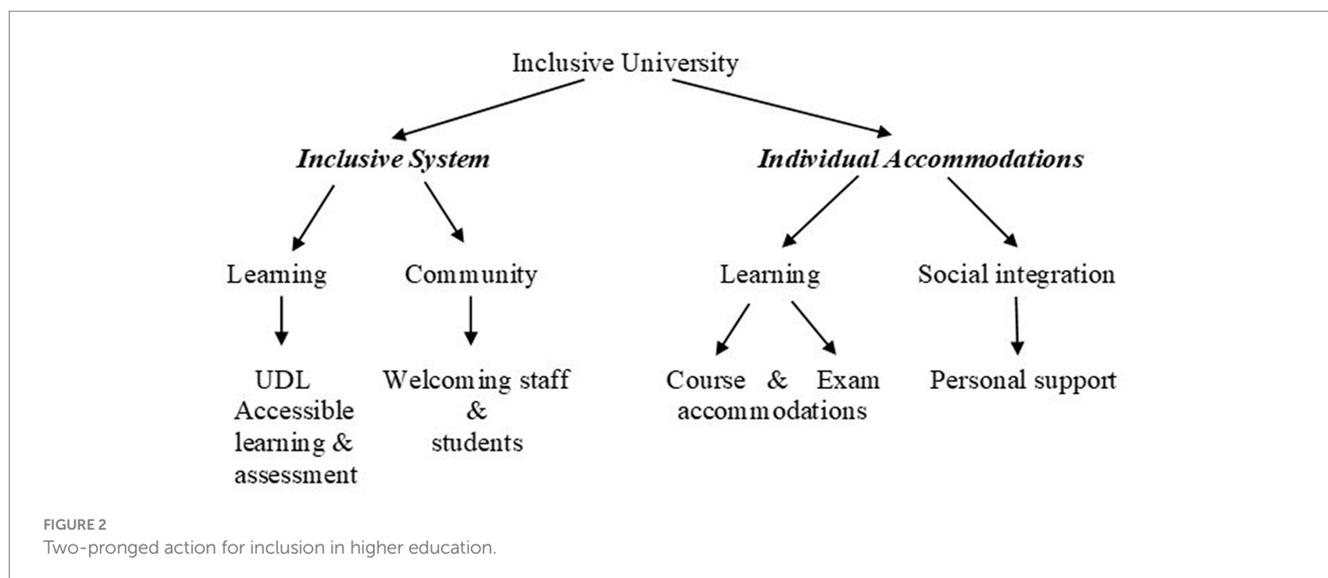
This systematic review was intended to make HE institutions aware of the range of reform and provision they need to consider to make themselves equitably accessible to the diversity of students. It has brought together the voices of students with disability in

HE across the world calling for equitable opportunities for self-development and full participation in the learning and community life on campus and/or virtually. The search terms used only distinguished between disability, medical and mental health conditions, but more than one third of the studies (55/133) focused on only one particular disability or condition, such as physical disability, hearing impairment, autism, and myalgic encephalomyelitis (see Table 2). This allowed for consideration of the diverse access needs of students with particular conditions, as well as of the common aspirations and needs experienced within and across conditions. The studies reviewed show that there is an increasing presence of these students in tertiary education. However, it should be noted that globally their enrolment rates remain ‘generally very low’ [UNESCO and The Right to Education Initiative (RTE), 2022, p. 30], and the continuing challenges outlined in this review may point to one important reason for such inequality. The findings in this review highlighted the challenges these students face when they attempt to access and participate effectively in HE.

We had set out to identify what students aspired to and the challenges they experienced in the HE physical, social and academic context. However, we found that studies highlighted firstly the importance students gave to the development of self-identity, disclosure of their disability, self-advocacy, self-determination and purpose as they transitioned into and through the HE experience (Ule, 2017; Abes and Wallace, 2018; O’Shea and Kaplan, 2018; Sarrett, 2018; Vaccaro et al., 2018; Newman et al., 2019). The systematic review of Moriña and Biagiotti (2021) too had highlighted how students considered these qualities as essential for their success. But they had not considered how students struggled within ableist and stigmatising environments (Lindsay et al., 2018). We found widely reported concerns about stigma leading some students with disability not to disclose, and indeed to mask their disability, and thus suffer inequality and emotional and academic disadvantage (Mngomezulu, 2019; Lett et al., 2020; Yusof et al., 2020). At the same time, studies highlighted how students differed in the way they approached the university challenge. Due to their unique needs, some students felt compelled to give up their

preferred course and were also restricted in their social engagement with the university community (Vlachou and Papananou, 2018; Francis and Chiu, 2020). Other studies, however, found that students learned to persevere and succeed at university as a result of their prior resilient experiences (Ule, 2017; Vaccaro et al., 2018; Newman et al., 2019; O’Byrne et al., 2019; Russak and Hellwing, 2019; Dangoisse et al., 2020). Development of self-advocacy was regarded as a best way to ensure their needs were met (e.g., Accardo et al., 2019b; Pfeifer et al., 2020). Again, some students felt the university did not adequately prepare them for employment (Lucas et al., 2018), while others stated that the university experience provided them with important life skills for their future (Hadley, 2018; O’Byrne et al., 2019; Vincent, 2019). Some were still unsure about their future, whereas others had developed a clear sense of purpose, saying that their disability had led them to look beyond merely making a successful career and aspiring to make a difference in other people’s lives (Vaccaro et al., 2018; Newman et al., 2019).

Secondly, we looked for studies in which students raised concerns about the two prongs for the promotion of inclusive education as mentioned in the introduction (see Figure 2): firstly making the HE system inclusively responsive to diverse needs, while secondly ensuring provision of accommodations for individual student needs. With regard to the first prong, studies reviewed reflected a strong emphasis on what we started to code as ‘overarching accommodations’, or the need for changes in the whole system of physical, social and learning environments to make them accessible to all. Universal design of physical and learning environments was viewed as highly desirable because this enhances the engagement of all students while reducing the segregation that results from accommodations for students with disability only (Dangoisse et al., 2020). The review confirms list of ‘external’ factors of Moriña and Biagiotti (2021) that enabled students with disability to succeed at university, namely disability support services and academic support from staff and peers. Beyond that list, however, students in the studies reviewed also underlined the importance of a ‘whole campus’ approach to making the university welcoming and accessible (see Burgstahler, 2015). This is a significant challenge for universities that requires



the involvement of all staff and administration in in-service training as widely advocated in the studies. Institutions tend to cater for the dominant majority of members and have difficulty understanding the impact of barriers to the inclusion of minorities. For instance, persons with physical and sensory disabilities and students with autism, were concerned about the lack of physical accessibility to both the campus, common facilities, and lecture room buildings, as well as to adequate seating arrangements within the classrooms themselves (Úbeda-Colomer et al., 2019; Braun and Naami, 2021). There was indeed a call for access in terms of “the usability of spaces’ (spaces with adequate furniture and technologies) for moving around and working, rather than mere physical space (Biggeri et al., 2020, p. 916). Accessibility of university communication systems, particularly again for persons with physical and sensory impairments and autism, is also an important issue for their participation (García-González et al., 2021).

The same applied to the need for a Universal Design for Learning (Cast, no date). Students highlighted the helpfulness of accessible multiple means of representation of learning (e.g., use of multimedia, structured material and coherent delivery); multiple means of action and expression (e.g., multiple forms of assessments); and multiple means of engagement (such as use of a variety of classroom and fieldwork processes) as particularly supportive (Griful-Freixenet et al., 2017; Nieminen and Pesonen, 2019). The use of digital technology was seen as potentially adding to UDL (Seale et al., 2021), but still requiring, no less than face-to-face teaching, more commitment to make it truly inclusive (Heiman et al., 2017; Gin et al., 2021; Wilkens et al., 2021). At the same time, it was found that some procedures might be found useful for some students and a hindrance for others, such as the level of autonomy for student learning versus level of guidance by the lecturer (Griful-Freixenet et al., 2017). The requests from students suggest that there is a need for lecturers to monitor student students’ responses to their implementation of UDL curricula and make the relevant adjustments as is recommended in the literature on differentiated instruction (Turner et al., 2017).

Studies also highlighted the importance of belonging to the university community for their full participation (see Figure 2, Prong 1). Indeed, studies found that students’ progress was also influenced by their being enabled to be part of the university social community (Fleming et al., 2017; Mutanga, 2018; Russak and Hellwing, 2019; Lei et al., 2020; Mays and Brevetti, 2020; Hendry et al., 2021). Students expressed great concern about the negative attitudes and lack of understanding by lecturers as a major barrier to their learning (Squires and Counterline, 2018; Moriña and Perera, 2020; García-González et al., 2021). Moriña and Biagiotti (2021) too had reported that students found positive and supportive relations with both staff and peers as a key element in their academic success. Indeed, students called for mentoring arrangements (referred to as ‘coaching’ in Moriña and Biagiotti) as one of the most effective services that provided personal interaction, direction and support on how to approach staff and peers as well as how to tackle the learning challenges (Lucas and James, 2018; Sarrett, 2018; Hillier et al., 2019).

While calling for the transformation of the whole HE system, the students also widely reported that individual accommodations

were necessary and helpful for their equitable participation (see Figure 2, Prong 2). The services of an efficient DSS office were clearly a very important resource to ensure students’ access needs were met (Moriña and Perera, 2020). This may be partially due to the fact that universities are run through one-size-fits-all systems. However, there will continue to be the need for particular individual accommodations such as for blind students to manage graphs (Griful-Freixenet et al., 2017). Accommodations are often offered on the basis of a diagnosed condition (e.g., Access Disability Support Unit, 2018). However, students argued against the system of being offered accommodations on the basis of their diagnostic labels (Hewett et al., 2020). Given that students with different disabilities and conditions, or different combinations of them, may experience different difficulties, it may be better to organise accommodations by category of need rather than by diagnostic criteria. This has been illustrated in Table 4. The students themselves actually suggested that accommodations would be most effective if they were individually and flexibly negotiated with themselves (Accardo et al., 2019a; Stegenga et al., 2021). Indeed, given the challenges of disclosure and cost of diagnostic procedures, there is a need for HE institutions to be flexible in meeting individual student needs and to enable access to required accommodations with the least possible bureaucracy. Studies also highlighted the call for informing effectively both the students themselves as well as lecturers and administration on the availability, appropriateness and practical implementation of accommodations (Moriña and Perera, 2020; Pfeifer et al., 2020; Dreyer, 2021).

## 5 Conclusion

This systematic review has highlighted the aspirations and needs of students with disability for equitable participation in HE across the world. The findings set out the various important issues that institutions need to address if they are seeking to create welcoming, socially just HE environments and systems. Listening to the voices of the students themselves is essential for the generally ableist environments of HE institutions to become aware of the struggles students with disability go through as they seek to participate successfully in their courses, often without daring to disclose their difficulties.

The review has added to the increasing number of relevant systematic reviews by providing a more comprehensive picture of the issues. Firstly, given that student voice is often captured in studies with small samples and often of single categories of disability, the review has shown how similar concerns have been raised by different student groups in different contexts. It brought together for the first time the more recent studies that focus on the different types of disabilities, medical and mental health conditions and that come from students across the world. It has thus captured both the important influences on the students’ development of a healthy self-efficacy as well as considerations of system and individual accommodations in physical, social and academic provision. Thus, it has provided a comprehensive framework that HE institutions can use in the development of policy and procedures for improving accessibility. Indeed, this review has served in the first place as a framework for the construction of a

quantitative questionnaire for studying the aspirations and needs of students with disability at the University of Malta (see Appendix B). As illustrated in Figure 2, students need enabling systems and individual arrangements for social integration as well as for engagement in the learning process.

At the same time, the focus on student voice can be seen as a limitation: it will need to be matched with reviews of faculty and administration perceptions and experiences regarding the challenges they perceive for responding to student diversity and developing UDL. Similarly, some wider issues may require attention, such as how inclusive provision by a HE institution is linked to the gradual development of attitudes and provision within itself and within the community that it serves. The review was also limited to studies published in English, and may have missed some issues related to the cultural contexts of HE. Furthermore, the inclusion criteria only referred to 'disab\*' and 'mental health' in the title, thus missing research whose title did not include those terms and instead referred to specific conditions such as ADHD. Thus, while providing a comprehensive framework, this review is limited in terms of addressing in practical detail issues raised more strongly within a specific category of disability, such as autism, LD, or depression, or of specific provision, such as addressing student transitions or use of digital technology, or for particular types of courses. Moreover, many of the studies reviewed did not provide detailed descriptions of the types of disabilities involved. Research and reviews focusing on specific conditions thus remains an ongoing requirement for addressing more specific needs.

Finally, this review has shown how most studies have exposed the structural inequalities that continue to hamper the participation of students with disability. This trend can be complemented by research that also points the way forward by highlighting examples of how some universities are creating more psychologically safe environments for diversity and enabling inclusive universal design of campuses, welcoming communities, and teaching and learning systems (e.g., Burgstahler, 2021), as well as the related resilience factors that enable students with disability to participate successfully in HE (e.g., Moriña, 2017; Ule, 2017; Duma, 2019).

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- \*References marked with an asterisk indicate studies found in the three databases and included in the systematic scoping review.
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## Data availability statement

The original contributions presented in the study are included in the article/supplementary material; further inquiries can be directed to the corresponding author.

## Author contributions

PB as principal investigator and MB as study research officer carried out the literature search and analysis and produced the first draft. A-MC, AG, MM, EM, CS, RV, and JV contributed to the conception and design of the study and provided feedback for manuscript revision. All authors contributed to the article and approved the submitted version.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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