



Clinical education of nursing students with learning difficulties: An integrative review (part 1)

Kristine M. L'Ecuyer

PhD, RN, CNL, 3525 Caroline St., St. Louis, MO, 63104, USA



ARTICLE INFO

Keywords:

Nursing students
Nursing education
Learning disabilities
Learning difficulties
Preceptors
Clinical

ABSTRACT

Schools of Nursing have witnessed an increase in the number of nursing students who struggle with learning difficulties. Support and accommodations are available in academic settings. Because nursing is a practice profession students also learn in clinical settings, which may not have similar support and accommodations. The compatibility of the clinical setting for the education of students with learning difficulties has not been studied. Staff nurses responsible for the clinical education of students and new nurses receive little preparation for their role as educator, and may not feel supported to meet the needs of those with learning difficulties. This is part one in a series of articles about the clinical education of nursing students with learning difficulties. This paper provides a framework and literature review for the development of a study (part 2) exploring the issue from the perspective of the nurse preceptors who educate students and new graduates with learning difficulties.

1. Introduction

Eleven percent of undergraduates enrolled in postsecondary education report having a disability of some kind (Snyder and Dillow, 2015), approximately one-third of those are specific learning disabilities (Raue and Lewis, 2011). Likewise, schools of nursing are experiencing an increase in admissions and graduations of nursing students with disabilities (Betz et al., 2012; Evans, 2014), some of which relate to learning. In addition to the students who have been identified with learning difficulties, another 15% or more may struggle due to unidentified or unaddressed learning and attention issues (Cortiella and Horowitz, 2014). It is difficult to predict the extent to which learning difficulties will affect performance in nursing school. However, it is likely that the challenges they present in the classroom are also evident in clinical environments. This paper reports findings from an integrative review of the literature on the education of nursing students with learning difficulties and serves as a framework for a subsequent article (part two) that explores the issue of students and new graduates with learning difficulties in the clinical setting (L'Ecuyer, 2019).

The terminology related to learning 'disability', 'disorder', and 'difficulty' is complicated and varies internationally (MacKay, 2009). In the United Kingdom (UK), the term 'learning disability' infers a mental handicap or retardation (MacKay, 2009). But in the United States (US) the term 'learning disability' refers to a diagnosis of a specific learning disability (SpLD), defined as a disorder in one or more of the processes involved in understanding or using language, spoken or written, which

manifest in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations (U.S. Department of Education, 2006). Examples of SpLD include dyslexia, dyscalculia, dysgraphia, auditory or visual processing disorders, etc., and exclude difficulties due to mental retardation. For the purpose of this paper, the more general term of learning difficulty (LD) is used and refers to a struggle or impediment with the learning process. Learning difficulties include specific learning disabilities. Since it is typically beyond the scope of practice for nursing faculty to make a specific diagnosis, the more general and inclusive terminology is sufficient. The terminology in cited references was maintained as written to ensure the meaning is intended as presented by those authors.

Understanding how students with learning difficulties progress from elementary, secondary, postsecondary, and nursing education in academic and clinical settings provides context for this paper. As students advance from classroom to clinical education, their educators begin to include staff nurses who work in the role of 'preceptor'. A preceptor is a nurse who assumes the responsibility of educating a student or new employee in a clinical setting. Nurse faculty in academia partner with staff nurse preceptors to provide clinical education that prepares the student for practice. Few research studies have focused on nursing students with learning difficulties in classroom, and even fewer address the issue in clinical settings. The experiences of nursing students with physical disabilities has been described, but it is unknown if these experiences are similar for those with learning difficulties, often called 'hidden' or 'invisible' because they are less apparent. Negative attitudes

E-mail address: lecuverk@slu.edu.

<https://doi.org/10.1016/j.nepr.2018.11.015>

Received 10 May 2017; Received in revised form 31 October 2018; Accepted 28 November 2018

1471-5953/ © 2018 Elsevier Ltd. All rights reserved.

Table 1
Difficulties encountered by students with learning difficulties.

Anxiety
Memory
Organization
Prioritization
Frustration
Reading/Reading comprehension
Spelling
Writing
Math/Math computation
Study Skills
Meeting deadlines
Following directions
Receptive and Expressive oral language
Need additional time for reading and assignments
Problems with interpersonal relationships
Tendency to devalue their own achievements

(Costello and Stone, 2012; Ijiri and Kudzma, 2000; Tumminia and Weinfeld, 1983).

toward students with disabilities have been documented, and nursing faculty have expressed concerns about students with learning disabilities and their ability to become successful nurses (Maheady, 1999; Sowers and Smith, 2004b). It is unknown if preceptors have similar attitudes or concerns and if the stigma of having a learning disability impacts experiences during clinical education.

2. Background

Learning difficulties are suspected when students do not meet grade-level expectations in any of the following areas: oral expression, listening comprehension, written expression, basic reading skills, reading comprehension, mathematics calculation, or mathematics problem solving (U.S. Department of Education, 2006). Other disorders can impact an individual's ability to learn and have their own diagnosis and implications. These include intellectual disability, autism, deafness, blindness, behavioral disabilities, and attention-deficit/hyperactivity disorder (ADHD). Students with any of the above disorders may experience a range of difficulties that may persist in academic settings and impact success (See Table 1). In addition, the stressors of nursing school may exacerbate learning difficulties.

Nursing faculty are in a position to provide the student with needed resources and support or make appropriate referrals. Academic support and the use of accommodations in nursing education, although controversial at one time, are often mandated by federal regulations and therefore common practices for today's students. Nursing students must also demonstrate mastery of psychomotor skills in lab and clinical practice settings. Of particular concern for students who receive accommodations in college is that they may not be entitled to the similar accommodations when they enter the workforce (Levy, 2001). As students leave the supportive environment of their academic institutions and begin their first professional job as a nurse, it is likely that issues related to their learning difficulties may continue to cause challenges. Nurse managers have expressed concerns about the ability of nurses with disabilities to perform necessary job tasks, patient safety, and acceptance by the public and coworkers, but rated their performance as above average or excellent (Wood and Marshall, 2010). Nurse educators must balance the legal rights of students while ensuring minimum academic and clinical competency of graduates. Nurse educators must also understand the clinical environment for which students are being prepared to practice, and help prepare preceptors to educate and support students, such as those with learning difficulties, who may struggle in clinical settings.

2.1. Theoretical framework: stigma theory

Stigma theory is an appropriate framework for understanding how stereotypes can lead to negative attitudes and interfere with the interpersonal relationship formed between a preceptor and a student in a learning situation. Negative attitudes toward those with learning disabilities are concerning as they are known to contribute to student stress and social/emotional issues (Roer-Strier, 2002). Goffman's theory of stigma (Goffman, 1963), describes how stigma, stereotypes, and prejudice are formed toward both individuals and groups of people, and how the presence of stigma impacts interpersonal relationships. Stigma has been defined as the stereotypes or negative views attributed to a person when their characteristics or behaviors are viewed as different from societal norms (Dudley, 2000). According to Goffman, people are categorized in societies based on their ordinary and natural characteristics or 'attributes,' which form normative expectations (Goffman, 1963). A stigma, also called a failing, shortcoming or handicap, is created when an individual possesses an attribute that makes them different from other members of a group in society. Stigmas about learning difficulties may cause a preceptor to view the individual with a learning difficulty as different from normal, which may affect the preceptor's commitment to their role. Stigma could result in an unsupportive learning environment, or worse, preceptors who are unwilling to work with students with learning difficulties.

Stigmatization of people with disabilities has been described in the following themes: social exclusion, prejudiced social support, limitations in decision-making, discrimination in education and the labor market, and disrespect and lack of confidence in the competence of people with disabilities (Buljevac et al., 2012). College students with learning disabilities have described themes related to being stigmatized such as being misunderstood or intellectually inferior (Denhart, 2008; Hartman-Hall and Haaga, 2002; May and Stone, 2010). Nursing students themselves have reported struggling with issues related to social support, and fear of ridicule or discrimination (Kolanko, 2003; Ridley, 2011). Additionally negative attitudes and concerns about students with learning disabilities have been reported (Evans, 2014; Sowers and Smith, 2004b). It is unknown if nurse preceptors have similar negative attitudes towards students/nurses with learning difficulties because of their differences.

The sociological feature of acceptance in the preceptor-nursing student relationship should be considered. According to Goffman (1963) a stigmatized person might find support or acceptance from a 'sympathetic other' who either 'owns' the stigma, or is 'wise' to it. Someone who 'owns' the stigma knows from experience what it is like to have this particular stigma. Someone who is 'wise' to the stigma may have had a personal experience with a similar stigmatized person. For example, nurses sympathize with patients with a certain type of stigma if they have worked with them, and they know and understand the condition that causes the stigma. Students and new graduates with learning difficulties may need to rely on the existence of sympathetic others for support. In the preceptor-student relationship, sympathizers would be ideal preceptors.

3. Aims

The aim of this integrative review is to describe the state of the science regarding the practice of educating nursing students with learning difficulties to determine implications for nurse preceptors who teach them in clinical settings. The question that guided this review was: What is the experience of schools of nursing, nursing faculty, and nursing students themselves for students with learning difficulties in classroom and clinical settings?

4. Methodology

The integrative review method was chosen as it summarizes the

existing literature to provide an inclusive understanding of the state of the science and allows the combinations of diverse methodologies (Whittemore and Knafl, 2005). An extensive review of the literature was completed in July 2014, and then updated in November of 2016 to retrieve published journal articles on the topic of nursing students with learning difficulties. The search strategy (*nurs* AND student**) AND (*"learning disorder*" OR "learning disab*" OR "learning difficult*" OR "intellectual* disab*" OR "processing disorder*" OR "attention deficit hyperactivity disorder*" OR "attention deficit disorder*" OR dyslexi* OR dyscalculi* OR dysgraphi* OR agraphi**) was used. The years were not limited in an effort to get a thorough historical perspective. Original database and years searched included:

- CINAHL Plus with Full Text (EBSCOhost) 1937 to July 7, 2014
- Cochrane Library (Wiley): Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials, Cochrane Methodology Register, Database of Abstracts of Reviews of Effects, Health Technology Assessment Database, NHS Economic Evaluation Database (search date: July 10, 2014)
- Education Source (EBSCOhost) 1929 to July 9, 2014
- ERIC (EBSCOhost) 1966 to July 9, 2014
- Ovid MEDLINE(R) 1946 to July 10, 2014
- Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, July 10, 2014
- PsycINFO (OvidSP) 1967 to July 10, 2014
- Science Citation Index Expanded, Social Sciences Citation Index, Arts & Humanities Citation Index (Web of Science) 1990 to July 7, 2014
- Scopus (Elsevier) 1823 to July 7, 2014

Inclusion criteria included reports of research pertaining to nursing students in schools of nursing with learning difficulties. The results were limited to English language. Letters, editorials, books, dissertations, and theses were eliminated from the results set using database limiters. Search results initially yielded 1190 papers. After duplicates were removed, a data set of 682 remained. In 2016 an additional 118 papers were added to the data set. These titles or abstracts were reviewed for relevance. The final sample for this integrative review included 22 research publications coming from Ireland (1), Japan (1), Sweden (1), the US (9), and the UK (10). Because dyslexia is an example of a specific learning disability, studies with a limited focus on students with dyslexia were included. Literature reviews were not plentiful and not counted in the above numbers. One such review of UK literature on nursing students with disabilities describes barriers and recommends supportive strategies (Storr et al., 2011). Another review of nursing students with dyslexia in clinical settings described themes of risks to patient safety, disclosure, and support (McPheat, 2014). The limited variety in topics studied and the propensity of qualitative studies, made these findings difficult to compare. In addition while some studies had very narrow research questions most were exploratory in nature and contribute findings that are multifaceted. The articles chosen for review were organized into the following three major themes: surveys of schools of nursing, faculty perspective, and student perspective. Findings are summarized in Table 2 and discussed as follows.

4.1. Surveys of schools of nursing

Researchers have surveyed schools of nursing in the US, the UK, and in Japan to assess admission and accommodation practices of students with disabilities. The first identified survey followed the implementation of the Americans with Disabilities Act of 1990 and queried program directors of 240 baccalaureate degree nursing programs in the US to ascertain if they had a list of essential functions that students must be capable of performing when enrolled. At that time, almost 17% ($N = 26$) of the 164 programs that responded had a list of essential functions, and only 14% of the programs asked applicants if they can

complete essential functions with or without accommodations (Davidson, 1994). The authors suggested essential function lists be in place to benefit both the schools of nursing and the applicants.

Two other national surveys have been conducted in the US. In a 1992 survey of 420 schools of nursing, 45% of the 247 respondents ($N = 111$) reported admitting new students with disabilities; most prevalent was dyslexia/learning disability, followed by physical, hearing and visual impairments, with psychological impairments as the least prevalent (Watson, 1995). In another sample of 200 nursing programs, 78% of the 86 respondents ($N = 67$) reported admitting students with 'special needs' in the previous five years. The average number of students with disabilities in these schools was 13, and nearly half graduated. The majority had learning disabilities ($N = 57\%$), followed by social or emotional issues, visual, and mobility impairments (Magilvy and Mitchell, 1995).

Four surveys were distributed in the US on a limited state-wide scale. Nursing schools in North Carolina ($N = 54$) were surveyed regarding their use of performance expectations in admission procedures. Of the 45 respondents, 50% admitted nursing students with learning disabilities, and 64% had a list of core program expectations for prospective students. Comments revealed awareness of the struggles faced by these students, and lack of information available to help them. Further, 18% had no office or department of special student services (Colon, 1997). Two studies focused on nursing schools in California. In a survey by Persaud and Leedom (2002), of 102 California nursing schools, 28% of the respondents ($N = 52$) reported admitting students with learning disabilities, and all reported providing accommodations of varying degrees. However, 19% said they had applicants or students for whom accommodations could not be made (crutches, wheelchairs not allowed in hospitals, severe back injuries), and 16% said they had made accommodations they felt were not reasonable (lowering standards, increasing time for tasks in clinical, and lowering faculty ratios in clinical) (Persaud and Leedom, 2002). Ten years later, Betz et al. (2012) surveyed 130 nursing schools, asking for an estimate of the numbers of students with disabilities enrolled. The respondents ($N = 65$) reported approximately 5% of nursing students in associate degree programs, 2% of baccalaureate degree students, and 0.6% of master's degree students had some type of disability, with learning disabilities the most frequently reported (Betz et al., 2012).

Financial constraints were documented in the UK for students with dyslexia (Wright, 2000). Of the 61 schools surveyed, respondents ($N = 41$) provided examples of costs associated with support of £2500 (\$3000) for students with dyslexia, and £240 (\$300) for 12 1-h specialist sessions, as well as costs of technology, software, and additional assessment requirements. Funding came either from a central source, from departments, or in some cases from the students. The need for staff development and written policies was emphasized (Wright, 2000).

Finally, in a national survey of nursing schools in Japan, nurse educators identified 2% of their nursing students ($N = 330/14,325$) as having extreme difficulties in studying nursing, half of which were special educational needs, such as listening, speaking, reading, writing, math, reasoning, inattentiveness, hyperactivity/impulsivity, or social interaction/restricted interests (Ikematsu et al., 2014). The educators further noted that the most difficult learning situations were nursing care and communication in clinical settings (Ikematsu et al., 2014).

Other important topics documented by surveying these schools of nursing were the availability of accommodations, the institutional support for its use, and the issues surrounding students asking for, eligibility of, and use of accommodations. Accommodations for students with disabilities (all types) were described in the form of extended time, quiet environments, one-to-one assistance, counselors, tutors, aids, study skills courses and advisors, extended library services, scheduling flexibility, program deceleration, building modifications, readers, equipment modifications, assist devices, and interpreters, and changes or assistance with clinical assignments (Betz et al., 2012; Colon, 1997; Magilvy and Mitchell, 1995; Watson, 1995; Wright, 2000).

Table 2
The experience of nursing students with learning difficulties from the perspective of schools, faculty, and students.

Author(s) Year Country	Purpose	Method	Sample Size and Participants	Learning difficulty or disability studied	Key findings
Schools of Nursing					
Davidson 1994 USA	Determine how many BSN programs have a list of essential functions that a nursing student must complete to graduate.	Descriptive Cross sectional Mailed survey	N = 164 National sample of program directors of NLN accredited nursing programs	Not specified	<ul style="list-style-type: none"> 83% do not have lists of essential functions 86% do not assess an applicant's ability to complete essential functions at the time of admission Essential function lists benefit students and schools of nursing 45% admit students with disabilities; most had dyslexia 21% request voluntary disclosure of disabilities at admission Services provided: one-to-one assistance, instructional aids, classroom modifications, clinical and equipment modifications 77.6% admitted students with special needs in the last 5 years Learning disabilities and mental impairments were most frequent Top accommodations: counselors, tutors, scheduling flexibility, and program deceleration Themes of faculty experiences: lack of awareness, creative problem solving, and problems and failures 35% admitted students with learning disabilities Undiagnosed students were later identified or self-identified The most frequent accommodations were counselors, tutors, tape-recorded lectures and computer access National issues: funding, quality and policy issues, and the risk of practice Local issues: access to IT and specialist equipment, staff development, identification, access to other services, academic and clinical support, and accommodation provision Most admitted students with identified disabilities; most were learning disabilities Some accommodations were considered inappropriate by clinical agencies (i.e. crutches) 19% had students for whom accommodations could not be met 16% were asked to make "unreasonable" accommodations 15% reported making accommodations they would not make in future All had campus services available to help make accommodations
Watson 1995 USA	Determine responses and reactions to applicants and students with disabilities.	Descriptive Cross sectional Mailed survey	N = 247 National sample of representatives of AACN member Baccalaureate nursing programs	Learning disability, Physical, visual or hearing impairment	
Magilvy & Mitchell 1995 USA	Describe the admission and graduation practices of students with special needs or who are chronically ill. Identify accommodations provided.	Descriptive Cross sectional Mailed survey, and Telephone interviews	N = 86 Stratified random National sample of program directors, faculty, and admission officers of 100 baccalaureate and 100 associate degree NLN accredited programs	Physical, visual or hearing impairment, Mental limitations, Chronic illnesses	
Colon 1997 USA	Discover how nursing programs admit, identify, and graduate nursing students with learning disabilities and to identify accommodations provided.	Descriptive Cross sectional Mailed survey	N = 45 State-wide sample of Deans or directors of North Carolina Board of Nursing approved schools	Learning disabilities	
Wright 2000 UK	Explore available support to nursing students with dyslexia and how is it financed	Descriptive Grounded theory Email Survey Open ended questions	N = 28 National sample of members of the Council of Deans	Dyslexia	
Persaud & Leedom 2002 USA	Examine effect of ADA on admission and retention practices in nursing schools. Assess methods to assess or recognize a disability and how to establish reasonable accommodations.	Descriptive Cross sectional Mailed survey	N = 52 State-wide sample of directors or designees of NLN accredited schools in California	Cognitive, communicative, emotional, immune, physical disabilities.	

(continued on next page)

Table 2 (continued)

Author(s) Year Country	Purpose	Method	Sample Size and Participants	Learning difficulty or disability studied	Key findings
Betz 012 USA	Investigate admission and accommodation policies for students with disabilities	Descriptive Cross sectional Mailed survey	N = 65 State-wide sample of school of nursing representatives responsible for accommodations from California Board of Nursing approved schools	Learning disabilities, Chronic illnesses, Mental health conditions, Physical disability, and more than one disability	<ul style="list-style-type: none"> ● 5% of associate degree students, 2% of baccalaureate, and .6% of masters students had disabilities, the most frequent was learning disability ● Testing and quiet environment were the most common accommodation requested and received ● 60% had technical standards in place ● Students may not self-disclose prior to admission, and many do not request accommodations. ● 28.5% of students screened had scores suggesting further assessment ● 11% received further testing and were identified as having dyslexia ● Diploma students had higher dyslexia checklist scores ● Screening allowed for earlier identification, fast tracking of assessment and support, and increased likelihood of progression ● 4.3% of sample had previously been identified; intervention resulted in an additional 6.3% of students seeking assessment ● Students were referred to disability services 4–6 weeks earlier and had higher progression rates ● Mainstreaming study skills was cost-effective, and improved retention ● 2.3% of students identified as “extremely difficult”, and 1.02% had “special education needs” ● The most prevalent was social interaction followed by listening and inattentiveness. ● Most problems were encountered in the clinical area.
Wray et al. 2012 UK	Explore the impact of screening pre-registration nursing students for a specific learning disability at entry, and the impact of specialist support on “at risk” students.	Descriptive Cross sectional survey of students at entry to the program using the Adult Dyslexia Check List (ADCL); Descriptive analysis; comparisons to previous cohorts.	N = 242 181 diploma students and 61* students from one school of nursing.	Dyslexia	<ul style="list-style-type: none"> ● Specific learning disability (SpLD)
Wray et al. 2013 UK	Evaluate the impact of embedding study skills sessions into mainstream curriculum for pre-nursing students.	Descriptive evaluation approach (feedback questionnaire and progression data)	N = 384 Pre-registration nursing students from two cohorts in one school of nursing.	Specific learning disability (SpLD)	<ul style="list-style-type: none"> ● Extremely difficult students with special education needs
Ikematsu et al. 2014 Japan	Identify the prevalence of nursing students with special education needs.	Descriptive Cross sectional Mailed survey	N = 341 National sample of nurse administrators of RN nursing programs in Japan	Visual and hearing impairments, Physical, Mental health, ADD/ADHD, Learning disabilities	<ul style="list-style-type: none"> ● Across seven types of disabilities, faculty perceptions about success in nursing school and likelihood of success as a professional were lowest for those with learning disabilities ● Knowledge of faculty related to students with disabilities was low, and concern was high ● Changes in perceptions of the capacity of students with disabilities to be successful in nursing programs and as professionals were significant after training ● Concerns decreased and knowledge increased after training ● 2.25% of all students were referred to the advisors for a variety of difficulties
Nursing Faculty Sowers & Smith 2004a USA	Assess perceptions, knowledge, and concerns about nursing students with disabilities.	Descriptive Cross sectional Mailed Survey	N = 88 Nursing faculty from 8 nursing programs	Visual and hearing impairments, Physical, Mental health, ADD/ADHD, Learning disabilities	<ul style="list-style-type: none"> ● Significant learning disabilities, Visual or hearing impairments, Use of a wheelchair, Mental health disabilities
Sowers & Smith 2004b USA	Evaluate the effects of training on faculty perceptions, knowledge, and concerns about nursing students with disabilities.	Longitudinal Survey of faculty before and after training	N = 112 Nursing faculty from 8 programs who participated in a 2-h training.	Dyslexia Dyspraxia	<ul style="list-style-type: none"> ● 2.25% of all students were referred to the advisors for a variety of difficulties

(continued on next page)

Table 2 (continued)

Author(s) Year Country	Purpose	Method	Sample Size and Participants	Learning difficulty or disability studied	Key findings
Tee et al. 2010 UK	To evaluate services of advisors in terms of support and adjustments for disabled students in practice settings.	months, using progression data, interviews, and reflections.	N = 4 SPLA's (Student practice learning advisor's) in one school of nursing	Mental impairment Hearing impairment	<ul style="list-style-type: none"> Adjustments included: structuring information, assisting with communication, memory and recall (cue cards, mind maps, practice, dictionaries), increased supervision, quiet spaces to work, adjustments in patient assignments, counseling services, alternate shift patterns, learning contracts The medical model is used to view students with disabilities Negative attitudes contribute to lack of disclosure by students Students with dyslexia may struggle with "getting the work done" 'Severe dyslexic' students were described as challenging and struggle with competence and safety issues Little support was available or provided
Evans 2014 Ireland	Explore how students with dyslexia are viewed by nursing faculty (language and terminology)	Qualitative Interviews	N = 19 Nursing faculty from two schools of nursing	Dyslexia	<ul style="list-style-type: none"> Students had above to above-average standardized test scores and ability-achievement gaps Strategies that enhanced learning: structure, direct instruction, clear directions, consistency, organization, positive attitude Difficulties: anxiety, social isolation, limited time to process and complete work Patient safety was a priority Nursing activities took longer to complete Disclosure was an issue, some thought it would enhance support received Many experienced discrimination, some recognized the potential for unsafe practices Issues: communication difficulties, hand-eye coordination, dexterity, short term memory, attention Struggles: anxiety, understanding medical and pharmacologic jargon, abbreviations, rules of clinical settings, coping with changes, inconsistencies, disclosure, self-esteem Needs: extra time, word processors to take notes, support for literary deficits, individualized learning environment Some students concealed their dyslexia in clinical practice due to stigma and fear of being labeled Disclosure was viewed as stressful and threatening, but had the potential to increase support Disclosure was influenced by length of time in each clinical
Nursing students with disabilities					
Kolanko 2003 USA	Describe the meaning of being a nursing student with a learning disability and the experience of various aspects of the nursing program.	Open ended interviews and document analysis of academic records	N = 7 Nursing students	Reading disabilities ADD	
Morris & Turnbull 2006 UK	Explore the clinical experiences of nursing students with dyslexia and the potential influence of this disability of their practice.	In-depth interviews	N = 18 Nursing students	Dyslexia	
Price & Gale 2006 UK	Discover the impact of a dyslexic profile on clinical practice	Interviews	N = 20 (10 with dyslexia; 10 without)	Dyslexia	
Morris & Turnbull 2007 UK	Explore the experience and issues surrounding disclosure of dyslexia by nursing students in the clinical setting.	In-depth interviews	N = 18 Nursing students identified with dyslexia	Dyslexia	
				Dyslexia	

(continued on next page)

Table 2 (continued)

Author(s) Year Country	Purpose	Method	Sample Size and Participants	Learning difficulty or disability studied	Key findings
White 2007 UK	To determine whether pre-registration nursing students with dyslexia experience specific problems in developing clinical competence, identify what strategies they use and how they may be supported in clinical practice	Case study Stage 1: Semi-structured interviews of students, learning needs support officers, and faculty. Mailed Surveys of clinical mentors Stage 2: Longitudinal interviews after each clinical placement. Interviews of clinical mentors	Stage 1: N = 7 nursing students, 3 learning needs support officers, 8 nursing faculty; 9 clinical mentors. Stage 2: N = 4 nursing students, 7 clinical mentors		<ul style="list-style-type: none"> • Nursing students with dyslexia have specific problems in clinical practice. • Mentor relationships are key • Mentors need support for their role • Difficulties in clinical practice: dealing with information, performing the role, administering drugs • Support or coping strategies: Individualized strategies, support networks, information technology (dictionary or spell checker), colored paper, tinted glasses, asking for help, seeking clarification, looking things up, rehearsing report, practice saying new words • Time spent in clinical is important to integrate theory and practice • Clinical placement mentors are important and they need clear expectations • Dyslexia affects practice, short term memory, spelling, writing, reading, pronunciation, and requires more time to complete tasks • There are judgemental attitudes toward dyslexia, lack of understanding, and discrimination • Coping strategies: colored overlays, diaries, planners, spell checkers, computers, dictionaries, journals, clarification, information • Fear and ridicule exist • Delays in identification, referral, and testing may adversely affect learning • Early diagnosis enables support • Disclosure can cause anxiety • Attitudes of educators and clinical colleagues affects student experience • Strengths of students with dyslexia are strong communication skills, spatial awareness, and creativity • Struggles: reading, writing, spelling, feeling slower performing calculations, and need for mentors to have a better understanding of dyslexia and treat them as individuals • Students worry about making mistakes and feel at a disadvantage • Disclosure about dyslexia is based on comfort, and worries about stigma • Nursing faculty would like to know if students have dyslexia. Some are concerned about fit to practice and patient safety • Students describe themselves in three categories of dyslexia disclosure:
Child & Langford 2011 UK	Examine the learning experiences of nursing students with dyslexia during clinical placements in order to improve support.	Phenomenological lifeworld approach Semi-structured interviews	N = 12 Nursing students (6 with dyslexia, 6 without)	Dyslexia	
Ridley 2011 UK	Explore the experiences of pre-registration nursing students with dyslexia	Semi-structured interviews	N = 7 Nursing students with diagnosis of dyslexia	Dyslexia	
Sanderson-Mann 012 UK	Compare experiences of nursing students with dyslexia and those without dyslexia during clinical.	Mixed-methods Interviews and mailed surveys	Interviews: N = 9 nursing students, 7 nursing faculty Surveys: N = 54 nursing students with dyslexia, 52 with- out dyslexia	Dyslexia	
	Describe how students construct their dyslexic identity.	Narrative interviews	N = 12 nursing students	Dyslexia	

(continued on next page)

Table 2 (continued)

Author(s) Year Country	Purpose	Method	Sample Size and Participants	Learning difficulty or disability studied	Key findings
Evans 2013 Ireland					<ul style="list-style-type: none"> ● The 'embracer' is organized, proactive, and accesses support ● The 'passive engager' does not disclose their dyslexia, experiences and discusses their difficulties ● The 'resister' denies having dyslexia and denies having difficulties
Howlin, Halligan, & O'Toole 2014 Ireland	Evaluate the effectiveness of a clinical assessment tool and explore the meaning of support in clinical practice for students with a disability	In-depth interviews	N = 4 (3 nursing students with dyslexia, and 1 with mental health disability)	Dyslexia Mental health	<ul style="list-style-type: none"> ● Disclosure was difficult in clinical areas due to environmental or personal factors, and staff attitudes ● Experiences of receiving accommodations were positive and negative ● The role of clinical staff was key ● Accommodations used: extra time, note cards, templates, lists, receive materials in advance ● Students devised their own self-care methods
Olofsson 015 Sweden	Explore outcomes of students diagnosed with dyslexia	Interviews, document analysis of student records, reading and writing tests, and a survey of perceptions of	N = 50 students in higher education. 13 were nursing students.	Dyslexia	<ul style="list-style-type: none"> ● 78% studied at an expected rate of study and managed well despite their reading and writing difficulties ● Students described difficulties with reading in another language, and taking notes in classes ● Students rated themselves highly on their academic abilities, indicating confidence

4.2. Nurse faculty perspective

The research on teaching students with learning difficulties was completed via surveys and interviews of faculty working with students of all types of disabilities including learning difficulties and specific learning disabilities such as dyslexia. Much of the findings are limited to faculty knowledge, concerns, attitudes and their perceptions and role in providing support and accommodations. Faculty from eight nursing programs were surveyed regarding their perceptions of the likelihood of success of students with disabilities in their nursing program or the nursing profession (Sowers and Smith, 2004b). The greatest concerns were for visually impaired students, and then concerns lessened for those with limited use of hands, learning disabilities, mental health disabilities, hearing impairments, wheelchair uses, and the least concern was for students with ADD/ADHD. Faculty also had high levels of concern for the impact on academic standards, cost, impact on patient care, impact on clinical standards, and time requirements for working with students with learning disabilities. These researchers, concerned about the potential barriers negative attitudes have on students, created a faculty training curriculum, and re-surveyed the participants to assess the effectiveness of the training (Sowers and Smith, 2004a). One hundred and ten faculty who completed the program had slightly lower concerns about students with learning disabilities indicating that the education was slightly successful in changing faculty perspectives.

Because the number of students with learning difficulties is increasing, some experts recommend processes be in place for screening, identification, and early access to support services. In one study, screening students for learning difficulties early in their nursing curriculum proved successful and the authors reported an increase in students identified and referred to disability services and an increase in retention when support was provided (Wray et al., 2012). The students ($N = 242$) were screened for dyslexia, and those with significant scores ($N = 69$) were referred to Disability Services for further assessment, and invited to participate in additional study skills support sessions. Increased disability service assessment resulted in 11% of the total cohort diagnosed with a specific learning disability. Some students had not been previously identified with a learning disability, and the screening provided earlier identification, further assessment, and access to support services prior to encountering struggles (Wray et al., 2012). These researchers then reported findings from another study that described the strategy of embedding the study skills course into the curriculum of an entire cohort ($N = 384$) of students. They found by mainstreaming the study skills they attained shorter referral times to disability services, and even higher progression rates for all students, including those with specific learning disabilities (Wray et al., 2013). On feedback questionnaires, students were satisfied with the inclusive approach reduced faculty time and the cost to the University support services was lowered. Faculty have a role in providing strategies to screen, identify and support students in efforts to impact both retention and progression of students with learning difficulties.

It has been recognized that faculty have influence on the progression of students, and therefore it is important to understand their perceptions and attitudes. Faculty perceptions of nursing students with dyslexia were explored by interviewing 12 faculty and examining the language they used in describing those students. Evans (2014) held that the language used provides a socio-cultural context to the interactions between students and faculty. The first of two themes identified was 'getting the work done' and describes the work that nurses do and the expectations on students. Some faculty shared concerns about the students' ability to complete their assignments and the demand on faculty for students unable to perform. The second theme 'the severe dyslexic student' detailed how the faculty viewed students in terms of the severity of their disability and how that correlates to the level of support they require (Evans, 2014). Negative attitudes of faculty were documented in this study and require further exploration. These findings contribute further evidence regarding the existing tension between

performance standards and rights of students with difficulties.

The final study discussed here is from Tee et al. (2010) in which the outcomes of 'student practice learning advisors' (SPLA) who are responsible for supporting disabled students was evaluated after 12 months. Of all the students referred to the SPLA's almost 60% ($N = 27/46$) had disabilities (most were not disclosed or not diagnosed prior to admission to the program). Data indicated an increased need for support during the third year of the program, and although not all students who work with SPLA's have a disability, the ones that did required 20% more contact time (Tee et al., 2010). Case studies of 4 students (dyslexia, dyspraxia, hearing impairment, and mental impairment) working in clinical settings were analyzed. Clinical mentors worked with the student and the SPLA to devise a plan for clinical accommodations and strategies ranging from providing feedback to setting learning contracts. The involvement of both mentors and the SPLA's in students clinical practice promoted student well-being and additional advocates. Although this study was limited in the number of students with learning disabilities, it does highlight the importance of a comprehensive support system for students and perhaps could serve as a model to help students bridge the gap from classroom to clinical settings.

4.3. Nursing student perspective

Research on the experience of nursing students with learning difficulties has been gathered solely by the use of interviews and qualitative methodology. The importance of supportive classrooms and clinical environments is a major finding. Kolanko (2003) was one of the first researchers to explore the meaning of being a nursing student with a learning disability by interviewing seven nursing students with reading disabilities, math disabilities, or ADD. The themes of struggle, learning how to learn with a learning disability, problems with time, problems with social support, and personal stories were described. These nursing students thought they worked harder, were 'on the edge', frustrated and more anxious than the nursing students who did not have learning disabilities. The students identified things that assisted learning as: direct instruction, structure, consistency, clear directions, organization, and a positive instructor attitude (Kolanko, 2003).

Many studies have focused specifically on nursing students with dyslexia. Ridley (2011) interviewed seven nursing students with dyslexia who described themes of fear of ridicule, fear of discrimination, and lack of caring toward them as students with a disability. Another important finding related to their struggle with disclosure, the anxiety it caused, and the balance between their sense of duty to disclose and the negative attitudes of educators and clinical colleagues. There was agreement that early diagnosis led to support that could be individualized for the student and an awareness of their professional responsibilities (Ridley, 2011).

Researchers who interviewed fifty students (education and nursing) with dyslexia in Sweden concluded that more than half of the students' progress at a normal rate of study and that most have acquired the ability to compensate for their reading problems. The authors note reading comprehension skills and word decoding may be significant determinants, and caution that taking notes and reading in foreign language may be challenging (Olofsson et al., 2015).

Other studies have focused on clinical settings. Morris and Turnbull interviewed 18 nursing students with dyslexia to understand their clinical experiences. Findings revealed feelings of discomfort in disclosing their disability, discrimination and negative attitudes; self-managing strategies; the need for more time; emotional aspects; and choices of future work settings (Morris and Turnbull, 2006). Students used strategies in clinical practice such as reminder pads, voice-recorders, extra practice with skills, drug calculation tools, and checking and re-checking orders. Some reported the use of avoidance behaviors such as not answering the phone or hiding as a strategy. The authors advocate for anticipation of needs of dyslexic students and suggest that these clinical issues are significant enough that consideration may be

needed regarding screening applicants for dyslexia and dyscalculia, or not allow students to continue in the program if their disabilities are significant enough to be a threat to patient safety (Morris and Turnbull, 2006). Findings from this study that focused on the issue of disclosure were expounded on in another article published the following year in which the authors frame the decision to disclose or not-disclose a disability by balancing the personal benefit to disclose (access to support) and the emotional cost (Morris and Turnbull, 2007). Decisions to disclose were related to attitudes of co-workers, concerns for patient safety, expectations for support, issues of confidentiality, and perceived potential for discrimination. The authors advocate for disability awareness training in the workplace and improved partnerships to protect students from stigma and negative learning experiences (Morris and Turnbull, 2007).

In another qualitative study, 11 nursing students also with dyslexia, 8 of their faculty, and 9 of their clinical mentors were interviewed revealing five themes: difficulties in clinical practice, disclosure, emotional aspects of the disclosure, support in practice, and enabling and disabling environments. They discussed increased time needed to complete tasks, difficulties filling in forms, reading handwriting, remembering details, managing workload, and difficulties with medication administration (White, 2007). Negative attitudes affected their self-esteem and confidence, and students made conscious decisions about disclosing their diagnosis to others, due to fear about subsequent discrimination. Supportive strategies in clinicals included laptops, a supportive network of family and friends, academic supports, and clinical supports. Students preferred working in small, supportive teams, with a friendly, relaxed atmosphere. Small numbers of patients with a structured routine and clear protocols were preferred. The clinical areas that were more challenging were those that were unpredictable, required students to remember a lot of material, write a lot of reports, had unfamiliar vocabulary terms, equipment, and where staff was unsupportive (White, 2007). The author suggested tailoring support to meet the individual needs of students, and encouraging them to take responsibility for their learning needs, recognize where they have problems, and develop coping strategies. The relationship with the mentor is important to establish open, non-judgemental, friendly, relaxed relationships with students so that they are able to disclose their learning needs without fear of discrimination (White, 2007).

Child (2011) also studied the clinical experience of students with dyslexia by comparing six nursing students with and six without dyslexia. Interviews revealed the students had some common experiences, however the dyslexic students emphasized difficulties with spelling, writing, reading, pronunciation, memory, confidence, and the need for more time. They also felt discrimination on disclosure of their disability, and judgemental attitudes. The importance of the role of the clinical mentor was also emphasized in this study (Child and Langford, 2011).

One mixed methodology study collected data from 7 faculty and 9 nursing student interviews, and a survey comparing clinical experiences of students with ($N = 54$) and without ($N = 52$) dyslexia. The faculty discussed issues of disclosure and fitness to practice in their interviews. Students with dyslexia described difficulties with documentation, reading, writing, and spelling, memory, concentration, coordination, and being slower with drug calculations and administration. They also would like mentors to have a better understanding of dyslexia, and some did not want to disclose or receive support because they did not want to feel different. For dyslexic students, the task of drug calculations was the hardest, as was writing and reading patient notes and using care plans, they also worried more about making mistakes, and felt at a disadvantage (Sanderson-Mann et al., 2012).

There is a dearth of literature on the clinical environment for students with learning difficulties other than dyslexia. An initial understanding of potential difficulties has been described in the literature. Few researchers have provided strategies for students or nurse educators. One such strategy is the use of a clinical needs assessment tool,

which may help bridge the gap of providing accommodations for students with a disability in academic to clinical settings (Howlin et al., 2014a). Interviews of four nursing students (3 with dyslexia, 1 with a mental health disability) who utilized the clinical assessment tool revealed difficulties related to disclosure of their disability to clinical staff, and a mix of positive and negative support from staff (Howlin et al., 2014b). Initial evaluation of this tool was positive, but further research and refinement is warranted.

5. Analysis and discussion

This integrative review of 22 research publications pertaining to education of nursing students with learning difficulties revealed studies that were organized into results of surveys of nursing schools, nursing faculty or nursing students. Themes across these three areas of study parallel each other in that early studies documented admission practices, the presence of negative attitudes and the common struggles the students experienced. More recent studies shift to issues surrounding accommodations, disclosure, and specific strategies of support. Researchers have advocated for screening practices in order to promote identification and early access to supportive services.

Limitations of this review are confounded by lack of clear definitions and inconsistent use of terminology across international settings. Many of these reports are quite old and are further limited by small sizes and lack of diversity in the types of learning difficulties studied. No longitudinal studies were found that follow the experiences of students over time. Continued exploration of these topics would contribute to what is known about nursing students with learning difficulties.

In addition to these research reports, numerous anecdotal publications and research reports of non-nursing college students and nursing students with other disabilities, as well as anecdotal publications about nursing students with learning difficulties contribute to the field and were reviewed. The education and accommodation strategies developed by experts add historical context and help form the background and discussion of this paper and subsequent research. The earliest anecdotal publication occurred in 1983. For the first time an increase in students with learning disabilities in nursing was recognized and linked to the need to provide appropriate accommodations and flexible teaching strategies without lowering educational expectations (Tumminia and Weinfield, 1983). Many similar articles followed and consisted largely of anecdotal accounts or review articles on reasonable accommodations and teaching strategies (Azzopardi et al., 2013; Eliason, 1992; Ijiri and Kudzma, 2000; Meloy and Gambescia, 2014; Shuler, 1990; Tumminia and Weinfield, 1986). Nurse educators addressed faculty questions regarding legal requirements and strategies to facilitate successful completion of nursing programs (Dupler et al., 2012; Sanderson-Mann and McCandless, 2005; Selekman, 2002), and implications for clinical settings (Griffiths et al., 2010; Sanderson-Mann and McCandless, 2006), including implications for preceptors and mentors in practice settings (Hargreaves and Walker, 2014; Salkeld, 2016; Tee and Cowen, 2012). Issues in practice settings and implementation of appropriate clinical accommodations have not been thoroughly studied, and evidence supporting the efficacy of these strategies has not been verified. Few researchers have examined the issue of learning difficulties as they specifically relate to nursing students and their transition as new nurses in the workplace.

It is evident that work remains regarding the preparation of students with disabilities and learning difficulties for the rigors of nursing, the identification of students who struggle so that early accommodations can be provided, and the ongoing support in classroom and clinical learning. Nursing students with learning difficulties should be studied over time to better understand the issues they face as they complete clinical rotations in academic programs, graduate, prepare for standardized exams, search for their first job, start in their first nursing position, and progress through orientation with nurse preceptors. Challenges they encounter and strategies they use to ensure their

success should be shared with others.

Stigma and negative attitudes have been documented (Evans, 2014; Sowers and Smith, 2004b), and further study of nursing students with all types of disabilities and learning difficulties are warranted. The phenomena of being discreditable and its relationship to student decisions about disclosure need to be studied. Reasons nursing students and new graduate nurses who are hesitant to disclose their learning difficulties need to be explored. Educators have advocated for early recognition of learning difficulties in students who are struggling to promote early referral to support services and maximize chances of success. A supportive, tolerant and inclusive culture in which students can expect empathy and understanding will improve likelihood of disclosure so that accommodations can be offered (Tee and Cowen, 2012).

Several strategies described by experts have not yet been studied, but may help guide practice. For example, Griffiths et al. (2010) promotes a proactive anticipatory approach to planning clinical practice for students with disabilities. In this model, disability experts, university faculty and key personnel from practice collaborate to design an individualized plan of support with reasonable adjustments. Six key phases of disclosure, establishing support, mid-placement review, development of plans for support, end of placement review, and revision of support strategy are suggested (Griffiths et al., 2010). Salkeld (2016) proposed a collaborative model called OPEL which incorporates the domains of openness, planning, evaluation, and learning to facilitate discussion and identification of solutions for difficulties as they are encountered (Salkeld, 2016). Strategies such as these should be further explored for replication and efficacy and to determine benefits for students.

Schools of nursing rely heavily on a preceptor model for undergraduate clinical education (Kalischuk et al., 2013; Rogan, 2009). Faculty should anticipate that students with learning difficulties may challenge their preceptors in many ways. Personnel from disability services, nursing faculty, and preceptors can collaborate to create an individualized plan of support and reasonable accommodations to enable the student to achieve competency. As such, it is important to understand how preceptors work with students with learning difficulties, a topic which has previously not been studied.

6. Conclusion

The current nursing shortage has resulted in many job openings. Nurse retention rates continue to fall and registered nurse vacancy rates have increased (Colosi, 2016). The recruitment of students with disabilities into nursing schools and an emphasis on disability awareness have been proposed to increase diversity in the workforce and enhance culturally competent nursing (Evans, 2013; Marks, 2007). The success of a student with a learning disability is highly dependent on the availability of accommodations, not the type of disability (Marks, 2007) and students with disabilities have found success with proper accommodations and support. Important strides have been made in education for people with disabilities, in large part because of federal mandates. Barriers need to be examined and removed for those who are interested in careers in nursing.

Nursing students with disabilities and learning difficulties who successfully complete the rigorous academic and clinical requirements of nursing school and national licensure exams have proven themselves to be intellectually capable and committed to contribute positively to the profession of nursing. Some of these individuals have relied on academic and/or clinical accommodations. Others have learned to successfully manage their learning difficulty without additional accommodations. Transition from nursing school to nursing practice can be stressful. Nurses may struggle with the change in environment, loss of support from faculty and peers, high expectations of other staff members, prioritization, and acquisition of organizational and new clinical skills. Although nursing education programs have been attempting to meet the needs of students with learning difficulties for

many years, those who educate students and nurses in hospitals may not be equally prepared.

Little is known about the perceptions towards those with disabilities or learning difficulties in clinical settings. Minimal literature exists regarding the state of readiness of hospitals and staff nurses regarding their awareness and ability to support the needs of students with learning difficulties. Educators must understand their role in supporting preceptors who agree to work with students with learning difficulties in clinical settings. Nursing faculty are in a position to bridge the gap from supportive academic settings to the clinical environment.

Conflicts of interest

None.

Acknowledgement

The author was a participant in the NLN Scholarly Writing Retreat, sponsored by PocketNurse and the NLN Foundation for Nursing Education.

References

- Azzopardi, T., Johnson, A., Phillips, K., Dickson, C., Hengstberger-Sims, C., Goldsmith, M., Allan, T., 2013. Simulation as a learning strategy: supporting undergraduate nursing students with disabilities. *J. Clin. Nurs.* 23, 402–409.
- Betz, C.L., Smith, K.A., Bui, K., 2012. A survey of California nursing programs: admission and accommodation policies for students with disabilities. *J. Nurs. Educ.* 51, 676–684.
- Buljevac, M., Majdak, M., Leutar, Z., 2012. The stigma of disability: Croatian experiences. *Disabil. Rehabil.* 34, 725–732.
- Child, J., Langford, E., 2011. Exploring the learning experiences of nursing students with dyslexia. *Nurs. Stand.* 25, 39–46.
- Colon, E.J., 1997. Identification, accommodation, and success of students with learning disabilities in nursing education programs. *J. Nurs. Educ.* 36, 372–377.
- Colosi, B., 2016. 2016 National Healthcare Retention & RN Staffing Report. NSI Nursing Solutions, Inc., pp. 1–13.
- Cortiella, C., Horowitz, S.H., 2014. 2014 third ed. *The State of Learning Disabilities: Facts, Trends, and Emerging Issues* Retrieved from National Center for Learning Disabilities website: <http://www.nclcd.org/types-learning-disabilities/what-is-ld/state-of-learning-disabilities>.
- Costello, C.A., Stone, S., L.M., 2012. Positive psychology and self-efficacy: potential benefits for college students with attention deficit hyperactivity disorder and learning disabilities. *J. Postsecond. Educat. Disabil.* 25, 119–129.
- Davidson, S., 1994. The Americans with disabilities Act and essential functions in nursing programs. *Nurse Educat.* 19, 31–34.
- Denhart, H., 2008. Perceptions of students labeled with learning disabilities in higher education. *J. Learn. Disabil.* 41, 483–497.
- Dudley, J.R., 2000. Confronting stigma within the services system. *Soc. Work* 45, 449–455.
- Dupler, A.E., Allen, C., Maheady, D.C., Fleming, S.E., Allen, M., 2012. Leveling the playing field for nursing students with disabilities: implications of the Amendments to the Americans with Disabilities Act. *J. Nurs. Educ.* 51, 140–144.
- Eliason, M.J., 1992. Nursing students with learning disabilities: appropriate accommodations. *J. Nurs. Educ.* 31, 375–376.
- Evans, W., 2013. Learn and support. *World Irish Nurs. Midwifery* 21, 24–25.
- Evans, W., 2014. "If they can't tell the difference between duplehalac and digoxin you've got patient safety issues". *Nurse Lecturers' constructions of students' dyslexic identities in nurse education. Nurse Educ. Today* 34, e41–46.
- Goffman, E., 1963. *Stigma: Notes on the Management of Spoiled Identity*. Prentice Hall, Englewood Cliffs NJ.
- Griffiths, L., Worth, P., Scullard, Z., Gilbert, D., 2010. Supporting disabled students in practice: a tripartate approach. *Nurse Educ. Pract.* 10, 132–137.
- Hargreaves, J., Walker, L., 2014. Preparing disabled students for professional practice: managing risk through a principles-based approach. *J. Adv. Nurs.* 70, 1748–1757.
- Hartman-Hall, H.M., Haaga, D.A., 2002. College students' willingness to seek help for their learning disabilities. *Learn. Disabil. Q.* 25, 263–274.
- Howlin, F., Halligan, P., O'Toole, S., 2014a. Development and implementation of a clinical needs assessment to support nursing and midwifery students with a disability in clinical practice: part 1. *Nurse Educ. Pract.* 14, 557–564.
- Howlin, F., Halligan, P., O'Toole, S., 2014b. Evaluation of a clinical needs assessment and exploration of the associated supports for students with a disability in clinical practice: part 2. *Nurse Educ. Pract.* 15, 565–572.
- Ijiri, L., Kudzma, E.C., 2000. Supporting nursing students with learning disabilities: a metacognitive approach. *J. Prof. Nurs.* 16, 149–157.
- Ikematsu, Y., Mizutani, M., Tozaka, H., Mori, S., Egawa, K., Endo, M., Yokouchi, M., 2014. Nursing students with special education needs in Japan. *Nurse Educ. Pract.* 14, 674–679.
- Kalischuk, R.G., Vandenberg, H., Awosoga, O., 2013. Nursing preceptors speak out: an

- empirical study. *J. Prof. Nurs.* 29, 30–38.
- Kolanko, K.M., 2003. A collective case study of nursing students with learning disabilities. *Nurs. Educ. Perspect.* 24, 251–256.
- Levy, T.I., 2001. Legal obligations and workplace implications for institutions of higher education accommodating learning disabled students. *J. Law Educ.* 30, 85–122.
- MacKay, T., 2009. Severe and complex learning difficulties: issues of definition, classification and prevalence. *Educ. Child Psychol.* 26, 9–18.
- Magilvy, J.K., Mitchell, A.C., 1995. Education of nursing students with special needs. *J. Nurs. Educ.* 34, 31–36.
- Maheady, D.C., 1999. Jumping through hoops, walking on egg shells: the experiences of nursing students with disabilities. *J. Nurs. Educ.* 38, 162–170.
- Marks, B., 2007. Cultural competence revisited: nursing students with disabilities. *J. Nurs. Educ.* 46, 70–74.
- May, A.L., Stone, C.A., 2010. Stereotypes of individuals with learning disabilities: views of college students with and without learning disabilities. *J. Learn. Disabil.* 43, 483–499.
- McPheat, C., 2014. Experience of nursing students with dyslexia on clinical placement. *Nurs. Stand.* 28, 44–49.
- Meloy, F., Gambescia, S.F., 2014. Guidelines for response to student requests for academic considerations: support versus enabling. *Nurse Educat.* 39, 138–142.
- Morris, D., Turnbull, P., 2006. Clinical experiences of students with dyslexia. *J. Adv. Nurs.* 54, 238–247.
- Morris, D.K., Turnbull, P.A., 2007. The disclosure of dyslexia in clinical practice: experiences of student nurses in the United Kingdom. *Nurse Educ. Today* 27, 35–42.
- Olofsson, A., Taube, K., Ahl, A., 2015. Academic achievement of university students with dyslexia. *Dyslexia* 21, 338–349.
- Persaud, D., Leedom, C.L., 2002. The Americans with Disabilities Act: effect on student admission and retention practices in California nursing schools. *J. Nurs. Educ.* 41, 349–352.
- Raue, K., Lewis, L., 2011. Students with disabilities at degree-granting postsecondary institutions. Retrieved from U.S. Department of Education, National Center for Education Statistics website. <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011018>.
- Ridley, C., 2011. The experiences of nursing students with dyslexia. *Nurs. Stand.* 25, 35–42.
- Roer-Strier, D., 2002. University students with learning disabilities advocating for change. *Disabil. Rehabil.* 24, 914–924.
- Rogan, E., 2009. Preparation of nurses who precept baccalaureate nursing students: a descriptive study. *J. Cont. Educ. Nurs.* 40, 565–570.
- Salkeld, J., 2016. A model to support nursing students with dyslexia. *Nurs. Stand.* 30, 46–51.
- Sanderson-Mann, J., Wharrad, H., McCandless, F., 2012. An empirical exploration of the impact of dyslexia on placement-based learning, and a comparison with non-dyslexic students. *Divers. Equal. Health Care* 9, 89–99.
- Sanderson-Mann, J., McCandless, F., 2005. Guidelines to the United Kingdom disability discrimination Act (DDA) 1995 and the special educational needs and disability Act (SENDA) 2001 with regard to nurse education and dyslexia. *Nurse Educ. Today* 25, 542–549.
- Sanderson-Mann, J., McCandless, F., 2006. Understanding dyslexia and nurse education in the clinical setting. *Nurse Educ. Pract.* 6, 127–133.
- Selekman, J., 2002. Nursing students with learning disabilities. *J. Nurs. Educ.* 41, 334–339.
- Shuler, S.N., 1990. Nursing students with learning disabilities: guidelines for fostering success. *Nurs. Forum* 25, 15–18.
- Snyder, T.D., Dillow, S.A., 2015. Digest of education statistics 2013. Retrieved from U. S. Department of Education, National Center for Education Statistics website: nces.ed.gov/pubs2015/2015011.pdf.
- Sowers, J., Smith, M.R., 2004a. Evaluation of the effects of an inservice training program on nursing faculty members' perceptions, knowledge, and concerns about students with disabilities. *J. Nurs. Educ.* 43, 248–252.
- Sowers, J., Smith, M.R., 2004b. Nursing faculty members' perceptions, knowledge, and concerns about students with disabilities. *J. Nurs. Educ.* 43, 213–218.
- Storr, H., Wray, J., Draper, P., 2011. Supporting disabled student nurses from registration to qualification: a review of the United Kingdom (UK) literature. *Nurse Educ. Today* 31, e29–33.
- Tee, S., Cowen, M., 2012. Supporting students with disabilities - promoting understanding amongst mentors in practice. *Nurse Educ. Pract.* 12, 6–10.
- Tee, S.R., Owens, K., Plowright, S., Ramnath, P., Rourke, S., James, C., Bayliss, J., 2010. Being reasonable: supporting disabled nursing students in practice. *Nurse Educ. Pract.* 10, 216–221.
- Tumminia, P.A., Weinfeld, A.M., 1983. Teaching the learning-disabled nursing student. *Nurse Educat.* 8, 12–14.
- Tumminia, P.A., Weinfeld, A.M., 1986. Survival strategies for the learning-disabled nursing student. *J. Read. Writ. Learn. Disabil. Int.* 2, 321–324.
- U.S. Department of Education, 2006. Building the Legacy: IDEA 2004.
- Watson, P.G., 1995. Nursing students with disabilities: a survey of baccalaureate nursing programs. *J. Prof. Nurs.* 11, 147–153.
- White, J., 2007. Supporting nursing students with dyslexia in clinical practice. *Nurs. Stand.* 21, 35–42.
- Whittemore, R., Knaf, K., 2005. The integrative review: updated methodology. *Methodol. Iss. Nurs. Res.* 52, 546–553.
- Wood, D., Marshall, E., 2010. Nurses with disabilities working in hospital settings: attitudes, concerns, and experiences of nurse leaders. *J. Prof. Nurs.* 26, 182–187.
- Wray, J., Aspland, J., Taghzouti, J., Pace, K., 2013. Making the nursing curriculum more inclusive for students with specific learning difficulties (SpLD): embedding specialist study skills into a core module. *Nurse Educ. Today* 33, 602–607.
- Wray, J., Aspland, J., Taghzouti, J., Pace, K., Harrison, P., 2012. Screening for specific learning difficulties (SpLD): the impact upon the progression of pre-registration nursing students. *Nurse Educ. Today* 32, 96–100.
- Wright, D., 2000. Educational support for nursing and midwifery students with dyslexia. *Nurs. Stand.* 14, 35–41.