CRE–DH
Centre of Research Excellence in Disability and Health

EMPLOYMENT AND MENTAL HEALTH OF PEOPLE WITH DISABILITY

Summary of research findings from the Centre of Research Excellence in Disability Health

June 2024

Content warning

This report contains discussion of self-harming behaviour and suicidality.

A note on terminology

This report uses person-first language when referring to people and groups with disability. We recognise that language preferences are individual and that many people with disability also use identity-first language.

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Centre of Research Excellence in Disability and Health

The University of Melbourne VIC 3001
cre-dh@unimelb.edu.au
credh.org.au
@DisabilityHlth

Executive summary

Over 4 million Australians live with a disability, and this group experiences notable inequalities in employment relative to people without disability. People with disability are more likely to be unemployed, underemployed, and employed in jobs with poorer psychosocial job quality and poorer employment conditions than people without disability. The gap in employment rates has persisted for decades, despite substantial ongoing government investment. These disparities are important because employment is a key social determinant of mental health.

Our research group, the Centre of Research Excellence in Disability and Health (CRE-DH), identified an important evidence gap internationally in the literature, finding limited evidence on the association between employment and mental health among people with disability. We addressed this research gap and established a program of research examining the impact of employment on mental health for people with disability.

This research review comprehensively examines and summarises the findings of our research program on employment and mental health among people with disability and generates a series of policy recommendations. To better understand our research findings, we use the Disabling Working Environments framework to conceptualise the range of experiences people with disability encounter when they enter the labour force, work in jobs, and leave employment and examine the impact of these experiences on mental health, acknowledging the impact of personal (e.g., age, education) and environmental (e.g., availability of jobs, access to health services, discrimination) factors.

Key findings

Overall, our research findings indicated that people with disability encountered adverse employment experiences throughout the employment cycle, which had detrimental impacts on their mental health.

Entering employment: Our research showed that gaining work was more difficult for people with disability due to the multifaceted, compounding barriers to employment they experience. This includes personal factors (e.g., inadequate education and training, insecure housing and finances, inadequate on-the-job supports) and environmental factors (e.g., discrimination, low expectations, shortage of suitable, high-quality, stable jobs, lack of cross-program collaboration). We also found that well-designed employment services and individualised employment support models facilitated gaining employment and led to better employment outcomes.

In employment: While working part-time was beneficial for the mental health of people with disability compared to not working, underemployment (wanting to work more hours) was common for people with disability and was associated with poorer mental health. Exposure to psychosocial job stressors, such as low job control, was associated with increased sickness absence among workers with disabilities. Workplace discrimination was prevalent, from both employers and other employees.

Leaving employment: Leaving employment was associated with the appropriateness of the job, such that having a job that matched skills, aspirations, and flexibility to balance work-life-rest needs helped people with disability remain in work. On-the-job supports and an inclusive workplace culture helped people with disability maintain employment. Our research also showed that people with disability may be more likely to be 'pushed' into retirement, particularly when their needs and job requirements did not match.

Our research found overwhelming evidence that employment is important for protecting and promoting the mental health of people with disability.

Policy recommendations

Our research has indicated four key areas in which policy changes are necessary to improve the employment outcomes, and the mental health, of people with disability.

Improving job preparedness

- Improving opportunities for young people with disability to receive education, training, and job preparedness activities (e.g., work experience, career advice) to help with transitions from education into the labour force.
- Providing better supports and resources for school career programs to resolve barriers to the meaningful inclusion of young people with disability, including individually tailored career programs and starting work experience and career education early in secondary school.
- Supporting positive expectations and aspirations for employment for people with disability and their families and communities, including in schools, disability services, and employers.
- Establishing programs beyond formal education settings to help people with disability gain and maintain employment, including effective employment services.

Building effective services

- Providing individualised supports to jobseekers with disability to better address their barriers to employment and facilitate successful job matches that meet jobseekers' needs and aspirations.
- Upskilling the employment services workforce to provide more individualised models of support and facilitate better job matching.
- Building collaboration across government programs such as the NDIS, DES, and other services available through Services Australia to make services easier to navigate and enable the provision of more holistic support to address personal and environmental barriers to employment.

Promoting inclusive workplaces

- Strengthening the Disability Discrimination Act 1992 and creating a Disability Rights Act in line with recommendations from the Royal Commission into Violence, Abuse, Neglect and Exploitation of People with Disability.
- Providing resources to employers to help them hire, support, and develop the skills and careers of people with disability, including information to help employers navigate government and employment services, to address employer concerns regarding hiring people with disability, and to build disability confidence.
- Pilot testing, implementing, and evaluating interventions to address attitude change within workplaces which are co-designed with people with disability.

Creating employment opportunities

- Creating employment opportunities in open employment for people with disability through national strategies and the development of local, place-based networks.
- Considering multiple strategies to increase employment opportunities, including employment targets, hiring schemes, and financial incentives for businesses to hire and support people with disability.

Recommendations for future research

Our research highlighted the need for further research to address research gaps and limitations of current research.

Improved disability data

There are currently extensive data gaps on disability, creating a barrier to devising policy solutions to improve employment outcomes for people with disability. This is in part due to small sample sizes in population surveys and limited disability identifiers in linked administrative data sources. The Australian government is investing in the National Disability Data Asset (NDDA), which will bring together administrative datasets with a focus on improving opportunities, outcomes, supports, and services for people with disability.

The NDDA may address some of the limitations of other existing data sources.

Intersectional research

There is a lack of intersectional quantitative disability research in Australia, in part due to small sample sizes in population surveys. Newly available linked data sources may provide an opportunity to apply an intersectional lens to research questions. However, this needs to be complemented by qualitative research and population surveys to understand the experiences, voices, and stories of people with disability. Future research examining how employment and mental health outcomes among people with disability vary according to intersecting social identities will ensure results are relevant and appropriately informing policies.

Research done by and for people with disability

Disability-inclusive research upholds the rights of people with disability and leads to better quality, more relevant research. Disability research needs to place lived experience at the forefront, including through participatory research practices (such as co-design and shared decision making). This will lead to high-quality evidence to inform disability policy, in addition to strengthening disability research capacity and building career pathways for researchers with disability.

Policy monitoring and evaluation

Monitoring and evaluation are critical to understand if and how policies are impacting the employment outcomes of people with disability. To assess progress against the objectives of government strategies, monitoring and evaluation should be integral components in all new employment initiatives, programs, and services. Findings from monitoring and evaluation will also guide employment policy reform and ultimately improve the employment and mental health outcomes of people with disability.

Conclusion

Employment is a key way to protect and promote the mental health of people with disability. Policy action focused on improving job preparedness, building effective services, promoting inclusive workplaces, and creating employment opportunities is needed to address the inequalities in employment and resulting mental health outcomes experienced by people with disability.

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Abbreviations

ABS	Australian Bureau of Statistics
ADS	Australia's Disability Strategy 2021-2031
COVID-19	Coronavirus (SARS-CoV-2 virus)
CRE-DH	Centre of Research Excellence in Disability and Health
CRPD	United Nations Convention on the Rights of Persons with Disabilities
DES	Disability Employment Services
DRC	Royal Commission into Violence, Abuse, Neglect and Exploitation of People with Disability
DSP	Disability Support Pension
DWE	Disabling Working Environments framework
NDDA	National Disability Data Asset
NDIS	National Disability Insurance Scheme
NDRP	National Disability Research Partnership
PLIDA	Person Level Integrated Data Asset
SLES	School Leaver Employment Supports

Key terms

Employed	The Australian Bureau of Statistics (ABS) defines a person as employed if they work for pay for one or more hours per week. [1]
Unemployed	According to the ABS, a person is unemployed if they are in the labour force and are not in a job, but are actively looking for work and are available to start work. [1]
Not in the labour force	As defined by the ABS, a person is not in the labour force if they are not employed or unemployed. [1]
Employment conditions	A construct which includes components of work related to working hours (e.g., full- or part-time [2], underemployment), precarious employment (e.g., lack of rights, insecurity, or inadequate income) [3], contract type [4], job insecurity [5], and flexible work. [6]
Underemployment	The ABS defines a person as underemployed when an individual is working less than full-time hours and wants to work more hours than they currently receive. [1]
Contract type	According to the International Labour Organization, contract type is the type of arrangement a person has with their employer, ranging from permanent, fixed-term (i.e., for a defined period), or casual (i.e., paid a loading for work that is without an advance commitment or defined schedule). [4]
Psychosocial job quality	A construct including aspects of exposure to job stressors including violence, harassment, and bullying; discrimination [7]; social support [8]; job demand and control [9]; effort-reward imbalance [10]; and organisational justice. [11]

Rosie's story

Rosie lives with mental illness. Rosie has a strong employment history and finds that working provides her with a sense of structure and stability, which in turn helps her manage her disability.

A few years ago, Rosie was working in a retail job. She had been in the job for several months when she was unexpectedly hospitalised due to her disability. Although Rosie had been performing well in her job prior to her hospitalisation, when she returned to work she found that she was being left off the roster. Rosie continued to provide her managers with her availability, but was still not being given any shifts.

Concerned about her job, Rosie spoke with her managers in private. They confirmed Rosie's suspicions – she was being fired following her hospitalisation. Her employers believed the short notice she gave made her too unreliable to remain in the job. Being fired from her job triggered feelings of suicidality for Rosie, leading to a significant deterioration in Rosie's health and being hospitalised again. Rosie noted the irony of this situation – losing her job for being unreliable due to her disability led to her being hospitalised again due to losing her job.

After losing her job, Rosie began working as a pharmacy assistant at a chemist, a position she has now held for several years. While working long shifts or managing challenging situations at work can be difficult, Rosie describes loving what she does, particularly talking with regular customers and helping grateful patients. Rosie's supervisor is supportive and gives her the space and authority to manage her health needs on the job. This inclusive workplace culture has enabled Rosie to not only maintain her job, but to flourish in it.

> **It is empowering to have someone believe that I am a good employee, and who also accepts that I need to manage the impacts of my disability whilst at work.**
>
> **- Rosie**

Disability, employment, and mental health in Australia

Disability is a common experience: about 18% of the population, over 4 million Australians, has a disability. [12] Disability is the result of an interaction between a person's impairment or health condition and barriers in the context in which people live, which may then limit a person's opportunity to participate in society on an equal basis with others. [13]

Australians with disability are much less likely to be employed than Australians without disability: while 80% of Australians aged 15-64 years without disability are employed, only half of Australians with disability are in jobs. [12] People with disability are also more likely to be unemployed (10.3% compared to 4.6%) [12], underemployed (10% compared to 6.9%) [14], and employed in jobs with poor psychosocial job quality and employment conditions than people without disability. [15,16] Despite considerable investment to address this, the gap in employment rates has persisted for decades. [17]

Addressing the employment gap is important because employment is a key determinant of mental health and other health outcomes. [18] Work provides important benefits to the mental health of individuals and populations. The work environment may also lead to poor mental health outcomes. However, at the start of this research program we identified an important evidence gap internationally in the literature, finding limited evidence on the association between employment and mental health for people with disability.

Centre of Research Excellence in Disability and Health

The CRE-DH brought together an interdisciplinary group of researchers and stakeholders from health and disability sectors, state and federal governments, and disability consumer representative groups. The CRE-DH (2016-2023) was funded to generate evidence to guide social and health policy reform for people with disability in Australia. One key research theme of the CRE-DH related to employment among people with disability. Visit credh.org.au for more information on the CRE-DH's research.

Researchers from the Centre of Research Excellence in Disability and Health (CRE-DH) addressed this research gap and conducted a program of research examining the impact of employment on mental health for people with disability. Generally, our research demonstrated that employment is important for the mental health of people with disability, including beneficial effects on mental health of gaining employment and detrimental effects of unemployment, underemployment, and poor psychosocial job quality and employment conditions. [19–30] Details of our studies are shown in Appendix 1.

Our research has also shown that unemployment, underemployment, and poor psychosocial job quality and employment conditions have particularly large effects on the mental health of people with disability – more than they impact the mental health of people who don't have disability. For example, while being unemployed is associated with poorer mental health across the whole population, people with disability experience a larger deterioration in their mental health when unemployed than people who do not have disability.[22]

Personal and environmental factors also influence the experiences people with disability have when looking for work and in employment. Environmental characteristics, such as the socioeconomic environment and availability of services in areas where people live, are associated with employment outcomes among people with disability. [31–33] At a personal level, a vast array of life circumstances impact a person's ability to gain and maintain work, including their education, mental and physical health, housing, and finances. [32]

Taken together, our research shows that employment is important for protecting and promoting the mental health of people with disability. Identifying the determinants of mental health for people with disability is important because people with disability have higher levels of psychological distress and higher rates of mental health conditions than people without disability. [34,35] The poor employment outcomes of people with disability contribute to these mental health inequalities. We also found that the experiences people with disability had when looking for work, when in employment, and when leaving employment have impacts on their mental health, and these are influenced by personal and environmental factors. One way to think about all these components together is through the Disabling Working Environments framework.

Disabling Working Environments

The Disabling Working Environments (DWE) framework was developed by Milner et al (2019) to conceptualise the range of experiences people with disability encounter as they enter the labour force, work in jobs, and leave employment. These experiences may then have effects on people with disability's mental health and future engagement with the labour force. [36] These interlinked components are conceived of as 'disabling' because people with disability have higher exposure to barriers that may reduce their ability to gain and maintain employment. Many people may have difficulties finding jobs, encounter poor employment conditions, or have to leave a job. However, people with disability are more likely to experience barriers to gaining and maintaining employment due to discrimination and systemic disadvantage that results in exclusion from key life and employment domains (e.g., education, social and community networks). The DWE framework recognises these inequities. More information on the development of the DWE framework can be found in the original article by Milner et al. [36]

There are three main components of DWE, shown in Figure 1 and explored in-depth in the case studies below. Separating out these components into distinct entities may highlight potential points of intervention to address existing barriers, leading to improved employment and mental health outcomes. These components are influenced by personal (e.g., age, mental health, education) and environmental factors (e.g., availability of jobs, transport accessibility, access to health services), illustrated on the outside of the diagram. Importantly, the three main components impact one another and each directly affects mental health.
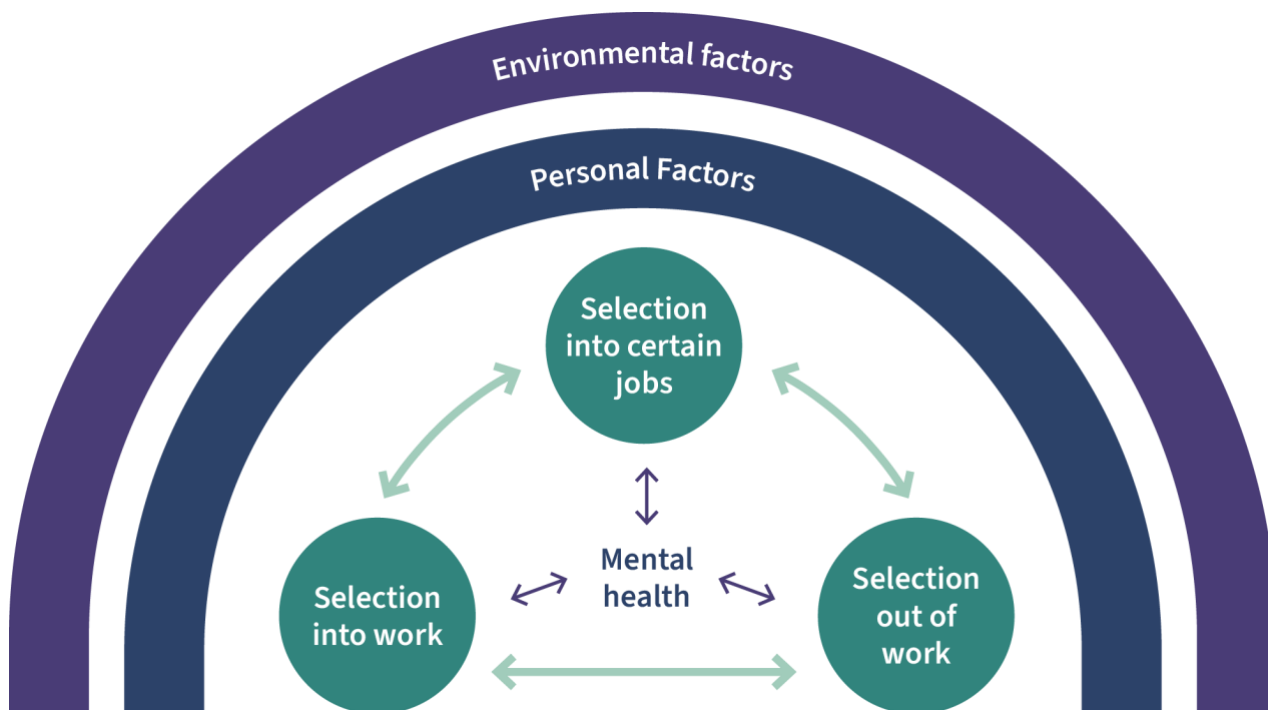

Figure 1. Disabling Working Environments framework

CRE-DH Employment and mental health of people with disability   **JUNE 2024**

People with disability may encounter barriers to finding work due to attitudes of employers or availability of jobs. People with disability may be less likely to get jobs than their peers who don't have disability.

CASE STUDY

Taranee

Taranee lives in a regional town in New South Wales. He is 26 years old and has cerebral palsy and epilepsy. Taranee's first job was working in his family's business. Working for his family helped Taranee learn more about his skills, interests, and goals for work in the future. Taranee struggled with communication and this job helped him improve his skills in speaking with others, customer service skills, and picking up the phone with his right hand.

When Taranee's family sold their business, he decided to start looking for work on Seek. He wanted to find a job to have a little bit of extra money. After creating his account on Seek and uploading his resume, Taranee began looking for jobs. A significant barrier to finding work was the lack of jobs in Taranee's area. As he lives outside a major city, there is also very limited public transportation and Taranee must rely on others for transport. This was further complicated by the fact that Taranee needed a specific job that was casual, met his skills and not a lot of time looking at a screen because of his epilepsy. Taranee did not have any issues with his mental health while he was looking for a job, but job seeking was on his mind a lot. Looking past lots of jobs that did not suit him felt annoying.

Taranee applied for a salesperson job at a large electronics store, but they never replied. When he didn't hear back from them, he then asked his NDIS plan manager to help him find any kind of job that suits him.

After a few weeks of waiting for notifications from Seek, his plan manager told him about a university job and organised a meeting with the team to do an interview. The meeting went well and Taranee got the job. He had to fill in some forms and do some training before he got started. He is able to do this job remotely. This flexibility means that Taranee does not have to worry about transportation to get to and from work, and can work hours that meet his needs.

Selection into certain types of jobs and exposure to poor psychosocial working environments

When people with disability get jobs, they are more likely to experience poorer working conditions, such as being underemployed or experiencing more psychosocial job stressors, like job insecurity.

CASE STUDY

Chelsea

Chelsea lives with mental illness and has scarring from non-suicidal self-injury. After moving to a new city, Chelsea was looking forward to starting her new retail job. She did well on her first shifts but was surprised to be given a uniform which was different than the short-sleeved shirt worn by other employees. The message was clear: Chelsea was being asked to cover up her scarring.

Despite continuing to do well on the job, Chelsea was told by her supervisor that she needed to remain covered up as her scars were distracting for customers. This meant that she was not allowed to wear the same clothes as her fellow employees, even though she wanted to fit in with her coworkers. Chelsea described feeling her 'heart sink' as she realised she was welcome at her job only as long as she continued to dress a certain way.

People with disability are more likely to become unemployed and retire early. This may be influenced by the poorer quality jobs they were working in.

CASE STUDY

Gary

Gary is in his late fifties. He spent 30 years in the Navy including active deployment across several contexts. The compounding impact of a challenging deployment and a vehicle accident led to Gary being medically discharged. Gary was well-supported when discharged including in relation to career transition and peer support. He continues to live with physical and psychosocial disability.

Gary found work easily in an area that matched his skill set. But the organisational culture was very different to what he was used to. He tried to raise issues with his supervisor and human resources in relation to Occupational Health and Safety and the need for greater support and resourcing to enable him to effectively and safely undertake his role.

The support and resources required were not forthcoming. After raising his concerns, Gary was made to feel very isolated in his role to the point that the impact the role and organisation were having on his mental health became untenable. Gary left this job and is yet to find a new one.

CASE STUDY

Lola

After finishing school, Lola wanted to gain skills to help her start a career in administration. Her disability employment service provider worked with Lola to understand her career goals and aspirations and what she was looking for in a job. They helped Lola to find a traineeship doing administrative work at a community organisation.

Lola was excited to take the first steps towards a career working in administration and was eager to begin her traineeship. However, when Lola started working she found that no tasks or responsibilities were allocated to her, and no traineeship activities were prepared for her to complete. When Lola asked for tasks and responsibilities, she was criticised by her supervisors for not knowing what to do. This impacted her self-esteem and left Lola feeling defeated and worried about asking questions.

Lola felt frustrated because there was no work for her to do. She felt like she was "there just to be there" and that no one expected her to do anything. Lola felt like she had only been hired because she had a disability, not because her supervisors actually wanted her to work. Ultimately, Lola decided to quit.

Lola says if her job had matched what she was hired to do and she was supported in the role she would have stayed. Instead, Lola felt like she was back at the beginning, looking for a new job which would help her work towards her career goals.

A better understanding of the DWE components, their mutually reinforcing relationships, and impact on mental health in the context of personal and environmental factors will allow researchers and policymakers to consider how policy solutions may need to move beyond simply targeting one component of DWE and instead consider the interconnected nature of people with disability's employment experiences.

> The experience of Disabling Working Environments will be influenced by a wide range of **personal** and **environmental** factors.
>
> **Personal** factors are internal to a person. This includes attributes like gender, age, LGBTQIA+ identity, Indigenous status, and ethnicity; disability type and severity; physical and mental health; education, occupation, and work history; social background and coping styles; and past and current life experience and circumstances.[31,36,37]
>
> **Environmental** factors are external to a person. They constitute the physical, social, and attitudinal environment in which a person lives. This includes the built environment, transport accessibility, access to health and other services, social attitudes and discrimination, and the availability of jobs. This also includes institutions, laws, policies, and systems. [31,36,37]

Our research

We used the DWE framework as a tool to guide the program of research on employment and mental health conducted as part of the Centre of Research Excellence in Disability and Health (CRE-DH).

We used a range of research methods including qualitative methods (e.g., interviews and focus groups), quantitative methods (e.g., analysis of cross-sectional and longitudinal data), and reviews of the existing literature. More information on our methods and data sources is included in Appendix 2.

Selection into work

Findings

Fourteen articles and reports relate to differential selection into work. Findings broadly relate to two key areas: barriers to gaining work and employment services.

Barriers to gaining work

Consistent across our studies, a key finding was the experience of barriers to gaining work, operating at both personal and environmental levels.

- Among participants in Disability Employment Services (DES), compounding personal factors (vocational e.g., limited post-secondary school qualifications, insufficient on-the-job supports; and non-vocational, e.g., insecure housing, poor mental health) as well as environmental factors (e.g., limited availability of jobs) were associated with decreased odds of becoming employed. [38] The complex personal circumstances of DES participants (e.g., disrupted education, traumatic life events, financial hardship), in conjunction with broader environmental-level factors (e.g., limited jobs, disability and welfare discrimination), made engaging with employment services and gaining employment challenging [32,39], particularly when there were limited suitable jobs available.

- Studies among young people with disability highlighted additional barriers including lack of adequate education, training, work experience, career development opportunities, and challenges balancing the demands of job seeking, work, and health [40], as well as mental health and financial stressors, particularly in the context of the COVID-19 pandemic. [41]

- Young people who more frequently reported a disability in childhood were more likely to be unemployed or out of the labour force all together in early adulthood. This likely reflects multifaceted barriers to employment, including lowered expectations of labour force engagement and reduced opportunities for career development activities. [42]

- Discrimination was highlighted as a key barrier to accessing employment. [43] Discrimination on the basis of disability was reported by over a third of participants in our study of DES participants while seeking employment, and by over half of participants while in the workplace. [44] This aligned with research from the Attitudes Matter Survey which found there was a need for intervention at multiple levels to address discriminatory attitudes towards people with disability, including with relation to employment. [45]

- The current lack of cross-program collaboration between the National Disability Insurance Scheme (NDIS) and DES was also found to be a barrier to gaining work, with impacts to early career development activities, like work experience. [43,46]

Employment services

- Our research demonstrated the importance of effective employment services for gaining employment. We found that a higher proportion of DES participants who were employed reported receiving good or very good support from their DES provider, including sufficient on-the-job supports to help DES participants maintain work. [47] In contrast, when DES participants felt pressured into jobs or training that didn't match their skills and health needs, this harmed their mental health, undermined their confidence and their capabilities to remain engaged in the labour market. [23] Discrepancies in employment services providers' performance were also shown in our study of Transition to Work providers, with larger

providers with more clients reporting higher employment rates at the end of the program. [48]

- We found evidence that individualised placement and support models (i.e., programs which are focused on the individual needs of jobseekers to help them seek and gain paid employment in a competitive employment setting) improved employment outcomes among people with psychosocial disability as well as specialised programs (e.g., Project Search; ASD supports) for young autistic people and those with developmental disability. [49]

Policy and practice recommendations

Based on our research findings, we make the following recommendations to address the barriers experienced by people with disability and improve opportunities to gain employment.

- Young people with disability should be provided with the opportunities to receive the education, career advice, training opportunities, and work experience that will enable them to gain employment. These opportunities should be tailored to the young person's needs and interests, and provided within education settings to prepare young people with disability for the transition into the labour force.

- Improved collaboration is needed between government services, including the NDIS, health, welfare, and employment services. Services that work together are more likely to help people with disability secure better employment outcomes by addressing personal factors (e.g., poor mental health, balancing healthcare needs, housing insecurity) which have been shown to be key barriers to gaining employment.

- Employment service providers need increased training and support to comprehensively understand and address the complex and intertwining barriers (both personal and environmental factors) that jobseekers with disability face when looking for work and getting jobs.

- Matching people with disability to jobs that are congruent with their health needs and vocational interests is a key way to improve employment outcomes. The pressure exerted by some employment services on people with disability to take any available job, regardless of its suitability,

warrants revision. The incentives offered to employment providers to place people into part-time and full-time work, and to help them maintain that work overtime and potentially increase hours, need to be reconsidered.

- In order to reduce endemic discrimination more needs to be done to educate potential employers on the benefits of hiring people with disability and on ways to make the job application and interview process more accessible (e.g., not using ableist language in job ads, considering what the critical tasks of a given role are, providing accommodations in interviews and using accessible spaces).

- The creation of more, suitable jobs for people with disability requires action at multiple levels including through the development of local, place-based networks to boost employment opportunities for people with disability. Improved employment services which are incentivised to place individuals in appropriate jobs and greater employer resources to support individualised job design will also improve the amount of suitable jobs available.

Selection into certain types of jobs and exposure to poor psychosocial working environments

Findings

Six studies and reports relate to people's experience of poor employment conditions whilst in employment. Our studies can be grouped into two main areas: hours worked and exposure to psychosocial job stressors and discrimination.

Hours worked

- Two studies examined the impact of part-time employment on mental health. We found that part-time work (<35 hours per week) was beneficial for people with disability's mental health compared to not working, with evidence of effects for self-reported mental health [30] and mental health service use. [29]

- However, being underemployed (wanting to work more hours) was associated with negative mental health outcomes. We found that people with disability were more likely to be underemployed than people without disability. [25,50] People with disability who were underemployed reported particularly poor mental health outcomes, suggesting that the negative impact of underemployment is larger for people with disability compared to those without disability. [25]

Exposure to psychosocial job stressors and discrimination

- Following up on a previous study that we conducted which found that exposure to psychosocial job stressors was more common among people with disability [15], we examined the impact of psychosocial job stressors on sickness absence. We found that the detrimental effect of low job control on sickness absence was found to be greater for people with disability compared to those without disability. [51]

- We also examined discrimination in the workplace. Using data from the United Kingdom, we found about a quarter of working-age British adults with disability reported employers as a source of discrimination in the previous twelve months. The most commonly reported forms of workplace discrimination included being given fewer responsibilities on the job and not being promoted. [52] Using data from our study of DES participants, over half of participants had experienced one or more forms of discrimination in the workplace. The most common reported forms of discrimination related to discrimination in supports given at the workplace and discrimination from other employees. [44] The results were consistent with our research using the Attitudes Matter Survey, a national survey of community attitudes, which found that only 42% of Australians agreed that workplaces are accepting of people with disability in Australia. [45]

Policy and practice recommendations

- People with disability need to be supported to work hours that match their needs. This requires interventions to address underemployment, as well as support to work part-time hours when they are desired. Employment programs and other policy initiatives must be able to support people with disability to work the hours they

prefer, including working with employers to arrange suitable working hours and removing incentives that prioritise placing people with disability into full-time employment, which will in turn increase the mental health benefits of work for people with disability.

- People with disability should be supported to find suitable jobs that meet their needs, in order to avoid poor outcomes, such as greater sickness absence. This means people with disability need career support beginning in secondary school, with access to ongoing resources and supports as required to ensure people with disability are working in jobs that match their needs and are not negatively impacting their health. Jobs with flexible working arrangements – which allow changes to the hours, pattern, or location of work – are a critical practice to meet the needs of people with disability and enabling ongoing employment.

- Employers and workplaces need to be supported to develop and implement strategies to reduce discrimination in the workplace, including workplace harassment, lack of workplace training, and limited opportunities and promotion. This includes the support to build positive workplace cultures which are inclusive and diverse.

Selection out of work

Findings

Four studies addressed differential selection out of work. Our research found that exiting employment was associated with the appropriateness of the job to the individual, employment conditions, psychosocial job stressors, job supports, and the workplace culture.

- We found that people with disability were more likely to leave jobs than people without disability, although the factors predicting exit from employment were similar for people with and without disability, including being in a lower-skilled occupation, experiencing poor psychosocial job quality, and being in a casual, labour hire (i.e., when a provider provides workers to another company on a fee or contract basis), or fixed-term contract compared to those working in high-skilled occupations, experiencing good

psychosocial job quality, and on a permanent contract. [53]

- Numerous factors influenced the capacity of young people with intellectual and/or psychosocial disability to maintain employment, including having a job that matched their skills and aspirations and flexibility to balance their work-life-rest demands. When the required flexibility in working arrangements was not accommodated, young people with intellectual and/or psychosocial disability reported that this increased pressure negatively impacted their health and, in turn, led to increased risk of exiting the labour force. Alternatively, positive and inclusive workplace cultures, support for reasonable accommodations, and a proactive focus on career development all helped young people with intellectual and/or psychosocial disability remain in work. [40]

- Interviews with retirees with intellectual disability found that retirement was often considered a solution to manage mismatches between work requirements and personal needs, even when participants wanted to continue working. [54]

- For individuals engaged in DES programs, feeling pressured to take jobs which didn't match their skills and health needs undermined mental health outcomes and caused people with disability to exit the labour market. [23] These experiences also decreased participants' confidence in DES' ability to help them gain and maintain work in the future. [32] On-the-job supports were found to be important to DES participants to enable them to maintain employment. [47]

- During early stages of the COVID-19 pandemic in the UK, people with disability were more likely to work fewer hours than before the pandemic. [55] However, people with disability did not appear to be more likely to lose their jobs than people without disability. [55,56]

Policy and practice recommendations

- People with disability should be supported into jobs which match their needs and skills. A 'good match', which supports work-life-rest balance and an individual's aspirations, is more likely to lead to sustained employment among workers with disabilities. For individuals engaged in employment programs, careful matching may help people with disabilities remain employed.

- People with disability require ongoing support in the workplace. For young people establishing themselves in the labour force, this may include education about rights in the workplace and support to request reasonable accommodations and individualised and flexible work arrangements, including the option to work from home, particularly if this promotes work capacity. For older individuals, support is required to plan retirement from employment. This includes plans for social and community engagement to replace the time structure, social contact, and sense of purpose provided by employment. For all age groups, during times of economic crisis it is important that additional effort and workplace protections are in place to prevent exit from the workplace.

- Employers need to do more to promote positive, diverse, and inclusive workplace cultures and ensure they are upholding the rights of people with disability, including providing reasonable accommodations. Lack of appropriate training, discrimination, and feeling professionally and socially isolated lead to exit from work among people with disability. Employers need to be provided with education on what programs and tools are available to them to hire and support the careers of people with disability, including with respect to providing accommodations and promoting an inclusive workplace culture.

Discussion

Key findings

Our research has shown that employment is a key determinant for the mental health of people with disability. People with disability are more likely to experience unemployment, underemployment or adverse employment conditions, and this leads to significant impacts to their mental health.

We found that gaining work is more difficult for people with disability due to complex and compounding barriers to employment including lack of opportunities, education and training, and a shortage of suitable, high-quality, stable jobs. In the workplace, experiences of discrimination and underemployment were common, and our research highlighted the benefits of flexible working arrangements, such as part-time work, reasonable accommodations, and on-the-job supports. People with disability were also more likely to leave their jobs and be 'pushed' into retirement, potentially as a result of poorer quality jobs and the poorer quality of the work environment. The benefits of a good job match suited to the person's needs and interests highlighted the importance of effective employment services. Discrimination was common in recruitment into employment and within the workplace, representing a key barrier to achieving positive employment outcomes.

Our research findings highlighted the adverse employment experiences that people with disability encountered throughout all stages of the employment cycle: when they entered the labour force, worked in jobs, and left employment as well as the importance of personal and environmental factors in shaping employment outcomes. Understanding the barriers that people with disability experience through each of these interconnected components of the Disabling Working Environments framework highlights the need to consider policies and interventions that target different aspects of the employment cycle to address barriers to employment, increase ongoing labour force engagement, and support positive mental health outcomes for people with disability.

Disability policy in Australia

As part of its obligations as a signatory to the United Nations Convention on the Rights of Persons with Disabilities (CRPD) [13], Australia created the National Disability Strategy 2010-2020 which aimed to recognise the human rights, social, and economic imperatives for creating an inclusive Australian society and establish a policy framework to guide government action on mainstream and disability-specific public policy. [57] As part of the Strategy, the NDIS was developed and has been progressively implemented since 2013. [58] Reforms to other disability policies, including the Disability Support Pension and Disability Employment Services, have also been implemented in the last decade.

More recently, Australia's Disability Strategy 2021-2031 (ADS) recognises the important relationships between social determinants of health, physical and mental health, and people with disability's ability to lead productive and fulfilling lives on an equal basis with others, thus framing the social determinants of health, including employment, as a key policy priority. [59] Employ My Ability, the Disability Employment Strategy, was developed as a component of the ADS to provide a framework for government, employers, and the community to improve employment outcomes among people with disability across four priority areas: lifting employer engagement, capability and demand; building employment skills, experience and confidence of young people with disability; improving systems and services for job seekers and employers; and changing community attitudes. [60]

A notable part of the ADS is a commitment to improving attitudes and reporting on progress on the priority areas, including by investing in improving disability data. [61]

The Australian Government has announced a new specialist disability employment program which will come into effect from 1 July 2025. This program aims to provide customised and tailored support to participants to help them gain and maintain employment.[62] Addressing the policy changes indicated by our research will maximise employment outcomes and improve mental health for people with disability.

Policy implications

Our research has highlighted four key areas in which policy changes are necessary to improve the employment outcomes of people with disability: improving job preparedness; building effective services; promoting inclusive workplaces; and creating employment opportunities.

Improving job preparedness

Young people with disability should be provided with the opportunities to receive the education, career advice, training opportunities, and work experience that will enable them to gain employment on an equal basis with others. Improving career education programs, including work experience opportunities, available to young people with disability is a key way to improve transitions from school and training into the labour market, setting young people on a positive employment trajectory which will provide lifelong benefits to their engagement with the labour market and mental health. This is congruent with Recommendation 7.5 'Careers guidance and transition support services' from the Royal Commission into Violence, Abuse, Neglect and Exploitation of People with Disability (DRC), which highlights the importance of advanced transition planning and work experience opportunities in open employment. [63]

Within education settings, better supports and resources for school career programs could help resolve barriers to meaningful inclusion of young people with disability. By understanding and providing the supports required for young people with disability to access career programs and work placements, individually tailoring career programs to young people's needs and interests, building greater networks and opportunities for work experience, and starting work experience and career education early in secondary school, schools can make career planning accessible to young people with disability and facilitate better employment outcomes. Collaboration between schools and employers can additionally expose employers to the capacities of people with disability and the benefits of employing them.

Tailored school programs could also help address individual barriers such as poor confidence, lack of specific skills or work experience, understanding of the job application process, lack of knowledge of rights in the workplace, and difficulties asking for reasonable accommodations. Investing in programs within education settings that are tailored to young people with disability's individual needs, abilities and interests would ensure young people with disability are engaging in the right kind of education or training for the jobs they are most interested in and suited for, assist them to develop detailed transition plans, and link them with other necessary supports (e.g., mental health supports).

Enhancing programs would also help to establish positive expectations for gaining employment among young people with disability and their families and communities. Setting an expectation that young people with disability can work is best practice for supporting young people with disability to successfully transition into the labour force.

There is also a need for available programs outside of formal education to help people with disability gain and maintain employment. People

who acquire a disability in adulthood, whose existing disability and support needs change over time, who are not engaged in formal education, or who may wish to change sectors or occupations all require appropriate support. Effective employment services, detailed below, are one approach to help people with disability who are not in school engage with the labour force.

Building effective services

Effective employment services that provide individualised supports to help jobseekers with disability address vocational and non-vocational barriers to gaining and maintaining suitable work that meets their needs and aspirations are critical for improving both employment outcomes and mental health. Given the inter-relationships between employment and mental health, the design and implementation of employment programs, such as DES, need to include a stronger focus on mental health. This involves promoting the mental health of job seekers by ensuring programs are guided by principles that put the person with disability at the centre, putting people into jobs that are good 'matches' (including in terms of skills, aspirations, working hours, flexibility), supporting access to positive and enabling work environments, and providing ongoing on-the-job support when people are placed into employment, such as support to work with employers and negotiate employment arrangements.

Building greater collaboration across government programs, such as the NDIS, including the School Leaver Employment Support (SLES) capacity building program which supports young people with disability transitioning from school to employment, employment programs such as DES and Workforce Australia, and other programs and services available through Services Australia, will make services easier to navigate for people with disability and enable the provision of more holistic support to address personal and environmental barriers to employment. Nonetheless, improving

the effectiveness of employment programs such as DES relies on broader policy and program reform to services and programs that address the structural barriers to employment. Improving educational outcomes, promoting access to affordable housing, reducing financial hardship and poverty, improving access to health-promoting environments, creating job opportunities that meet the needs and aspiration of job seekers with disability, better early interventions, and better disability, health, and mental health supports are all required if we want to reduce the gap in employment outcomes between Australians with and without disability.

Upskilling the employment service workforce to be able to incorporate more effective, individualised models of support (e.g., individualised placement and support) is one such approach supported by our research and the wider literature. It is also vital that employment programs do more to enhance the provision of supports valued by jobseekers with disabilities (e.g., internal training that builds confidence, vocational skills to engage with the labour market, and on-the-job supports once work is obtained). Better understanding of what employment supports are effective for cohorts of jobseekers further from the labour market, such as young people with intellectual disability, is also vital.

Further training for the employment service workforce may also facilitate better job matching, as placing people in unsuitable jobs may be detrimental to their mental health and labour force trajectory. To this end, it is necessary to revisit the incentives that are offered to employment services to place people into jobs and to maintain those jobs over time, and the existing mutual obligation requirements to accept any 'reasonable' job offer. Accommodations for increasing a person's hours over time would encourage employment services to help people with disability find part-time employment, building their hours over time in conjunction with ongoing support.

Promoting inclusive workplaces

Consistent with the findings of the DRC which recognised that employment discrimination was a widespread issue among people with disability in Australia, our research found that discrimination was a significant barrier that people with disability faced when looking for work, applying for jobs, and in the workplace. To this end, the DRC recommended legislation changes to strengthen the Disability Discrimination Act 1992 and to create a Disability Rights Act, which would offer greater protection of the rights to non-discrimination and equality before the law for people with disability, among other rights.

Discrimination in the workplace can be experienced from employers, coworkers, customers, and clients. This means that attitudinal change is required at multiple levels and across sectors, and that employers have a particularly important role to play in providing reasonable accommodations and promoting inclusion. Employers need to be provided with improved and easily accessible resources to enable them to hire, support, and develop the skills and careers of employees with disability. This includes information which is adaptable for different business needs and industries, and which helps employers navigate and utilise government and employment services. These improved resources should also address employer concerns regarding the potential needs and productivity of workers with disability, increase demand for the untapped potential of employees with disability, and ultimately build an employer's disability confidence. Employers must be supported to build inclusive workplaces with positive workplace cultures that help people with disability maintain their employment.

By employing people with disability and becoming disability-inclusive organisations, employers will signal the value and skills that employees with disability bring to the workplace. Additionally, attitude change interventions, which are co-designed with people with disability, are needed to actively work to change behaviour and target discrimination. Such co-designed interventions should be pilot tested, implemented and evaluated, and finally refined and scaled up. Long-term monitoring and evaluation can ensure these interventions are hitting the mark and working to shift attitudes.

Creating employment opportunities

The creation of more employment opportunities, including high-quality, suitable jobs, for people with disability requires action at multiple levels including national strategies and programs as well as through the development of local, place-based networks to boost employment opportunities for people with disability. While improved employment services incentivised to place individuals in appropriate jobs and greater employer resources to support individualised job design will improve the amount of suitable jobs available, more needs to be done to create employment opportunities in open employment for people with disability. For example, setting employment targets for people with disability with associated programs delivered at national, state and local levels; hiring schemes to increase employment of people with disability in the Australian Public Service and large businesses, including in leadership positions; social procurement strategies to incentivise organisations to employ people with disability; grant funding to support small businesses led by people with disability; and financial incentives for business to create jobs, hire, train, and adequately support people with disability.

Recommendations to improve future research

Our research has identified four key areas for future research which will benefit the quality and utility of the evidence: improved disability data, intersectional research, research done by and for people with disabilities, and policy evaluations.

Improved disability data

There is a well-recognised need to address the extensive data gaps on disability, which is a barrier to devising policy solutions to improve employment outcomes for people with disability. [58,64,65] Most quantitative studies described in this report used population-based survey data, which often includes detailed information on a wide range of characteristics including disability, employment, and mental health. However, population surveys are constrained by small sample sizes, which has implications for the generalisability of the findings to the whole population of people with disability in Australia as well as the potential to examine subgroups of the population including disability groups or intersecting identities such as age, gender, First Nations status, and ethnicity.

A recent development is the availability of whole population linked administrative data from different sources including government payments and services, tax, and health data through the Person Level Integrated Data Asset (PLIDA), which was used in one study described in this report. [29] In PLIDA, previously known as the Multi-Agency Data Integration Project (MADIP), it is possible to identify people with disability who are NDIS participants, Disability Support Pension (DSP) recipients, and people who reported a severe or profound core activity limitation in the Census. However, no disability indicators exist which identify a broader group of people with disability representative of the population of people with disability in Australia. There are also limited employment indicators (from Census, government payments or tax records) and mental health data (limited to health service use).

Alongside PLIDA, the Australia government is investing in the development of the National Disability Data Asset (NDDA), a new initiative to create a linked data resource, bringing together administrative datasets with a focus on improving opportunities, outcomes, supports and services for people with disability. By bringing together State and Territory data as well as national datasets, and a plan to develop disability indicators combining information from multiple data sources, the NDDA may address some of the data limitations of PLIDA to better understand the employment experiences, and their impact on mental health, for people with disability. However, research using administrative data needs to be complemented by population surveys and qualitative research to more fully understand the experiences, voices, and stories of people with disability.

Intersectional research

Intersectionality acknowledges how a person's social identities may interact to lead to increased experiences of discrimination or disadvantage. The intersectional experiences of people with disability reflect the cumulative ways that discrimination and disadvantage are experienced by people with disability based on intersecting characteristics such as age, gender, sexual orientation, Indigenous status, and ethnicity. This means that people with disability are not a homogeneous group. Instead, people with disability with different attributes will have different needs and outcomes, and the appropriate supports required to reduce inequalities will vary across the population.

To date, there has been a lack of intersectional quantitative disability research in Australia, in part due to small sample sizes in population surveys which has restricted the ability to examine subgroups of the disability population and consider the role of intersecting identities.

Newly available linked data sources provide opportunities to do more nuanced disability research, applying an intersectional lens to research questions. Building on our research which demonstrated the important role of personal factors in determining employment outcomes, including education, mental and physical health, housing, and finances, [32] future research should examine how employment and mental health outcomes vary according to intersecting social identities to ensure results are relevant to groups of people with disability and are appropriately informing policies and practice.

Research done by and for people with disability

Disability-inclusive research conducted by and for people with disabilities is important for upholding the rights of people with disability, as stated in the CRPD. The importance of engagement with people with disability in research and policy development has also been recognised at a national level in Australia. The National Disability Research Partnership (NDRP), funded by the Commonwealth Government, is a key initiative under the ADS to support a collaborative and inclusive research program to inform disability policy and practice. The NDRP agenda supports high-quality research led by and with people with disability to address the priorities of people with disability, with a focus on supporting research which gives people with disability real decision-making power, and building the capacity of researchers with disability. [66]

As well as upholding the rights of people with disability, disability-inclusive research also leads to better quality research which is relevant to the disability community. People with disability are experts on their own experience, and their input to the research process is invaluable to conduct best-practice and high-quality research. Disability research needs to place lived experience at the forefront, valuing the knowledge of people with disability, including though participatory research practices (including co-design and shared decision

making) and with appropriate remuneration. There are compelling reasons to include people with disability in research. The lived experience of people with disability can inform the development of research questions that are relevant to the disability community, processes which are accessible and appropriate, and can provide input on the interpretation of research findings and development of policy recommendations, leading to enhanced rigor and policy-relevance of the research and integration of diverse perspectives and expertise. Research on employment and mental health with lived experience at the forefront will build a high-quality evidence base to inform disability policy as well as strengthening disability research capacity and building career pathways for researchers with disability.

Policy monitoring and evaluation

Monitoring and evaluation are critical to understanding if and how policies and programs are impacting the employment outcomes of people with disability, thus evaluating progress (or lack of) in achieving the objectives set out in the ADS, Employ My Ability, and the CRPD. For example, we conducted an evaluation of employment programs for people with disability, finding evidence that individualised placement and support models improved employment outcomes among people with psychosocial disability as well as specialised programs for young autistic people and those with developmental disability. [49] However, our research also demonstrated the influence of personal and environmental factors on employment outcomes and the impact of other social determinants of health including education, housing, and financial hardship, highlighting other avenues for evaluation research which acknowledges the complex, intersecting nature of the social determinants of health. For example, it is unclear how government policy during the COVID-19 pandemic impacted, and is continuing to impact, the employment status and employment conditions experienced by people with disability. More studies are needed to examine the effects of the pandemic on the employment of people with

disability and evaluate the impact of policy to ensure that policies and programs are leading to progress in closing the gap in employment outcomes.

As such, monitoring and evaluation needs to be implemented in all new employment initiatives, programs and services to assess progress against the objectives of the ADS, guide employment policy reform, and ultimately improve the employment outcomes, mental health, and lives of people with disability.

Conclusion

Employment is a key way to promote the mental health and wellbeing of people with disability. However, there are large existing inequalities in employment for people with disability in Australia. People with disability are more likely to be unemployed, underemployed, and working in jobs with poor employment conditions and exposure to poor psychosocial job quality. These experiences have significant impacts on the lifetime mental health of people with disability. Action is needed to address these poorer employment outcomes and resulting mental health impacts. Our research has shown that policy measures relating to job preparedness, improving employment services, creating inclusive workplaces, and creating more jobs are needed to address these inequalities. More research, using improved data, applying an intersectional lens, done by and with people with disability, and monitoring and evaluating policy is crucial in order to guide policy solutions.

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Appendix 1: Included studies

Supplementary Table 1: Papers relating to mental health outcomes

Citation information	Study design	Data source, country	Methods	Disability population	Exposure	Outcome	Aim/research question	Key findings
Aitken et al 2021.[19]	Cohort (4 waves, 2011-2014)	Household, Income and Labour Dynamics in Australia (HILDA) survey Australia	Interventional effects causal mediation analysis	People who acquired a disability (two waves without disability followed by two waves with disability) who were aged 25-64 years	Disability acquisition Mediator: employment status and income	Mental health (Short Form-12 (SF-12) Mental Health Inventory – 5 (MHI-5))	To disentangle the mechanism linking disability and poor mental health by quantifying interventional effects through selected socioeconomic factors	Employment explained part of the decline in mental health experienced by people who acquired disabilities.
Aitken et al 2020.[20]	Cohort (17 waves, 2001-2017)	HILDA Australia	Fixed effects, effect modification	People who acquired a disability (two waves without disability followed by two waves with disability), aged 25-64 years	Disability acquisition Employment characteristics: occupational skill level, contract type	Mental health (SF-12 MHI-5)	Quantify the association between disability acquisition and mental health and assess if there is evidence of interaction between employment characteristics and disability acquisition	Acquiring a disability was associated with a substantial decrease in mental health score, suggesting poorer mental health. There was evidence of effect modification of the disability – mental health relationship by occupational skill level, such that people in lower skilled jobs experienced greater declines in their mental health compared to those in higher skilled jobs when they acquired a disability.
Aitken et al 2018.[21]	Cohort (4 waves, 2011-2014)	HILDA Australia	Causal mediation analysis	People who acquired a disability (two waves without disability followed by two waves with disability)	Disability status Mediators: material (including occupation), psychosocial, behavioural	Mental health (SF-12 MHI-5)	Estimate the relative importance of three distinct pathways from disability acquisition to mental health	The effect of disability acquisition was partly explained by the mediators. About a third of the total effect was explained by material factors.
Aitken et al 2017.[22]	Cohort (4 waves, 2011-2014)	HILDA Australia	Linear regression, effect modification	People who acquired a disability (two waves without disability followed by two waves with disability)	Disability status Demographic factors including employment	Mental health (SF-12 MHI-5)	Model relationships between disability acquisition and mental health and test for effect measure modification of this relationship by demographic and socioeconomic characteristics	People who acquired a disability had poorer mental health than people without disabilities. There was some evidence that being unemployed modified the effect of disability acquisition on mental health such that people who acquired a disability and were unemployed had particularly poor mental health.

Citation information	Study design	Data source, country	Methods	Disability population	Exposure	Outcome	Aim/research question	Key findings
Devine et al 2020.[23]	Mixed methods (Cohort data Wave 1: 2018, interviews: 2018)	Improving Disability Employment Study (IDES) Australia	Linear regression Semi-structured interviews	DES participants, with an emphasis on participants with psychosocial disabilities	Employment status DES-related factors (e.g., length and type of engagement with DES)	Mental health (SF-12 MHI-5) and personal wellbeing (PWI)	Explore whether and how DES participants with psychosocial disabilities experience recovery in the context of DES	DES participants who were in employment had better mental health and wellbeing, and those in better quality jobs (e.g., not experiencing hours underemployment) had better mental health. Five distinct recovery narratives were identified, showing that a positive influence on mental health recovery is possible when DES processes align with recovery-oriented practices.
Emerson et al 2020.[24]	Cross-sectional	Annual Population Survey (2017-18) Life Opportunities Survey Community Life Survey (2016-17) United Kingdom	Linear regression, effect modification	Created disability measure which included individuals with long-term impairments which in interaction with barriers may hinder full and effective participation in society, including individuals aged 18-64 years	Disability status Socioeconomic status characteristics, including employment status	Personal wellbeing	Determine the magnitude of differences in wellbeing between adults with and without disability, and if differences are moderated by factors such as employment status	People with disabilities had lower wellbeing than people without disabilities in all employment status categories. The magnitude of difference was greater for individuals who were unemployed or out of the labour force, compared to being employed.
Milner et al 2017.[25]	Cohort (14 waves, 2001-2014)	HILDA Australia	Fixed effects linear regression, effect measure modification	Participants who reported a long-term health condition or disability	Hours under-employment	Mental Health (SF-12 MHI-5)	Evaluate if people with disabilities are more likely to experience underemployment than people without disabilities Explore if people with disabilities have greater decreases in their mental health when they are underemployed compared to people without disabilities	A slightly greater proportion of people with disabilities experienced underemployment than people without disabilities. People with disabilities experienced poorer mental health than people without disabilities, but their mental health was especially poor when they reported being underemployed.
Shields et al 2023.[26]	Cohort (four waves, 2016-2019)	HILDA Australia	Causal mediation analysis	People who reported a long-term health condition or disability for two consecutive waves	Disability status Mediator: employed, unemployed or wants to work	Mental health (SF-12 MHI-5)	Assess if the disability to mental health relationship is mediated by employment status	About a fifth of the decrease in mental health experienced by young people with disabilities was due to being unemployed or not in work.

Citation information	Study design	Data source, country	Methods	Disability population	Exposure	Outcome	Aim/research question	Key findings
Shields et al 2022.[27]	Cross-sectional (Wave 9C1: 2020)	Longitudinal Study of Australian Children (LSAC) Australia	Linear regression, effect measure modification	Participant reported a condition which had lasted or was likely to last for six months or more	Employment status Disability status	Kessler-10 Psychological Distress	Quantify the association between employment status and mental health among young Australians, and test for effect modification by disability status	The association between employment and distress differed by disability status. Young people without disabilities had moderate levels of distress regardless of employment status. Young people with disabilities had mean scores indicating high levels of distress; scores were particularly elevated when young people with disabilities were unemployed.
Shields et al 2020.[28]	Cohort (three waves from each of three cohorts)	Longitudinal Surveys of Australian Youth (LSAY), cohorts Y03, Y06, and Y09 Australia	Logistic regression, effect modification	Disability or health condition which limits work or education	Labour force status Disability status	Kessler-6 Psychological Distress Scale	Quantify the association between labour force status and mental health, and if this relationship is modified by disability status	Being unemployed was associated with increased odds of distress. Young people with disabilities had increased odds of distress both when employed and unemployed compared to their peers without disabilities.

Supplementary Table 2: Papers relating to Selection into work

Citation information	Study design	Data source, country	Methods	Disability population	Exposure	Outcome	Aim/research question	Key findings
Bollier et al 2021. [45]	Cross-sectional (2018)	Attitudes Matter Survey Australia	Descriptive statistics	Not applicable: attitudes not presented by disability status	If employers should be allowed to refuse to hire people with disability; if workplaces are accepting of people with disabilities		Understand about personally held attitudes as well as society or community perceptions about people with disabilities	A fifth of participants said employers should be allowed to refuse to hire people with disabilities. Two in five respondents thought workplaces were accepting of people with disabilities.
De Rose et al 2023. [40]	Qualitative (2021)	Youth Employment Study (YES) Australia	Semi-structured interviews undertaken with and analysed with co-researchers with disabilities	Young people with intellectual and/or psychosocial disabilities	Career development, job seeking, employment supports, relationship between employment and health and well-being, impacts of pandemic		Use an inclusive research design to explore the employment experiences and perspectives of young people with cognitive disabilities who are often underrepresented in research	Job seeking is difficult due to competitive labour markets, limited networks, insufficient support to build skills, and difficulty balancing health and job seeking. Individualised supports for job seeking with ongoing assistance are valued by young people with disabilities. Work that matched skills, aspirations, and work-life balance was highly sought and rarely gained.
Devine et al 2022. [47]	Cohort (2 waves; Wave 1: 2018, Wave 2: 2019-2020)	IDES Australia	Descriptive statistics	Participants in Disability Employment Services (DES)	Disability, employment, experience with DES, health, finances, housing, transport		Examine the employment outcomes and key factors that influence the ability of DES participants to gain and maintain work Explore participant expectations and experiences of DES services	About half of participants were unemployed at both Waves. Disability discrimination was commonly reported during the job seeking process. Participants wanted a range of supports from DES. Those that reported better support were more likely to be employed.
Devine et al 2021. [38]	Cohort (2 waves; Wave 1: 2018, Wave 2: 2019-2020)	IDES Australia	Descriptive statistics, logistic regression	Participants in Disability Employment Services (DES)	Vocational, non-vocational, and structural barriers to work	Employment status	Examine the barriers to employment reported by participants and assess if barriers were associated with employment outcomes	Many participants experienced multiple barriers to employment. The odds of gaining work decreased as the number of barriers increased.

Citation information	Study design	Data source, country	Methods	Disability population	Exposure	Outcome	Aim/research question	Key findings
Devine et al 2020. [43]	Qualitative (2020)	Key stakeholders with respect to DES and NDIS Australia	Semi-structured interviews	People with disabilities accessing NDIS and DES with employment goals in their plan, disability advocacy group, peak bodies representing DES providers, DES providers	Perspectives on functioning of NDIS/DES interface and influence on employment outcomes, key issues relevant to NDIS/DES interface		Understand key stakeholder perspectives on the current NDIS/DES interface and key issues relevant to the NDIS/DES interface	There was a need for improved understanding of the work capabilities of people with disabilities, including for work experience opportunities. Participants felt that better connection between NDIS and DES would benefit them. Challenges with the workforce were reported, and there was a lack of clear information to help the NDIS and DES workforces work together.
Devine et al 2020.[23]	Mixed methods (Cohort data Wave 1: 2018, interviews: 2018)	IDES Australia	Linear regression Semi-structured interviews	DES participants, with an emphasis on participants with psychosocial disabilities	Employment status DES-related factors (e.g., length and type of engagement with DES)	Mental health (SF-12 MHI-5) and personal wellbeing (PWI)	Explore whether and how DES participants with psychosocial disabilities experience recovery in the context of DES	DES participants who were in employment had better mental health and wellbeing, and those in better quality jobs (e.g., not experiencing hours underemployment) had better mental health. Five distinct recovery narratives were identified, showing that a positive influence on mental health recovery is possible when DES processes align with recovery-oriented practices.
Devine et al 2020.[32]	Qualitative (2017-2018)	IDES Australia	Semi-structured interviews	People with psychosocial disabilities currently accessing DES program			To understand the contextual factors in the lives of DES participants with a psychosocial disability that influence their engagement with and potential benefits from the DES program in the context of the 2018 DES reforms	Multiple and intertwining circumstances impact jobseekers' ability to engage with DES and gain and maintain employment. Important factors included education, traumatic life events, co-occurring mental and physical health conditions, financial and housing insecurity, and variable employment history.

Citation information	Study design	Data source, country	Methods	Disability population	Exposure	Outcome	Aim/research question	Key findings
Devine et al 2019.[39]	Qualitative (2017-2018)	IDES Australia	Semi-structured interviews	People with psychosocial disabilities currently accessing DES program			To understand the role of consumer choice within DES reforms by exploring factors that influence the decision-making of DES participants and their broader access to work	Participants may not exercise control to choose or change their DES providers even when they have the opportunity to do so. This is due to challenges in exercising control to move between providers and the influence of complex life circumstances.
Dimov et al 2023. [44]	Cross-sectional	IDES Australia	Descriptive statistics	Participants in DES with physical and/or psychosocial disability	Perceptions of discrimination when seeking employment and when in the workplace		To investigate perceived discrimination among people with disability accessing DES in relation to their experiences looking for work or during employment and to explore differences for people with psychosocial and physical disabilities	Over a third of IDES participants reported one or more experiences of discrimination while seeking employment (which was higher for people with physical disability compared with psychosocial disability). Over half of IDES participants reported one or more experiences of discrimination while in the workplace (which was higher for people with psychosocial disability compared to physical disability).
Dimov et al 2021. [41]	Cross-sectional (Wave 1, 2020-2021)	YES Australia	Descriptive statistics	Young people aged 15-25 years with self-reported disability or chronic health condition	Employment status, mental health		Understand the experiences of young people during the COVID-19 pandemic, including in relation to their experiences of employment and wellbeing	Fewer young people with disabilities were employed prior to the pandemic (February 2020) and at the time of the survey during the pandemic compared to young people without disabilities. Over half of YES participants were experiencing moderate or severe symptoms of anxiety and/or depression.

Citation information	Study design	Data source, country	Methods	Disability population	Exposure	Outcome	Aim/research question	Key findings
Olney et al 2022. [46]	Synthesis of results from three studies (2018-2020)	IDES DES-NDIS interface study Data Governance and the NDIS Australia	Narrative synthesis	People involved in DES and/or the NDIS, service providers and other key stakeholders			Examine the degree to which DES and NDIS complement and work with one another with respect to employment for people with disabilities	People with disabilities experience vocational and non-vocational barriers to gaining and maintaining employment. People with disabilities have difficulty finding service providers that meet their needs. NDIS and DES systems are not mutually reinforcing, when intersecting and collaborating systems would benefit the employment outcomes of people with disabilities.
Shields et al 2022.[42]	Cohort (8 waves; 2004-2018)	LSAC Australia	Group-based trajectory modelling, multinomial logistic regression	Childhood disability at each wave used to create trajectories (groups) of disability over time (age 4/5 to 16/17 years)	Disability trajectory group	Labour force status	Identify trajectories of disability throughout early life and explore association between disability trajectory group membership and labour force status	About a quarter of young Australians experience disability during early life. Disability groupings were associated with labour force status – those with consistently high prevalence of disability more likely to be out of the labour force. Those in low increasing group had increased risk of unemployment.
Weld-Blundell et al 2021. [49]	Systematic review	Eight databases Evidence from high income countries	Systematic search, risk of bias assessment, narrative synthesis	Working age (16-64 years) people with psychosocial disability, autism, or intellectual disability	Randomised controlled trials of interventions aimed at increasing employment	Open/competitive or non-competitive/supported employment at follow-up closest to the end of the intervention	Systematically review trials of vocational interventions that aimed to improve employment outcomes of people with psychosocial disability, autism, and/or intellectual disability to inform understanding about what intervention investments may work best for these cohorts	26 trials were included, with most focused on psychosocial disability. 3 included people with autism; none included people with intellectual disabilities. All studies were at high or moderate risk of bias. Evidence of beneficial effect of Individual Placement and Support compared to control conditions for people with psychosocial disability and evidence for Project Search and ASD supports for people with autism.

Citation information	Study design	Data source, country	Methods	Disability population	Exposure	Outcome	Aim/research question	Key findings
Xu & Stancliffe 2019. [48]	Cross-sectional (2007-2011)	Publicly available Transition to Work (TTW) data on services in metropolitan Sydney Australia	Descriptive statistics	Clients in TTW	TTW program and related characteristics (e.g., number of clients enrolled in a program)	Destination at end of TTW program (e.g., employment, education)	Use publicly available data to evaluate the employment outcomes achieved by TTW service providers in Sydney, Australia	There were large differences in the employment outcome performance of individual service providers. Providers that served more clients generally had higher overall employment rates at the end of the program. About half of TTW participants were supported to gain employment by the time they exited TTW.

Supplementary Table 3: Papers relating to Selection into certain types of jobs and exposure to poor psychosocial working environments

Citation information	Study design	Data source, country	Methods	Disability population	Exposure	Outcome	Aim/research question	Key findings
Aitken et al 2022.[29]	Mixed methods	DES participants and consultants Data from WISE Employment, HILDA survey, Multi-Agency Data Integration Project (MADIP) Australia	Focus groups Descriptive analysis, fixed effects linear regression	Participants in DES Job seekers involved in WISE employment program HILDA: Participants who reported a long-term health condition or disability, were of working age (15-64 years), and were in the labour force MADIP: core activity limitation as recorded in Census	Working hours (e.g., part-time)	Mental health (SF-12 MHI-5) Healthcare use (e.g., mental healthcare services, prescription of mental health scripts)	Investigate the value of part-time (<30 hours per week) employment for individuals in the DES program	All categories of working hours are associated with large beneficial mental health effects compared to being unemployed. These benefits are particularly pronounced for people with disabilities. If all participants with disability who are in DES or job active were moved from not working to part-time employment there would be significant savings in terms of healthcare services and mental health scripts.
Emerson et al 2021. [52]	Cross-sectional (three waves; Wave 1: 2009-2011, Wave 2: approx. 1 year after Wave 1, Wave 3: approx 2.5 years after Wave 2)	Life Opportunities Survey United Kingdom	Weighted prevalence rates, adjusted prevalence rate ratios	Self-reported disability with at least mild difficulty and often or always limits activities	Disability status	Experience of discrimination	Assess the probability that working-age British adults have experienced discrimination in the past 12 months Assess the nature of this discrimination	About a quarter of participants with disability reported employers as a source of disability discrimination. The most common forms of workplace disability discrimination were being given fewer responsibilities and not being promoted.
Kavanagh et al 2016.[50]	Cross-sectional (Wave 1, 2012-2014)	Ten to Men Australia	Descriptive statistics, linear regression	Washington Group Short Set: those who reported 'a lot of difficulty' or 'cannot do' to one or more domain and aged 18-55 years	Demographic and socioeconomic factors (e.g., employment status, occupational skill level)		Provide a comprehensive comparison of a large sample of men with and without disabilities across a range of indicators	Men with disabilities were much less likely to be employed than men without disabilities. When they were in jobs, men with disabilities were less likely to be in high skilled jobs. They worked fewer hours per week and were more likely to report hours underemployment than men without disabilities.
Milner et al 2020.[51]	Cohort (13 waves, 2005-2017)	HILDA Australia	Random and fixed effects linear regression	Working age (15-64 years) with any type of long-term health condition or disability	Disability status Psychosocial job stressors	Days of sickness absence in past 12 months	Examine relationship between disability and sickness absence in the working-age population	The mean number of sick days was higher for people with disabilities. Having lower levels of job control was also associated with greater likelihood of taking sick leave.

Citation information	Study design	Data source, country	Methods	Disability population	Exposure	Outcome	Aim/research question	Key findings
Milner et al 2017.[25]	Cohort (14 waves, 2001-2014)	HILDA Australia	Fixed effects linear regression, effect measure modification	Participants who reported a long-term health condition or disability	Hours underemployment	Mental Health (SF-12 MHI-5)	Evaluate if people with disabilities are more likely to experience underemployment than people without disabilities Explore if people with disabilities have greater decreases in their mental health when they are underemployed compared to people without disabilities	A slightly greater proportion of people with disabilities experienced underemployment than people without disabilities. People with disabilities experienced poorer mental health than people without disabilities, but their mental health was especially poor when they reported being underemployed.
Ye et al 2023.[30]	Cohort (five waves, 2015-2019)	HILDA Australia	Fixed effects linear regression	Participants who reported a long-term health condition or disability, were of working age (15-64 years), and were in the labour force	Part-time or full-time employment status	Mental health (SF-12 MHI-5)	Explore the impact of disability on the association between employment status and mental health, comparing part-time and full-time employment to unemployment	People with disabilities are less likely to work full-time compared to people without disabilities. Part-time work and full-time work are both associated with better mental health scores compared to being unemployed among people with disabilities.

Supplementary Table 4: Papers relating to Differential selection out of work

Citation information	Study design	Data source, country	Methods	Disability population	Exposure	Outcome	Aim/research question	Key findings
Brotherton et al 2020. [54]	Qualitative	Sampled from DES provider Australia	Semi-structured interviews	People with intellectual disabilities who had retired from mainstream employment			To explore the transition to retirement for people with intellectual disability who had been working in mainstream employment	Retirement was viewed as a 'solution' to address problems related to mismatches between the requirements of work and personal circumstances. This had the effect of pushing people into retirement. Participants had mixed feelings about retirement, with many missing work, people at work, and social contact. Participants wanted to take part in activities but weren't sure how to make this happen.
Emerson et al 2022. [56]	Cohort (COVID-19 data collected in May 2020, baseline data taken from various earlier waves of each study)	Millennium Cohort Study Next Steps British Cohort Study 1970 National Child Development Study United Kingdom	Poisson regression, random-effects meta-analysis	Reported a physical or mental health condition lasting 12 months or more that had reduced ability to carry out day-to-day tasks, with limitation lasting for at least 6 months; aged 18-64 years	Disability status	Lost employment	Compare the short-term impact of the COVID-19 pandemic on outcomes for working-age adults with and without disabilities	People with disabilities did not appear to be more likely to lose employment than people without disabilities.
Emerson et al 2021. [55]	Cohort (Wave 9 collected in 2017-2018 and three special monthly surveys in 2020)	Understanding Society United Kingdom	Poisson regression	Respondents aged 16-64 years who reported a long-standing impairment, illness, or disability and reported difficulties with any of 12 life areas	Disability status	Lost employment, reduced working hours	To compare the short-term impact of the 2020 COVID-19 pandemic and first lockdown on the employment and financial security of working-age adults with and without disabilities	People with disabilities were less likely to be employed prior to the pandemic, but there were no significant differences in redundancy in the first three months of lockdown between people with and without disabilities. There was some evidence that people with disabilities were more likely to be working reduced hours.

Citation information	Study design	Data source, country	Methods	Disability population	Exposure	Outcome	Aim/research question	Key findings
Milner et al 2018. [53]	Cohort (15 waves, 2001-2015)	HILDA Australia	Survival analysis (Kaplan-Meier curves and Cox proportional hazards regression models), effect modification	People who reported a long-term health condition or disability >1 time across all study waves; restricted to ages 17-64 years	Disability status Employment contract arrangement, occupational skill level, psychosocial job quality	Employment status	Identify characteristics of employment associated with dropping out of work and assess whether these are different for workers with compared to without disabilities	People with disabilities had a greater risk of leaving employment compared to people without disabilities. Low-skilled occupation, low psychosocial job quality, and casual/labour hire/fixed term contract predicted exit from work. These factors predicting exit were similar for people with and without disabilities.

Supplementary Table 5: Papers relating to personal- and environmental-level factors

Citation information	Study design	Data source, country	Methods	Disability population	Exposure	Outcome	Aim/research question	Key findings
Devine et al 2020.[32]	Qualitative (2017-2018)	IDES Australia	Semi-structured interviews	People with psychosocial disabilities currently accessing DES program			To understand the contextual factors in the lives of DES participants with a psychosocial disability that influence their engagement with and potential benefits from the DES program in the context of the 2018 DES reforms	Multiple and intertwining circumstances impact jobseekers' ability to engage with DES and gain and maintain employment. Important factors included education, traumatic life events, co-occurring mental and physical health conditions, financial and housing insecurity, and variable employment history.
Fortune et al 2022.[31]	Scoping review	Six databases, articles published between 2000-2020	Systematic scoping review	People reporting long-term impairment, activity limitation, or participation restriction associated with a health condition. Included studies where people with disabilities were identified based on accessing disability-specific services	Concept: area-level factors associated with employment outcomes	Context: studies using area-level factors operating at geographic scales which correspond to people's daily activities and working lives	To investigate associations between area-level environmental factors and employment for people with disabilities	Identified 18 articles for inclusion that reported on six domains of area-level factors including socioeconomic environment, services, physical environment, social environment, governance, and urbanicity. All included studies found some associations between area-level factors and employment outcomes for people with disabilities. The evidence base was heterogeneous and not suitable to inform interventions.

Citation information	Study design	Data source, country	Methods	Disability population	Exposure	Outcome	Aim/research question	Key findings
Zhou et al 2019.[33]	Ecological, cross-sectional study (2016)	Australian Census, 2016 Australia	Linear regression	Core activity limitation among working-age individuals (15-64 years)	Characteristics of people with and without disabilities (e.g., male to female sex ratio, percentage completed year 12) Characteristics of geographic area (e.g., employment rate, remoteness)	Labour force participation rate of people with disabilities	To examine geographic variation (reflected by SA2) in labour force participation rate of working-age people with disabilities in Australia and associated factors	Labour force participation varied greatly by area although people with disabilities had lower participation rates than people without disabilities in all areas. The participation rate was higher in areas where people with disabilities had higher education, higher household incomes, and mainly spoke English at home. There was not one SA2 where the participation rate of people with disabilities was equal to that of people without disabilities.

Appendix 2: Methods and data sources

Qualitative research

Qualitative methods were used in five of our included studies in the form of **interviews** and **focus groups**. These studies included individuals who may have been underrepresented in traditional surveys, such as people with psychosocial disability participating in Disability Employment Services (DES) [32], or young people with cognitive (e.g., intellectual disability) disability. [40]

In addition to including populations who may otherwise be excluded from research, these methods allowed us to gain a further understanding of the context of people's lives, and answer questions relating to *why* we observe certain results. For example, we used qualitative methods to understand why people with intellectual disability working in mainstream employment moved into retirement. [54]

Quantitative research

In some quantitative studies we used **cross-sectional data** to show a 'snapshot' in time, such as the proportion of men with disability experiencing unemployment. [67] In other studies, we used **longitudinal data**, which follows the same group of people over time. Using longitudinal data allows us to look at patterns over time and to look at cause and effect. This means we can answer questions like does the type of job a person with a disability has predict whether they leave a job [53], or estimating how changes in the hours a person with disability works are associated with changes in mental health. [30]

We used a range of data sources which are summarised below in Supplementary Table 6.

Reviews

We used two different types of reviews to understand existing evidence. We used **scoping reviews** to map and summarise existing evidence. We used a scoping review to assess what was known about if personal and environmental factors influence employment rates for people with disability. [31]

Systematic reviews bring together existing studies related to a specific research question, assess their quality and risk of bias (that is, that the results may not represent the true relationship), and can answer questions about how effective an intervention is. We used a systematic review of trials which included interventions aimed at increasing employment among people with autism, intellectual and psychosocial disability. We were then able to determine how trustworthy the existing evidence was, and how effective different interventions were for employment outcomes. [49]

Supplementary table 6: Data sources used in quantitative studies

Name of data source	What is it?	Measurement of disability
Attitudes Matter Survey	• First national survey on attitudes toward people with disability in Australia, with data collected in 2018 • Survey developed by CRE-DH team and by people with disability who were employed on the project team • Examines personally held and societal attitudes toward people with disability • Includes responses from over 2000 participants [45]	• Disability status gathered through a single question which asks if a participant has a long-term health condition or disability that has lasted or is likely to last for six months or more
Australian Census of Population and Housing	• Collected every five years • Collects whole of population data	• Collects data on core activity limitation only (i.e., self-care, communication, body movement)
Australian Longitudinal Study on Male Health (Ten to Men)	• First nationally representative longitudinal study of Australian men • Aim of study is to examine male health and its key determinants • Recruited males from selected Statistical Areas aged 10-55 years during Wave 1 (2013-14), with four waves of data currently available • Over 16,000 participants included in Wave 1 of data collection [68]	• Disability status ascertained using the Washington Group Short Set
Household, Income and Labour Dynamics in Australia (HILDA)	• Nationally representative longitudinal study of Australians which began in 2001 • Collects data from participants annually, with 22 waves of data currently available • Households were selected within census collection districts and approached for participation • Collects a wide range of information on demographic, economic, social, and health topics • Includes responses from over 13,000 participants at most recent wave [69]	• Disability status gathered through a single question which asks if a participant has a long-term health condition, impairment, or disability that restricts them in everyday activities and has lasted for six or more months.
Improving Disability Employment Study (IDES)	• First national study of jobseekers engaging with the Disability Employment Services (DES) program • Developed by the CRE-DH • Two waves of data, collected 12 months apart • Aim of the study was to examine sociodemographic factors and experiences engaging with employment support among jobseekers • Includes responses from over 300 DES participants at Wave 1[70]	• Washington Group Short Set and Extended Set to capture difficulties with functioning • Main type of impairment(s) identified by experts on IDES research team

Longitudinal Study of Australian Children (LSAC)	• Ongoing, nationally representative study of Australian children that began in 2004 with two cohorts (child aged 4 years; baby aged 0 years) • Participants selected from Medicare database and typically interviewed every two years • Currently nine waves of data available • Aim of the study is to track children's development over time and provides detailed information on children and their families • Over 4,000 participants were recruited into each cohort at its inception [71]	• Disability status gathered through a single question which asks if the child has a medical condition or disability which has lasted for six months or more
Longitudinal Survey of Australian Youth (LSAY)	• Series of ongoing nationally representative longitudinal surveys of young people • Students at schools are selected to participate in the OECD PISA at age 15, and are followed up to age 25 years • Six cohorts have been established (1995, 1998, 2003, 2006, 2009, 2015) • Aim of the survey is to collect annual information on young people's experiences as they transition from secondary school to further education and the labour force • Over 10,000 participants are included in Wave 1 of each LSAY cohort [72]	• Disability status gathered through a single question which asks if participants have a disability or health problem lasting more than six months which limits the amount or type of work or study a participant can do
Person Level Integrated Data Asset (PLIDA) *Previously named the Multi-Agency Data Integration Project (MADIP)*	• Linked longitudinal data asset that combines administrative datasets, the Census of Population and Housing, and national surveys • Provides information on health, education, government payments, income and taxation, employment, and population demographics for the Australian population over time • Massive data source providing information on over 22 million Australians [73]	• Disability information can be drawn from a number of different sources, depending upon which datasets are linked (e.g., disability information from census, based on government benefits payments)
Youth Employment Study (YES)	• Study of young Australians during the COVID-19 pandemic • Led by researchers at the Disability and Health Unit • Includes three waves of data collected from participants aged 15-25 years between 2020-2022 • Focused on the employment of young people during the pandemic with additional questions focused on health, wellbeing, and education [74]	• Disability status ascertained through a question asking if participants have a long-term health condition, disability, or impairment that has lasted for six months or more