

A Systematic Review of the Role of Gender in Securing and Maintaining Employment Among Youth and Young Adults with Disabilities

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Published online: 23 August 2017
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Abstract *Purpose* There is a critical need for gender-specific vocational supports for young adults with disabilities as they transition to employment. We conducted a systematic review to explore the role of gender in securing and maintaining employment. *Methods* Systematic searches of seven databases identified 48 studies meeting our inclusion criteria. Using a narrative synthesis approach, these studies were analyzed in terms of the characteristics of the participants, methodology, results, and quality of the evidence. *Results* Among the 48 studies, 112,473 participants (56% male), mean age (of the total sample) was 21, represented across ten countries. Twenty-one studies reported that young men with disabilities had better employment outcomes than women with disabilities. Eight studies showed that females with disabilities had better employment outcomes than males. Five studies reported that there were no gender differences in employment outcomes for youth with various disabilities. With regards to maintaining employment, men with disabilities often work more hours and have better wages compared to women with disabilities. There are several gender-related barriers and facilitators to maintaining employment including social supports and gender role expectations. *Conclusions* Our findings highlight that there is a critical need for

gender-specific vocational supports for young adults with disabilities.

Keywords Gender · Employment · Vocational rehabilitation · Youth · Adolescents

Introduction

Gender differences in employment is a significant ongoing issue, not only for youth with disabilities but for women of all ages and abilities [1, 2]. For example, despite significant progress in reducing gender inequalities in the labour market in the past several decades, gender gaps in employment rates persist [1–3]. Although women account for approximately half of the workforce, gender disparities in earnings are prevalent [4]. Within the general population there are gender differences in employment and earnings with women consistently earning less than men, even with equal performance levels [5, 6]. For example, women working full-time, year-round earned on average 19% less than male full-time employees [4, 7]. Further, women (of all abilities) continue to be over-represented in low-paid sectors, part-time, and temporary work [1].

Gender gaps in employment also affect young women with disabilities entering the workforce [7]. We draw on the World Health Organization's International classification of Functioning to inform our understanding of disability which is defined as impairment, activity limitation, participation restriction whereby a disability and functioning are shaped by interactions between health conditions and contextual factors [8]. Although women with disabilities have improved their educational outcomes, they have lower employment rates and earnings, and greater dependence on public support than men with disabilities [9]. Further, young women

Electronic supplementary material The online version of this article (doi:10.1007/s10926-017-9726-x) contains supplementary material, which is available to authorized users.

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with disabilities have lower participation in high-skilled jobs and work fewer hours per week than males with disabilities [7]. Women who have disabilities encounter a ‘double disadvantage’ in employment because they also often experience disability discrimination and other accessibility barriers [7] which restricts career development and limits employment opportunities [10]. Indeed, research shows that men with disabilities have a better chance of escaping poverty through employment than do women [9].

Those who have a disability often encounter additional hurdles, such as stigma, inaccessible jobs, and transportation difficulties while transitioning into the workforce [11–15]. As a result of the barriers that youth with disabilities encounter they are half as likely as their typically developing peers to be employed [11, 13, 16, 17]. The high unemployment rates for people with disabilities are largely a result of their talents and abilities being ignored and unacknowledged, rather than an unwillingness to work [11–13, 18]. For those who start life with a disability, disadvantages are compounded and can affect their ability to find and maintain employment [18, 19]. Exploring this age group is important because there is an enhanced focus on emerging adulthood, a distinct developmental period between ages 18–25 [19]. This period is characterized by instability, identity exploration, self-focus, and growth of executive functioning, which is critical for building employable and independence skills [19]. Therefore, this stage of development offers a vital chance to cultivate work-based identities [11–13, 18, 19]. Although there is a growing literature exploring the factors associated with employment for youth with disabilities and their experiences in securing work [11–13, 18–20] there is little consideration of gender.

Exploring the role of gender in youths’ transition to employment is important because gender influences the career aspirations of people with disabilities, how they cope with their condition, whether they engage in vocational training, and are successful in finding meaningful employment [21]. For example, women with disabilities are more likely to be unemployed [21, 22], to work fewer hours, in lower status occupations, and for significantly less pay than men with disabilities [10, 21–26]. Such employment-related gender gaps persist over time [10, 23].

Women with disabilities often lack career development opportunities and receive differential vocational rehabilitation services compared to men [26–29]. For example, females with disabilities are more likely to receive gender stereotypical occupational training compared to males with disabilities [30]. Women with disabilities also encounter specific difficulties in pursuing their career pathway including having poorer social and communication skills, lower family expectations, gendered role assumptions, decreased self-confidence and limited vocational training compared to males with disabilities [26, 31].

Although few studies directly explore the role of gender and employment for young people with disabilities [20, 32], several researchers argue that there is a critical need for gender-specific vocational supports for young adults with disabilities [33–38]. Thus, understanding the intersection between gender, disability, and employment is salient because differences in employment outcomes are significant for both men and women with disabilities compared to their typically developing peers [22, 39]. Investigating gender is important for decision-making, communication, stakeholder engagement, and uptake of interventions [40]. An enhanced understanding of this topic can help inform researchers, clinicians, and employers. A focus on gender is also relevant because many journals now require greater transparency and rigor in reporting of sex/gender to ensure that the results apply to everyone [40, 41]. Our aim is to systematically review the literature on the role of gender in securing and maintaining employment among youth and young adults with disabilities.

Method

Search Strategy and Data Sources

Our team conducted a comprehensive search of peer-reviewed published literature using the following databases: Ovid MEDLINE, JSTOR, CINAHL, PsychINFO, Business Source Premier, Sociological Abstracts, and Scopus. We searched for subject headings related to employment or looking for employment, including disclosure and accommodations and various types of disabilities, gender, and youth/young adults (see supplement for sample database search). Recognizing the methodological diversity of this literature, we did not exclude studies based on design. We did not implement language restrictions at the time of the search. We also manually examined the reference lists of all articles selected for review to identify additional articles for inclusion.

Article Selection

To select articles for this review, we applied the following inclusion and exclusion criteria. Eligible studies were: (1) youth and young adults aged 30 or under; (2) had a disability; (3) empirical research in a published, peer-reviewed journal between 1995 and 2016; and (4) had at least one finding related to gender and employment (i.e., defined as paid work). We excluded: opinion and non-empirical articles and dissertations, studies focusing on occupational injury, or risk of injury; articles focusing on others’ attitudes towards or perceptions of youths’ experiences, and studies that only

reported gender as a part of their participant characteristics and did not have gender-related findings.

Our search identified 48 articles for potential inclusion (see Fig. 1). After removing the duplicates four authors independently reviewed titles and abstracts (n = 7832). Full-text articles were obtained for 102 studies where we independently applied the inclusion criteria. Any discrepancies of which articles to include were resolved through re-reading the article and discussion. We maintained a log of inclusion and exclusion decisions to provide an audit trail.

Data Abstraction and Synthesis

The first author extracted all of the data from the included articles using a structured abstraction form (see Table 1). Four authors verified the abstracted data for accuracy. We

also noted limitations of each study and risk of bias. We synthesized our findings according to the guidelines for narrative synthesis by Petticrew and Roberts [42]. This method involves a structured interrogation and summary of all studies selected for inclusion. In the first stage, we organized the studies into logical categories to guide our analysis. We grouped studies by those that focused specifically on gender, those that had female-only and male-only samples, and those that had secondary findings related to gender. Then, we conducted a within study analysis by developing a narrative description of each study’s findings and quality [42]. The next stage involved a cross-study synthesis of the study findings, while considering variations in study design, quality, and sample diversity. Applying this method of data abstraction and synthesis is relevant for reviews that include diverse methodologies [43].

Fig. 1 Search process flow diagram

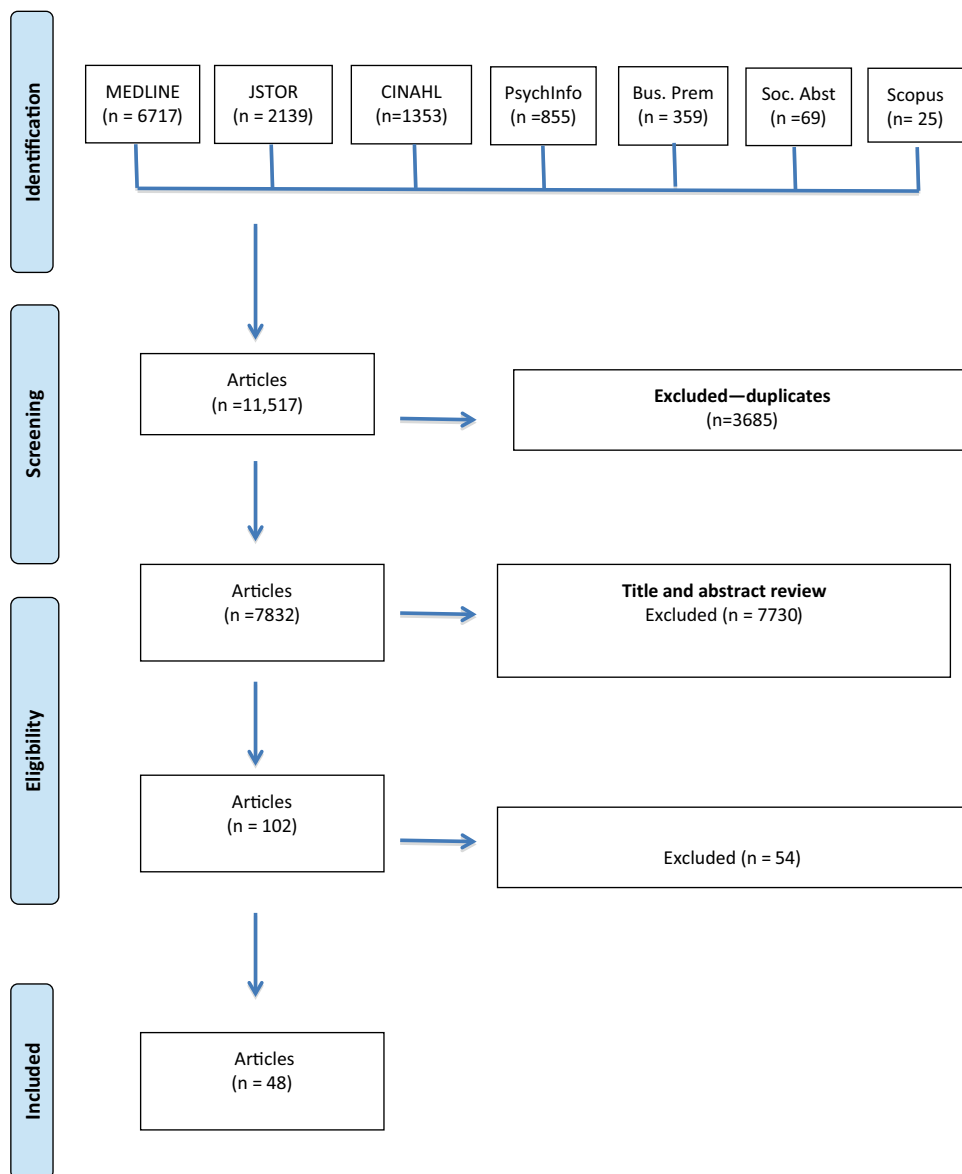


Table 1 Overview of studies

Authors, year (country)	Objective(s)	Sample population (% male)	Disability type ^a	Study design (theory)	Key findings ^a (gender and disability)	Limitations
Studies focusing specifically on gender						
Botuck et al. [23] (US)	To explore the socio-demographic variables associated with job-placement rates of individuals with severe learning disabilities	129 (aged 17–29; 56% males)	Severe learning disability	Survey (theory: n/a)	50% of the men and 1% of women were competitively employed within 6 months of their placement There is a lower work placement rate for women Educators and clinicians should prepare youth for their transition, especially girls earlier on	Small sample, limited generalizability
Coutinho et al. [24] (US)	To examine the extent to which outcomes were differentially associated with gender for students in special education	13,391 youth (mean age not specified; 48% males)	Various disabilities	Survey (secondary analysis) (theory: n/a)	Females were less likely to be employed compared to males Men earned more, worked more hours and Men reported aspirations that are more favorable to job satisfaction and work orientation	Self-report outcomes
Doren et al., [17] (US)	To examine the wage differentials based on gender over a 6-year post-school period for young adults with disabilities	521 (high school youth transition program; 66% males)	Various disabilities	Survey Secondary statistical analysis (theory: n/a)	Receipt of a high school diploma, employment at exit from vocational rehabilitation and successful placement and maintenance of employment resulted in significantly higher starting wages for men but not for women Women's starting wages were significantly less than men approximately (this wage gap persisted over 6 years) Obtaining a high school diploma and completing vocational rehabilitation did not have same benefits for women in terms of wages over time	Small sample, limited generalizability
Levine and Edgar (US)	To analyze gender differences in post-school outcomes for youth with learning disabilities	207 (70% males) high school youth ^a	Learning disabilities	Survey (theory: n/a)	Males with learning disabilities were employed and engaged at higher rates than females with learning disabilities Women with learning disabilities are more prone to single parenthood	Limited geographic location, small number of participants No data on income levels
Powers et al. [21] (US)	To examine gender differences in transition for youth with disabilities	242 (mean age 18.3; 42% males)	Various	Survey (theory: n/a)	Males and females differ in terms of the adult outcomes they hope to achieve Gendered stereotypes continue to exist (lower expectation for girls; parents concerned about safety and often discourage independence); men expected to live independently and get a job	Sample drawn from 2 districts and may not be representative Sample from mostly urban areas

Table 1 (continued)

Authors, year (country)	Objective(s)	Sample population (%) (male)	Disability type ^a	Study design (theory)	Key findings ^a (gender and disability)	Limitations
Schaller et al. [52] (US)	To examine differences in rates of case closure, worked and wages among males and females with ADHD	1687 (mean age 21; 74.3% males)	Attention deficit/hyperactivity disorder (ADHD)	Administrative database	Females had significantly higher case service costs (vocational rehabilitation) than males Service variables associated with successful employment for males were vocational rehabilitation counselling, job search assistance and job placement Factors associated with successful competitive employment for females was job search assistance	Secondary analysis Over-representation of males Non-probability sampling The variation in ADHD was not accounted for
Sung et al. [27] (US)	To examine the effects of gender differences in vocational rehabilitation service predictors on employment outcomes for youth with autism	1696 (aged 16–25; 50% male)	Autism	Secondary analysis of admin database (theory: n/a)	No significant difference between employment rates for males and females Gender independent vocational rehabilitation service predictors of employment included job placement and on-the-job support services Males and females with ASD encountered different barriers and facilitators to employment	Secondary analysis We do not know the disability severity, cognitive impairment, type of school attended Males represented at a disproportionate rate
Female-only samples						
Doren et al. [16] (US)	To evaluate the gender-specific career development curriculum for girls with disabilities	111 high school students (age not specified; 100% female)	Various disabilities (64% learning disabilities)	Pre-post control group design (social cognitive career theory)	Curriculum had significant gains in autonomy, gender-related knowledge, and social support Meaningful improvements were found in self-advocacy, autonomy and vocational outcome expectations	Small sample (under-powered to detect smaller but significant differences) Limited generalizability
Hogensen et al. [67] (US)	To examine the influence of gender on transition goals and experiences of females with disabilities	67 (aged 15–23; 100% female)	Various disabilities	Interviews and focus groups (theory: n/a)	Females with disabilities have unique experiences related to type of transition goals established for them; factors that shape transition goals and sources of support and impediments to transition There was a divide between youth and their parents and educators in terms of perceptions of what is attainable Parental overprotection	Small (non-representative sample)

Table 1 (continued)

Authors, year (country)	Objective(s)	Sample population (% male)	Disability type ^a	Study design (theory)	Key findings ^a (gender and disability)	Limitations
Lindstrom and Benz [68] (US)	To investigate the career development process for young women with learning disabilities	6 (100% females; mean age 20)	Learning disabilities	Case study/interviews (career development theory)	There are three distinct phases of career development: unsettled, exploratory and focused The phases of career development varied by stability of employment and clarity of career goals Factors influencing career development included motivation, self-determination, family support and advocacy, opportunities for career exploration, vocational training and a supportive work environment	Small sample size (likely didn't reach saturation)
Lindstrom et al. [68] (US)	To examine barriers and facilitators to career choice for young women with learning disabilities	6 (mean age 19.6; 100% females)	Learning disabilities	Case study interviews (theory: n/a)	Gender roles, disability, family, early work experience and career exploration influenced career choice Choice to enter a specific occupation resulted from a long-term decision-making process	Small sample
Lindstrom et al. [69] (US)	To explore the barriers and strategies needed to prepare young women with disabilities to succeed in post-secondary and the workforce	34 (mean age 22; 100% females)	Various	Interviews and focus groups (theory: n/a)	Barriers and supports included individual/interpersonal skills, career options, school system issues, disability needs	Non-generalizable sample (drawn from community colleges)
Lusk and Cook [20] (US)	To explore the effects of a career exploration intervention for girls with learning disabilities	60 (mean age 15; 100% females); 60 youth without disabilities ^a	Learning disabilities	Pre-post survey	Girls with disabilities who participated in the intervention had significantly better scores for career maturity and problem solving compared to girls without disabilities	Convenience sample
Mondejar et al. [58] (Spain)	To understand the socio-labour situation of women with disabilities in a rural area	220 (29.1% 18–29 years old; 100% females) ^a	Various disabilities	Survey (theory: n/a)	Those under 30 years old have the highest proportion of university graduates, vocational education, and lowest number of women with no education Women with disabilities encounter obstacles being incorporated into the labour market (family responsibilities, transport difficulties, architectural barriers; lack of job supports) Employment rate of women with disabilities is lower than those without disabilities women and men (with and without disabilities) in the region	Sample from one rural area

Table 1 (continued)

Authors, year (country)	Objective(s)	Sample population (%) (male)	Disability type ^a	Study design (theory)	Key findings ^a (gender and disability)	Limitations
Gender-specific study (male-only samples)						
Gibson et al. [64] (Canada)	To explore the intersection of gender, disability and emerging adulthood	11 (mean age 20; 100% male)	Duchenne muscular dystrophy	Audio diaries, photos, interviews (Bourdieu—habitus)	Disability, masculinities and life stage identities intersected through narratives of non-difference where participants worked to establish identities as typical guys Three men had unpaid work experience; the remainder were seeking steady paid employment They had challenges finding work (disability viewed as barrier by employers, transportation and fatigue) Work was seen as a form of social inclusion	Small sample size
Studies with secondary-related gender outcomes						
Anderson et al. [55] (US)	To assess the stability of independent living, employment and life satisfaction to determine factors associated with successful outcomes	136 (mean age 29; 69% male)	Spinal cord injury	Structured interviews (theory: n/a)	Gender (being female) is one of factors most predictive of stable employment	Sample drawn from 2 centers
Bellin et al. [47] (US)	To understand the interrelationships of sex, level of lesion, self-management, community integration and quality of life among young adults with myelomeningocele	50 (mean age 21.5; 44% male)	Myelomeningocele	Survey (theory: n/a)	Males were more likely to report employment but females had greater success in transitioning into independent living settings	Self-report measures Small sample size Broad age range
Bieszk-Stolorz [38] (Poland)	To explore factors related to economic activity of people with disabilities	321 (aged under 34; 50% male)	Various	Secondary (statistical analysis) of survey data (theory: n/a)	Gender, place of residence, education, age and disability severity were determinants of professional activity and employment Males aged 25–34, who were urban residents with university education were most likely to be professional active	Study did not focus specifically on gender
Blackorby and Wagner [25] (US)	To describe trends in employment, wages, and independence of youth with disabilities their first 5 years after high school	1815 (age 13–21; 62% male)	Various disabilities	Secondary (statistical analysis) of survey data (theory: n/a)	Males were significantly more likely than females to be high-wage earners 3–5 years after high school (44 vs. 23%) Young women were less likely to be employed Although young women in the general population were closing the gender gap in employment, the gap continued to widen among youth with disabilities Gender role differences suggest that a different set of transition planning is needed for young women compared to men	Did not focus specifically on gender

Table 1 (continued)

Authors, year (country)	Objective(s)	Sample population (% male)	Disability type ^a	Study design (theory)	Key findings ^a (gender and disability)	Limitations
Boman et al. [39] (Sweden)	To compare occupational attainment of persons with disabilities	3396 ^a (aged 20–29; 49% male)	Various	Survey (theory: n/a)	Men with disabilities with primary or secondary school had an occupation above their educational level to a significantly larger extent than women with disabilities Young women with disabilities who only have primary or secondary education are at a higher risk of having a job below their educational level compared to men	Operational definition of occupational attainment was simplified (3 categories) Did not specify age at disability onset Lack of information on impaired work ability
Breslin et al. [63] (Canada)	To examine the contribution of individual factors, job characteristics and temporal factors to the likelihood of lost days of work due to work-related disability or illness	45,125 (16–24 years old; 48% male)	Various work-related disabilities	Survey (secondary analysis) (theory: n/a)	Gender was not independently associated with work disability absences Young males had a higher unadjusted work disability rate than female workers which may indicate that gender differences in work injury are due to differences in hazard exposure, physical job demands and work pace/pressure	Potential bias with varying definitions of work disability and different recovery times Gender differences in what is considered a disability and willingness to take absences may have diminished gender differences
Chiang et al. [57] (US)	To identify the factors associated with participation in employment for high school leavers with autism	4167 (mean age; 21; 84.6% male)	Autism	Survey (theory: n/a)	56% participated in employment since leaving high school Compared to female high school leavers with autism, male high school leavers with autism are 0.34 times less likely to participate in employment	Secondary analysis Duration of employment unknown
Eng et al. [42] (US)	To explore employment outcomes after renal transplantation	11 ^a (aged 18–29; 56% male)	Renal transplant	Survey (theory: n/a)	Male gender and younger age was linked with favorable employment outcomes	Small sample of younger participants Self-report data
Fabian [26] (US)	To examine what factors impact youth getting jobs; and the nature of the jobs that youth are getting	4349 (mean age 18.2; 59% male)	Various disabilities	Survey (theory: n/a)	Gender, previous vocational experience and receiving social security benefits were significant predictors of employment Girls secured jobs at a significantly lower rate than boys	Self-selected students who completed the program
Foy [43] (UK)	To determine the pre-and post-injury factors associated with vocational outcomes from mixed therapy residential program	119 (mean age at injury 21.07; 44% male)	Acquired brain injury	Survey (theory: n/a)	Vocational outcome was predicted by cognitive and motor ability at discharge and gender 53% had a positive vocational outcome Vocational rehabilitation for males should be tailored more specifically	Sample is not representative of the wider population with ABI Many youth were returning to school rather than employment

Table 1 (continued)

Authors, year (country)	Objective(s)	Sample population (% male)	Disability type ^a	Study design (theory)	Key findings ^a (gender and disability)	Limitations
Gerhardt et al., [59] (US)	To examine the educational and occupational outcomes for youth with juvenile idiopathic arthritis compared to peers	45 youth (mean age 18.74; 27% male)	Juvenile arthritis	Survey (theory: n/a)	Women with Juvenile Idiopathic Arthritis reported poorer self-concept in relation to job competence than men with Juvenile arthritis and typically developing women Primary educational and occupational outcomes (e.g., high school graduation, having a job, future goals) did not vary as a function of group and sex	Small number of participants who had severe forms of arthritis Small sample size
Gold et al. [41] (US)	To explore if socio-demographic characteristics, special education placements, work history and program year predict employment outcomes	5847 (mean age 18.6; 59% male)	Various disabilities (78% learning disability)	Survey (theory: n/a)	Job placement rates for females with disabilities were 4.6% lower than males Young women with disabilities were less likely to get a job compared to men	Most participants had a learning disability (limited generalizability)
Holwerda et al. [48] (Netherlands)	To investigate which factors predict work participation, finding and maintaining work	563 (aged 15–27; 71% male)	Autism and attention deficit disorder	Cohort study (theory: n/a)	Being male (for those with ADD) predicted maintaining work 76.5% of females and 65.5% of males were unemployed; 20% of males were finding work compared to 16.7% of females; 14.7% of males were maintaining employment compared to 6.8% of females Males were 1.62 times more likely to find work compared to females	Did not know whether they were still in school Work outcome was measured quarterly
Kaya et al., [68] (US)	To investigate the extent to which demographic characteristics, social security benefits and vocational rehabilitation services influence competitive employment for youth with autism	4322 (aged 16–25; 85% male)	Autism	Case reports (theory: n/a)	Gender was not associated with competitive employment outcomes	Majority of sample was male Secondary data analysis Did not incorporate the severity of the ASD
Klein and Hood [56] (US)	To explore the impact that stuttering has on job performance and employability	38 ^a (aged 18–29; 71% male)	Stuttering	Survey (theory: n/a)	70% of people who stutter thought that stuttering decreased chances of being hired or promoted 33% of people thought stuttering interfered with job performance Men were more likely to view stuttering as handicapping than were women	Small representation of younger people in their sample Sample was drawn from a support group of people who stutter

Table 1 (continued)

Authors, year (country)	Objective(s)	Sample population (% male)	Disability type ^a	Study design (theory)	Key findings ^a (gender and disability)	Limitations
Kulkarni and Lengnick-Hall [62] (India)	To explore how people with disabilities viewed their socialization process within the workplace	31 (mean age 22; 65% male)	Various (visual impairments, limb amputation)	Interviews (theory: n/a)	Integration was influenced by co-workers and supervisors Organizational practices and employee proactive behaviours were less important More men with disabilities than women indicated they were proactive in terms of obtaining training to make themselves employable More men indicated that having co-workers with a disability helped them during socialization	Small, non-representative, heterogeneous sample
Lindsay [1] (Canada)	To explore the characteristics associated with being employed and how this varies from teen years to young adulthood	2534 (15–24 years old; 42.5% males)	Various	Survey (secondary analysis) (theory: n/a)	Gender did not predict employment for youth aged 15–19 years A higher proportion of women with mobility impairments were employed compared to men in 20–24 year olds not 15–19 year olds	Secondary analysis
Lindsay et al. 2011b (Canada)	To explore the barriers to employment for teens and young adults with disabilities; and to understand the characteristics of teens and young adults that experience barriers and discrimination	1898 (aged 15–24 years; gender composition unspecified specified)	Various	Survey (secondary analysis) (theory: n/a)	Significantly more women than men reported family responsibilities were a barrier to being employed Men were more often refused a job interview compared to women Significantly more men were paid less than women for doing similar jobs Men with lower income, mobility issues, living in rural areas, and those having disability for longer than 10 years reported lack of jobs as a barrier to employment	Secondary analysis
Lindstrom et al. [65] (US)	To examine the career development process and post-school employment outcomes of youth with disabilities who were working in living wage occupations	8 (mean age 26.6; 50% male)	Various (half with learning disabilities)	Case study interviews (theory: n/a)	More of the women did not work full time; had more chaotic patterns of career development with longer periods of unemployment and part time work because of health issues, family obligations or workplace constraints Men had more linear patterns of career development Females who were successful in living wage occupations had supports and skills that distinguished them from men Females had stronger relations with families	Small sample, various disabilities

Table 1 (continued)

Authors, year (country)	Objective(s)	Sample population (% male)	Disability type ^a	Study design (theory)	Key findings ^a (gender and disability)	Limitations
Magill-Evans et al. [12] (Canada)	To identify personal, factors that facilitate or hinder employment	76 (mean age 25; 46% male)	Cerebral palsy and spina bifida	Survey and interviews (theory: n/a)	Women were significantly less likely to be employed Having a lower IQ and being a woman resulted in under-employment Issues related to gender need to be considered when addressing employment inequities for people with disabilities	Small sample, limited generalizability
Mechelen et al. [46] (Netherlands)	To assess the work participation among young adults with spina bifida	136 (mean age 26; 56% male)	Spina bifida	Survey (theory: n/a)	64% of the working males and 24% of the working females were in full-time employment (more likely to be working full time) The difference in work participation between the sexes appears to be higher in spina bifida patients (females need more support)	Low response rate
Migliore et al. 2012 (US)	To predict employment outcomes of youth with autism	2913 (mean age 19; 84% male)	Autism	Secondary statistical analysis (theory: n/a)	Strongest predictors of weekly work hours were post-secondary education, being a male	Majority of participants were male
Murphy et al. [54] (US)	To determine long-term psychological distress and quality of life in young adult survivors of pediatric burns	50 (aged 16–21; 56% male)	Pediatric burn survivors	Survey (theory: n/a)	Female burn survivors and adolescents who had yet to transition into adulthood reported better quality of life than their counterparts Males need a longer-term psychosocial intervention	Small sample
Myklebust and Batevik [13] (Norway)	To examine circumstance that influence the economic independence over time	216 (60% men; aged 27–28)	Various	Survey; secondary analysis (theory: n/a)	Women with vocational or academic competence have 5 times greater chance of economic independence Men have a 6 times greater chance of being economically independent than woman Education has no impact on men being economically independent Having a driver's license significant impact on economic independence of men across both age ranges	Assessors may not have applied the same criteria to all disability types Low response rate
Nagarajan et al. [50] (US)	To describe the psychosocial outcomes for lower extremity bone tumors	694 (50% male; mean age 29.8)	Bone tumors	Cohort study survey (theory: n/a)	Amputation status and age at diagnosis did not significantly influence psychosocial outcomes Education was a significant positive predictor of employment Male gender predicted employment and female gender predicted having health insurance and marriage	Ascertainment bias Limited number of participants in certain sub-groups

Table 1 (continued)

Authors, year (country)	Objective(s)	Sample population (% male)	Disability type ^a	Study design (theory)	Key findings ^a (gender and disability)	Limitations
Olson et al. [45] (US)	To examine whether gender plays a role in supported employment of people with cognitive impairments	227 (aged 18–30; 41.9% male) ^a	Cognitive impairments	Survey (theory: n/a)	Women were perceived as being more socially appropriate on several dimensions, they worked in jobs traditionally stereotyped by gender Women worked fewer hours than men and earned less money	Non-random sample and may not be representative
Pang et al. [49] (US)	To examine the prevalence and risk factors for unemployment among childhood cancer survivors	5623 (aged 18–29; 55% male) ^a	Cancer survivors	Cohort study (theory: n/a)	Cancer survivors who were younger, female, non-white, unmarried, had less than a high school education and did not have children were less likely to be employed Female cancer survivors had a sixfold increased risk of never having been employed	Did not specify differences by type of cancer
Park et al. [14] (Korea)	To examine the factors affecting employment	32 (55% men; aged 15–29) ^a	Mobility disability (limbs, spinal cord or motor dysfunction)	Survey (theory: n/a)	Women with a disability have more difficulty obtaining employment Age, level of education and cohabitation did not influence employment of those with physical disabilities	Small sample of younger youth within the larger survey Sampled one site (limited generalizability)
Poppen et al. [44] (US)	To examine vocational rehabilitation data to identify predictors of positive closure status for youth with disabilities	4443 (61% male; mean age 18.6)	Various	Administrative vocational rehabilitation database	Females from all disability groups are significantly less likely to enter the labour market Being female, having a mental illness, traumatic brain injury, multiple disabilities, interpersonal or self-care impediments to employment, receiving social security and closing with vocational rehabilitation in periods of high unemployment reduce the likelihood of positive vocational rehabilitation	Secondary analysis 51% of vocational rehabilitation clients under 21 do not complete vocational service plans
Rabren et al. [43] (US)	To examine the employment status of special education students	505 (60% male; aged 14–21)	Various	Survey (theory: n/a)	73% of males had a job compared to 27% of females Significant probability of being employed for males Females with a disability other than a learning disability from rural areas need more transition support	Sample selected from sites recognized for their best transition practices (possible bias) Low response rate
Strauser et al. [66] (US)	To investigate the association of vocational services on work in young cancer survivors	368 (mean age 21.4; 57% male)	Cancer survivors	Analysis of admin database (theory: n/a)	Women were more likely to be employed after receiving vocational rehabilitation services (1.79 times greater likelihood) Vocational services may be beneficial to young women entering the labour market	Secondary analysis of administrative database Various types of cancers included

Table 1 (continued)

Authors, year (country)	Objective(s)	Sample population (% male)	Disability type ^a	Study design (theory)	Key findings ^a (gender and disability)	Limitations
Wagner et al., [15] (US)	To determine how socioeconomic status of youth with disabilities predicted the likelihood of employment	4,040 youth (aged 21–25; % men not reported)	Various	Survey (theory: n/a)	Being male was positively associated with graduation from high school, college enrollment and competitive employment and negatively associated with career and training enrollment	Self-reported data Did not provide gender composition of the sample
Villanueva-Flores et al. [37] (Spain)	To understand the situation of employees with physical disabilities from the perspective of human resources management	178 (mean age 20–35; % male not reported)	Physical disabilities	Survey (organizational justice)	Perceived discrimination is due to inequity when peers without disabilities are used as a comparative reference. This relationship is not moderated by gender	Gender composition of the sample not reported Sample from one area

^aOnly the findings related to the objectives of this review focusing on understanding the role of gender on employment for youth (16–30 years) with disabilities were reported

Methodological Quality Assessment

Our findings and recommendations for further development of gender-informed vocational rehabilitation and programming are based on the overall strength and the quality of the evidence reviewed. Quality assessments based on Kmet's [44] standard quality assessment criteria were used. Four authors independently applied a 14-item checklist for quantitative studies and a 10-item checklist for qualitative studies [44]. A total score for each study was derived indicating the overall strength of the evidence (see Supplemental Table). No studies were excluded based on quality. We also followed the Preferred Reporting Items for Systematic Reviews (PRISMA), a method of transparent reporting [45].

Results

Forty-eight articles met the inclusion criteria for this review, representing 112,473 participants. Thirty-three studies were conducted in the US, five in Canada, two in the Netherlands, two in Spain, and one each in South Korea, India, Norway, Poland, Sweden, and the UK (see Table 1). Thirty-eight had quantitative designs (mostly surveys), eight had qualitative, and two had mixed methods. Sample sizes ranged from 6 to 45,125 participants (56% male) and mean age of the total overall sample (both males and females) was 21. It is important to note that two studies [25, 46] did not report the gender composition of their sample. Twenty-one studies included various types of disabilities, while others focused specifically on learning disabilities (5), autism (5), cerebral palsy and spina bifida (3), cancer survivors (2), and one each on: Duchenne muscular dystrophy (DMD), renal transplant, brain injury, spinal cord injury, juvenile arthritis, stuttering, burn survivors, bone tumors, cognitive impairment, attention deficit/hyperactivity disorder, mobility disability, and physical disability. Of the four studies that incorporated a theoretical framework, they included social cognitive career theory, career development theory, habitus, and organizational justice. Fifteen studies focused specifically on gender and employment, seven of which had female-only samples and one had a male-only sample. Thirty-three articles had gender-related findings that were a secondary focus of their study.

Outcomes and Study Findings

Securing Employment

Twenty-one studies reported that young men with disabilities had better employment outcomes than women with various types of disabilities [25, 26, 32–35, 47–53] and also specific disability types including learning disabilities [54],

cerebral palsy [22], spina bifida [55, 56], autism [57], cancer [58, 59], and mobility disabilities [24]. For example, Black-orby and Wagner [34] found that males with various types of disabilities were significantly more likely than females with disabilities to be employed and were also high wage earners 3–5 years after high school [34]. Others also found that young males with various types of disabilities, with a university education were most likely to be professionally active [47]. Park [24] similarly reported that women with mobility disabilities have more difficulty obtaining employment compared to males.

Employment rates for males with disabilities ranged from 50 to 76.5% compared to 1–27% for females with disabilities [32, 50, 55, 57, 58]. For example, Botluck et al. [32] found that 50% of men and 1% of women with learning disabilities were competitively employed within 6 months of their job placement. Meanwhile, among youth with spina bifida, Van Mechelen et al. [55] found that males with spina bifida were significantly more likely to be working full-time compared to females (64 vs. 24%). Magill-Evans [22] similarly reported that women with cerebral palsy and spina bifida were less likely to be employed compared to men. Holwerda et al. [57] found that among youth with autism or attention deficit/hyperactivity disorder 76.5% of females and 65.5% of males were unemployed and that males were 1.62 times more likely to find work compared to females [57]. Gold [50] likewise found that job placement rates were 4.6% lower for females with various types of disabilities than males. Rabren [52] found that 73% of males with various types of disabilities had a job compared to 27% of females. Meanwhile, female childhood cancer survivors were less likely to be employed compared to males with a six-times increased risk of never having been employed [58].

Two studies highlighted that having a high school diploma and completing vocational rehabilitation training did not have the same benefits for women with various types of disabilities as it did for men [26, 48]. Boman's [48] study also showed a similar trend where men with various types of disabilities with secondary school education had an occupation above their education level to a significantly larger extent than women with disabilities [48]. Similarly, Schaller et al. [60] found that women had higher levels of education than males, yet they worked fewer hours and earned less per week than males.

Eight studies found that females with disabilities had better employment outcomes than males. This trend was the case for youth with acquired brain injury [61], burn survivors [62], spinal cord injury [63], stuttering [64], mobility impairments [11], autism [36, 65], and various disability types [23]. For example, among burn survivors, females reported better quality of life, including work-related life activities compared to males [62]. Male burn survivors needed longer-term psychosocial interventions to help

improve quality of life and work-related outcomes [62]. For young adults with an acquired brain injury, being female was a predictor of positive vocational outcomes [61]. Klein and Hood [64] found that men who stutter were more likely to view their condition as a factor hindering employment opportunities compared to women. Further, for women aged 20–24 years with mobility impairments, a higher proportion were employed compared to men [11]. Being female was also a predictive factor of stable employment among young adults with spinal cord injury [63]. Myklebust and Batevik [23] found that women with various types of disabilities with vocational or academic competence had a five times greater chance of having permanent full-time work compared to men. They also reported that having a driver's license had a significant impact on the economic independence of men and that level of education did not, while the reverse was true for women [23].

In a study with a female-only sample, Doren et al. [10] evaluated a gender-specific career development program for females with various types of disabilities and found that their vocational curriculum led to significant gains in autonomy, gender-related knowledge, social support, and vocational outcome expectations [10]. Mondejar-Jimenez [66] explored various types of disabilities with a female-only sample and found that they had the highest proportion of university graduates compared to typically developing women in the region.

Similar trends of females having better employment outcomes than males were found among youth with autism. For example, Chiang et al. [65] reported that compared to females with autism, males were less likely to participate in employment after high school. Another study focusing on autism found that having co-occurring anxiety or depression alongside autism among males was a deterrent to employment [36]. Sung [36] explained that males and females with autism spectrum disorder (ASD) had different barriers and facilitators to securing employment. Gender-specific predictors of employment included vocational rehabilitation counseling, guidance, and job search assistance [36].

Five studies reported that there were no gender differences in employment outcomes for youth with juvenile arthritis, physical disabilities, and autism [11, 12, 36, 60, 67, 68]. For example, Kaya [68] found that gender was not associated with competitive employment outcomes among youth with autism. Sung et al. [36] similarly reported no significant differences in employment rates between males and females with autism. Schaller et al. [60] found that both males and females with ADHD had the same rates of employment after receiving vocational rehabilitation services. Among youth aged 15–19 with disabilities, Lindsay [11] found that gender did not predict employment outcomes. An important finding in Villanueva-Flores' [46] study was that gender did not influence differences in perceived workplace discrimination,

suggesting that it was experienced to a similar extent for both males and females.

Maintaining Employment

Six studies focused on aspects related to maintaining employment. For example, four studies found that men with disabilities worked more hours, and had better wages than women with disabilities [10, 26, 33, 54, 68, 69]. Coutinho et al. [33] reported that men with various types of disabilities worked more hours, earned more, and received more benefits than women with disabilities. They also found that men reported aspirations that were more favorable to job satisfaction and work orientation than women [33]. Among females with cognitive impairments, Olson [54] found that they worked fewer hours and earned less compared to men with cognitive impairments. Doren [26] similarly found that men with various types of disabilities had higher starting wages than women and that this wage gap persisted even after a 6-year follow-up.

Meanwhile, among youth with autism, Miligore et al. [69] found that being a male with autism was a strong predictor of number of hours worked. Among youth with attention deficit/hyperactivity disorder, being male predicted maintaining work [57] where 14.7% of males were sustaining employment compared to 6.8% of females. Kulkarni [70] reported a similar trend where they found that more men with various disabilities were proactive in terms of seeking out training to make themselves employable than women.

Ten studies reported on gender-related barriers to maintaining employment. For example, Breslin et al. [71] found that males had a higher work disability rate than females, which may be a result of differences in hazard exposure, physical job demands, and work pace. Klein [64] noted a gender difference among young people who stutter whereby more men thought their condition interfered with job performance than women. Meanwhile, males with DMD expressed that impairment effect, accessibility barriers, and discrimination created difficulties for employment [72]. Magill-Evans et al. [22] found that having a lower IQ and being a woman resulted in under-employment for individuals with cerebral palsy and spina bifida. Powers et al. [30] discovered that females with disabilities experienced gender-related barriers to employment such as being less likely to have paid jobs, lowered expectations from others, and overprotection from parents discouraging independence. Significantly higher case service costs for females with ADHD accessing vocational rehabilitation services have been noted as a potential barrier to their finding and maintaining employment [60].

Other barriers that affected youths' ability to maintain employment were associated with gender roles. For example, Levine and Edgar [49] highlighted how women with learning disabilities were more prone to single parenthood

which impacted their engagement in employment. Lindsay [11] found that significantly more women with disabilities mentioned that family responsibilities were a barrier to employment compared to men with disabilities. Lindstrom [73] described that more women with disabilities did not work full-time and had chaotic patterns of career development with longer periods of unemployment because of health issues, family obligations, or workplace constraints, while men had more linear patterns of career development. Having a poor self-concept was another barrier affecting job competence [67]. For example, Gerhardt et al. [67] found that women with juvenile arthritis had poorer self-concept in relation to job competence than men with juvenile arthritis and typically developing women.

Mondejar et al. [66] also had a female-only sample and explored the socio-labour situation of women with disabilities in a rural area of Spain. They reported that women with disabilities encounter obstacles being incorporated into the labour market such as: family responsibilities, transportation difficulties, architectural barriers, and lack of job supports, which reflect the economic and infrastructural challenges of rural areas. Women also reported poor quality of information regarding work topics, and lack of help with job seeking and obtaining assistance or grants [66].

Ten studies highlighted gender-related facilitators to maintaining employment. For example, having social supports was beneficial for both males and females [69]. Education was also seen as a facilitator for obtaining and maintaining employment for both males and females [59, 69]. Doren et al. [26] found that vocational rehabilitation counselling was found to be a facilitator for men, whereas Strauser et al. [74] found it as a facilitator for women. Lindstrom [73] described that females with various disabilities who were successful in finding employment had supports, especially stronger family relations, and skills that distinguished them from males [73]. Meanwhile, Klein [64] found that more men with various types of disabilities indicated that having co-workers with a disability helped them to socialize with co-workers and acclimatize to their workplace. Further, women with cognitive impairments were perceived as more socially appropriate than males on several job dimensions such as aggression, sexual behavior, and hygiene [54]. Among youth with ADHD factors that were associated with successful employment for males were vocational rehabilitation counselling, job search assistance, and job placement [60]. Meanwhile, for females with ADHD the only factors associated with successful competitive employment was job search assistance [60].

Myklebust [23] found that having a driver's license was a facilitator to employment for men, while academic competence was a facilitator for women. Sung [36] found that vocational rehabilitation counselling, guidance, and job search assistance was a facilitator to employment specifically for

males with ASD. Schaller [60] noted that factors for successful employment for women with ADHD included job search assistance, whereas for men it was vocational rehabilitation counselling, job search assistance, and job placement.

Powers et al.'s [30] study showed that males and females with disabilities differed in the employment outcomes they hoped to achieve. They discovered that gendered stereotypes persist, with females encountering lowered expectations and parental overprotectiveness, while males often expected to live independently and secure employment [30].

Qualitative Experiences

Eight studies [7, 22, 70, 72, 73, 75–77] used a qualitative approach to explore gender and employment among youth with disabilities. Lindstrom and Benz [76] found that among young women with learning disabilities they had three distinct phases of career development including unsettled, exploratory, and focused. These stages varied by the stability of employment and clarity of career goals. Factors influencing career development included motivation, self-determination, family support and advocacy, opportunities for career exploration, vocational training, and supportive work environments [77]. In a follow-up study, Lindstrom et al. [7] found that gender roles, disability, family expectations, early work experience, and career exploration influenced career choice. Supports that are needed to prepare young women with disabilities in the workforce included individual and interpersonal skills, career options, school system issues, and disability needs [76]. Lindstrom et al. [73] found that men with disabilities had more linear patterns of career development, while women were much less likely to work full-time or continuously during their transition years.

In Hogansen et al.'s [75] study with a female-only sample with various types of disabilities, they highlighted that females have unique experiences related to transition goals and sources of support. Women emphasized the importance of others believing in and supporting them in their employment goals, and reportedly often stayed silent in transition planning meetings and events for fear of social rejection. Females often encounter parental overprotection which can hinder engagement in employment [75].

Only one study [72] in our review had a male-only sample in their exploration of gender, disability and transition to adulthood among youth with Duchenne muscular dystrophy. They found that disability, masculinities, and life stage identities intersected through narratives on non-difference where young men worked to establish identities as 'typical' men. They found that young men had challenges finding work, especially with managing fatigue. Disability was viewed as a barrier by employers. Youth reported that they

saw employment as a form of social inclusion even though most of the men were unemployed [72].

Quality Appraisal and Limitations of this Review

We noted several limitations among the articles that were included in the review. Four authors independently rated each study. The overall scores for quantitative studies ranged from 0.36 to 0.86 (mean 0.79) (see Supplemental Table). For the qualitative studies, scores ranged from 0.6 to 0.95 (mean 0.78). In regards to inter-rater agreement, reviewers assigned the same overall score to 84% of the studies. For the remaining studies, discrepancies in the overall scores ranged from 0.2 to 0.4. Most discrepancies reflected differences in the applicability of certain items regarding yes versus partial fulfilment of specific criteria. Any items that had discrepancies were discussed until consensus was reached. Areas where some of the quantitative studies scored lower were for not fully explaining their analysis, having an estimate of variance, or controlling for confounding factors. Areas where some of the qualitative studies scored lower included not having a theoretical framework, inadequately describing their sampling strategy or data analysis and lacking a description of their reflexivity account.

Although the limitations of each of the studies are reported in Table 1, we have highlighted several common issues here. First, most of the studies included various types of disabilities which could potentially mask any gender differences. It will be important for future studies to focus on specific disability types while also accounting for condition severity and age of disability onset. Second, the gender composition of the samples ranged considerably and thus, caution should be used when interpreting the findings. Third, most of the studies sampled from only one location and there is limited generalizability of the findings. The sample sizes of some of the qualitative studies were also small and may not have reached thematic saturation. Fourth, most of the quantitative studies focused on employment outcomes and we know little about youths' actual experiences within the workplace (e.g., types of employment, working conditions, extent of inclusion). Future research should explore this further. Fifth, gender roles and expectations regarding employment vary by culture, and also over time. Our review included studies from ten countries over a 20-year time period and thus, it is important to consider the diversity of gender role expectations.

A limitation of our review includes that not all studies contributed equally to the overall findings, which we noted in Table 1. Some studies focused specifically on gender and employment, while for others it was a secondary focus. Further, we included a broad range of types of disabilities and it was difficult to make conclusions across various conditions. We felt it was important to include all relevant studies to

develop a comprehensive understanding of the role of gender in employment among youth with disabilities. Second, we only included published, peer-reviewed articles. Future reviews could consider grey literature and dissertations.

Discussion

This systematic review explored the role of gender in securing and maintaining employment among youth with disabilities over a 20-year period. Exploring gender is important because women of all abilities and ages continue to lag behind men in terms of employment outcomes and wages [7, 10]. Further, gender shapes how youth engage in vocational rehabilitation and whether they secure employment [21]. The majority of the studies in our review showed that young men with disabilities had better employment outcomes than women with disabilities. This pattern is consistent with the literature on adults with disabilities where women with disabilities are often viewed as being multiply disadvantaged and compared to men with disabilities regarding employment outcomes and salary [78]. Such trends could be due to differences in vocational services and training opportunities [26, 27]. Females with disabilities often lack career development opportunities and are more likely to receive gender stereotypical job training compared to males with disabilities [30]. Such gendered patterns can be problematic, leading to poor employment outcomes and/or low-wage jobs [7, 28]. Our review highlighted that women with disabilities also encounter different challenges than men such as lowered family expectations, poorer self-confidence, and communication skills [10, 31].

Some studies within our review reported that females with disabilities had better employment outcomes than males for certain disability types such as acquired brain injury [61], ASD [65] burn survivors [62], spinal cord injury [63], stuttering [64], and mobility impairments [11]. These gender differences may be partly a result of the nature of the disability (i.e., age at onset, severity, etc.), coping strategies, willingness to ask for help, disclose their conditions, and/or request workplace accommodations [11, 12].

There are several possible explanations why females had better employment outcomes than males. First, with ABI, burn survivors, and spinal cord injury—participants in these studies could have had varying degrees of employment experience before their injury. Second, it could be that females within these samples had milder forms of disability. Moreover, the severity of the injury/condition was often not broken down by gender. Thus, it is difficult to discern if the was gender alone impacting employment or some interaction effect with other factors. Third, in Lindsay's study [79], more males reported being refused a job interview compared to females, suggesting more stigma/discrimination

than females. Fourth, in regards to stuttering [64], women perceive stuttering to be less handicapping than do men. Therefore, they may have had higher self-esteem to seek employment than men [64]. Fifth, many of these studies had small, non-representative, and gender inequitable samples. In the case of Foy's [61] study, their sample comprised more females even though ABI is more common among males. Further, many youth within their study were returning to school rather than going into employment which may have affected employment outcomes [61]. Meanwhile, Klein's study [64] had an over-representation of males (71%) and their sample had a small representation of younger people.

Our findings may highlight the importance of exploring specific types of disability when understanding the role of gender and employment. Further, it is important to note, however, that most of these aspects were not explored in the studies that we reviewed and are areas that deserve attention in future studies. Research shows that females are often comfortable asking for help while males tend to have less favorable attitudes towards help-seeking [80, 81]. Future studies should carefully consider the role of education (i.e., high school completion versus post-secondary completion) when exploring gender, disability, and employment.

Our review showed that gender-related barriers to maintaining employment among youth with disabilities included differences in work injury, physical demands, and work pace for males [71]. These findings are consistent with other research showing that youth with disabilities have slower performance in basic job demands like strength and fine motor skills than youth without disabilities [82]. Females often have issues with poor self-concept, and parental over-protection [30, 75]. For example, a survey of 521 youth with disabilities and parents found that 56% of respondents noted that girls are more likely than boys to be told they must refrain from an activity because it is unsafe [30, 75]. Over-protection of females with disabilities [18, 30, 75], is common and may hinder the development of independent skills that they need to gain employment. Gender role expectations of females often included spending more time on family responsibilities which can be seen as a barrier to gaining and maintaining employment. Such gender role differences and expectations suggest that a different set of transition planning is needed for young women with disabilities compared to men [34]. It was noteworthy that none of the studies mentioned transportation difficulties, which is a common barrier in finding and maintaining employment among youth with disabilities [13].

Gender-related facilitators for maintaining employment included having adequate social and vocational supports, education, and holding a driver's license. Consistent research shows that social support is an important factor influencing self-efficacy, self-advocacy, and career decision-making [10, 26]. Family involvement especially positive

parental involvement is associated with greater transition success [83].

The qualitative studies in our review mostly explored women's experiences and needs in relation to transition goals and outcomes and showcase the gender-specific barriers (e.g., parental overprotection, gender role expectations, difficulties with self-care and accommodations) and facilitators (e.g., social support, advocacy, early work experience) of young women with disabilities. The findings of the qualitative studies within our review were consistent with the results of the quantitative studies, highlighting how gendered expectations and stereotypes influenced employment. Most of the focus of the quantitative studies was on employment outcomes and not the experience of looking for work or performing duties on the job and how this varied by gender. Future studies should carefully consider the role of age when exploring gender, disability, and employment because age is often associated with increased education, and work-life experience that can assist in getting and maintaining a job [60]. Future research should compare and contrast male and female experiences and also explore men's experiences in further depth. Further research should be more theoretically informed and aim to have equitable gender representation in their samples.

Conclusions

The findings of this review highlight the critical need for gender-specific vocational supports for youth and young adults with disabilities [33–38]. The majority of the studies within our review reported that young men with disabilities had better employment outcomes than women with disabilities. Some (although much fewer) studies found that females with disabilities had better employment outcomes than males. In regards to trends among those who are employed, men with disabilities often work more hours and have better wages compared to women with disabilities. There are several gender-related barriers and facilitators to maintaining employment including social supports and gender roles. Gender issues need to be considered when addressing employment inequity among young people with disabilities [22]. Future studies should include in-depth and qualitative experiences of finding work and experiences within the job.

Funding This study was funded by the Ontario Ministry of Research and Innovation.

Compliance with Ethical Standards

Conflict of interest The authors report no conflicts of interest.

Ethical Approval This article does not contain any studies with human participants or animals performed by any of the authors.

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