



Original Research

Healthcare access among people with and without disabilities: a cross-sectional analysis of the National Socioeconomic Survey of Chile

Danae Rodríguez Gatta^{a,c,*}, Elena S. Rotarou^{b,c}, Lena Morgon Banks^a, Hannah Kuper^a

^a International Centre for Evidence in Disability, Department of Population Health, Faculty of Epidemiology and Population Health, London School of Hygiene and Tropical Medicine, London, United Kingdom

^b National Department of Public Health, Faculty of Medicine and Science, Universidad San Sebastián, Santiago, Chile

^c Millennium Nucleus Studies on Disability and Citizenship (DISCA), Santiago, Chile



ARTICLE INFO

Keywords:

Disability
Healthcare access
Health equity
Chile

ABSTRACT

Objectives: There is a lack of data on health inequities experienced by people with disabilities in Chile. Hence, this study aimed to compare healthcare utilization, coverage, and barriers to accessing health services among people with and without disabilities in Chile.

Study design: Secondary cross-sectional study.

Methods: We analysed data of the 2022 National Socioeconomic Survey of Chile. People with disabilities were identified based on the Washington Group Questions. Multivariable logistic regressions were performed to compare the indicators of utilization, coverage, and barriers to accessing healthcare between people with versus without disabilities. Adjusted odds ratios (aOR) were reported with 95 % confidence intervals (95 % CI).

Results: A total of 192,666 participants were included in the study; persons with disabilities represented 10 % of the sample (n = 21,769). People with disabilities were more likely to have had a health problem (aOR, 2.22; 95 % CI, 2.12-2.32) and more frequently used any type of health consultation, than those without disabilities. The coverage of adult health check-ups (aOR, 0.88; 95 % CI, 0.81-0.96) and Pap tests among women (aOR, 0.76; 95 % CI, 0.70-0.82), were lower among those with disabilities. Reports of experiencing any barrier to accessing healthcare were more common among people with disabilities.

Conclusions: People with disabilities in Chile continue to experience health inequities, both in terms of higher healthcare needs and lower coverage, and various barriers to accessing healthcare. Thus, a disability lens needs to be mainstreamed in the health system to leave no one behind.

1. Introduction

There are currently 1.3 billion people with disabilities globally, and this number is continuing to increase largely due to population growth and ageing.¹ The experience of disability is inherently human and represents people "... who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others".^{1,2} Even though people with disabilities can live healthy lives, they commonly experience poorer health than others in the population.¹ The different pathways linking disability to poorer health include the impacts of underlying health conditions, a higher prevalence of comorbidities and disease risk factors, and adverse social determinants of health.^{1,3,4} People with disabilities also face many barriers to access

health services, including structural issues such as inaccessibility, stigma, and discrimination.^{1,3} Hence, the health access and coverage of healthcare is lower among those with disabilities, despite having increased health needs.^{1,3,5} This context has created critical health inequities, including an average 14-year mortality gap.⁶ These deaths could be avoided, in some cases, by quality healthcare.⁷

In Latin America and the Caribbean (LAC), there is a large number of people with disabilities, but little evidence regarding health inequities.^{8,9} A recent systematic review highlighted the sparsity of disability-disaggregated data on general healthcare access, especially describing differences in coverage, quality, and affordability of healthcare by disability status in the region.⁹ This dearth of data is also apparent in Chile, the focus of the current study. Chile is a South American country with about 20 million inhabitants.¹⁰ It is a high

* Corresponding author. International Centre for Evidence in Disability, Department of Population Health, Faculty of Epidemiology and Population Health, London School of Hygiene and Tropical Medicine, London, WC1E 7HT, United Kingdom. danae.rodriguez@lshtm.ac.uk

<https://doi.org/10.1016/j.puhe.2025.02.010>

Received 15 August 2024; Received in revised form 19 December 2024; Accepted 6 February 2025

Available online 22 February 2025

0033-3506/© 2025 The Authors. Published by Elsevier Ltd on behalf of The Royal Society for Public Health. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

income country, yet in 2022, the multidimensional poverty rate was about 17 %, ¹¹ and the country is characterised by high income inequality (Gini Index: 44). ¹² The health system is dual, with a public and private health financing scheme, and mixed health service provision. ¹³ All workers must pay health contributions to either the private or the public health insurance, to which most of the population is affiliated (81 %). ¹⁴ The public health network is mainly state funded and run by Regional Health Services, which organise secondary and tertiary care (e.g. hospitals and specialist centres), while primary care is decentralised to local governments. ^{13,15} Furthermore, the health system is committed to universal health coverage, guaranteeing care for 87 selected health conditions, including provision of preventive health check-ups. ^{16,17}

To date, three robust quantitative studies have investigated health inequities among people with disabilities in Chile. ⁹ One study analysed healthcare use, including sexual and reproductive health (SRH) services, among deaf people based on 2011 population-based data. ¹⁸ Similarly, other studies used 2013 and 2015 national survey data to investigate barriers to healthcare and use of cancer screening services among people with disabilities in the country. ^{19,20} That research showed that women with disabilities were less likely to undergo cancer screening and that reports of barriers experienced in the health system were significantly more common among people with disabilities. ^{18–20} There is a need for new analyses, as these previous studies use data that is a decade or more old, focused on a specific impairment group (i.e. deafness) or type of service (i.e. cancer screening) ^{18–20} and/or did not use one of the gold-standard measurements of disability, such as the Washington Group Questions (WGQ). ²¹

It is essential to have a comprehensive overview of current healthcare access disaggregated by disability to ascertain whether health inequities persist nowadays in Chile, including all impairment types and health services. Therefore, the aim of this study is to compare healthcare utilization, coverage, and barriers to accessing health services among people with and without disabilities – as defined per the WGQ – in Chile.

2. Methods

2.1. Study design and participants

In this secondary cross-sectional study, we analysed data of the 2022 National Socioeconomic Survey of Chile (NSES). ¹¹ The NSES is a household survey that seeks to ascertain the socioeconomic status of the population and identify priority groups for social policy. ¹¹ The target population are people living in private residences. The 2022 NSES sampling frame of private residences was mainly determined based on the 2017 Census. The sampling design was probabilistic, stratified, and multistage, to obtain a national, regional, and geographically representative sample. In total 72,056 households and 202,231 persons participated in the survey (response rate of 69 %). Further details can be found online in the Sampling Design Methodology report. ¹¹ Data were collected between November 2022 and February 2023. The anonymised dataset is freely available in the public domain. ¹¹

2.2. Procedures

The main survey respondent was an adult member of a given household. The survey comprised eight modules, including one on health. Three main outcomes were included in the present analysis: health utilization (i.e., individuals that sought and used services following a health problem), health coverage (i.e., individuals – with realised or unrealised health needs – that received preventive screening), and barriers to accessing healthcare (i.e., individuals who accessed care but experienced difficulties at some point of the healthcare seeking journey).

Health utilization was determined based on several questions. First, whether participants had received medical care, if they reported having had a health problem in the last three months (0 = no, 1 = yes). Reasons

for unmet need and forgone care in any service type were also examined. Second, type of health service received was indicated by seven independent variables (yes/no), including general practitioner, mental health, specialist, and dental consultations, emergency care, diagnostics, and hospitalization. Third, the number of visits was calculated among participants who reported having received either general practitioner (GP), emergency, mental health, specialist, or dental consultations, and then categorized as 1, 2, 3, 4, or above 5. Finally, the variable “where received healthcare” was categorized as public, private, mixed health provider, or other (e.g., at home by a doctor in the family or an acquaintance, etc.), for those who received any type of care.

Health coverage was assessed through reported access to the Preventive Health Check-up program (Supplementary Table S1). This periodic, free, and voluntary program is available to all people with public or private health insurance throughout their life cycle. ¹⁷ Three dichotomous variables (yes/no) were included for health check-ups in the last year among children (5–9 years), adults (15–64 years), and older people (65 years or above). Cancer screening among women was determined through two dichotomous variables (yes/no): Pap test (25–64 years) and mammogram (50–59 years). Reasons for unmet need and forgone care in mammograms were also examined.

Barriers were analysed using five dichotomous variables (yes/no) on reported difficulties experienced while accessing healthcare, among those who reported to have received medical care in the last three months, including difficulties in reaching a health center, getting an appointment, receiving care, paying for care due to cost, and obtaining medications. Our analyses compared the differences in health utilization, coverage, and barriers by disability.

The main exposure of interest was disability. This variable was assessed through the Washington Group (WG) Short Set of Questions (Supplementary Table S2). ²¹ Persons who reported having “a lot of difficulty” or “cannot do at all”, in any of six domains (seeing, hearing, mobility, communicating, cognition, and self-care) were considered as having a disability. Moreover, functional difficulty type was categorized as none, seeing, hearing, mobility, communicating, cognition, and multiple.

Further independent variables were included to help elucidate pathways for the association of disability and health inequities, including:

- Social determinants of health: age (categorized in groups of 10 years), sex (assigned at birth, male/female), indigenous peoples (yes/no), place of birth (born abroad or in Chile), residence (rural, urban), schooling (none, primary, secondary, and higher), and income quintile (1st lowest to 5th highest).
- Health access facilitators: health insurance (public, private, armed forces and other, and none) and level of assistance required (0 = none to 3 = severe dependence; Supplementary Table S2).
- Existing health conditions: any health problem (disease/accident, yes/no), under treatment for selected health conditions (0 = Not under treatment, 1 to 8 = different health conditions), any of above health conditions (previous variable dichotomized, yes/no), and child’s nutritional state (malnourished [or at risk of], normal, overweight, and obese).

2.3. Statistical analysis

Only participants above four years had information on the WG questions. Therefore, observations of participants below five years were dropped (n = 9565), leaving 192,666 participants. Descriptive statistics were used to report the sociodemographic and health characteristics of the participants with and without disabilities. Differences between groups were examined using the p-values drawn from multivariable logistic regression models of a given characteristic and disability, adjusted for age and sex. Analyses were undertaken to elucidate the main outcomes among the study population and the different pathways

linking disability to health inequities, such as social determinants of health, health access facilitators, and existing health conditions. Multi-variable logistic regressions were performed to compare the occurrence of our outcomes of interest between people with versus without disabilities (referent group). Adjusted odds ratios (aOR) were reported with 95 % confidence intervals (95 % CI). A staged analysis was performed to identify potential confounders. However, age and sex were considered *a priori* confounders and included in all the analyses.¹ Sequential adjustments were undertaken for place of birth, residence, schooling, income, and health insurance, and fully adjusted models were produced. Changes of about 10 % from previous odds ratios were an indicator of a potential confounding effect of a variable. Moreover, stratified analyses were conducted by sex.

Only participants with complete information for the outcomes of interest were included in the analyses (i.e. excluding a small 0.1 to 5.7 % of the sample which had missing data, depending on the variables; [Supplementary Table S3](#)). We followed official NSES data analysis guidance to account for the complex sampling design of the survey and use survey weights.¹¹ This study used the STATA 18 statistical software to perform all the analyses.

3. Results

A total of 192,666 participants were included in the study; 51 % were female. Persons with disabilities represented 10 % of all participants ($n = 21,769$). People with disabilities were more likely to be older in age, female, with no or only primary schooling, in the lowest income quintile, and have public health insurance (all $p < 0.0001$) ([Table 1](#)). The most common functional difficulty types were multiple difficulties (31 %). People with disabilities were also more likely to require assistance from someone else to perform an activity.

Health needs were higher among people with disabilities. They were more likely to have had a health problem (aOR, 2.22; 95 % CI, 2.12–2.32), than those without disabilities ([Table 2](#)). Similarly, people with disabilities had increased odds of being under treatment for hypertension, diabetes, acute myocardial infarction, chronic obstructive pulmonary disease, cancer, asthma, ischemic stroke, or other conditions, as well as any of those reported health conditions (aOR, 2.82; 95%CI, 2.68–2.97). This pattern was especially noted among men with disabilities (aOR, 3.08; 95 % CI 2.85–3.32) compared with women with disabilities (aOR, 2.60; 95 % CI 2.44–2.77; [Supplementary Table S4](#)). Among children aged five to nine years, children with disabilities were more likely to be malnourished (aOR, 3.54; 95%CI, 1.51–8.33), overweight (aOR, 1.35; 95%CI, 1.00–1.82), or obese (aOR, 1.95; 95%CI, 1.20–3.17) as opposed to normal weight, than for children without disabilities.

Across different metrics, healthcare utilization was consistently higher among people with disabilities ([Table 3](#)). Amongst participants reporting a health problem, people with disabilities were more likely to have received medical care (aOR, 1.22; 95 % CI, 1.07–1.39). Although, this association disappeared for women with disabilities ([Supplementary Table S5](#)). General practitioner and diagnostics were the most common outpatient services used by participants. Overall, the use of any type of consultation and number of visits in the last three months were consistently higher among people with disabilities. This pattern was more noted among men with disabilities than women with disabilities in consultations with GPs, mental health services, and specialists, as well as in diagnostics, and hospital admissions ([Supplementary Table S5](#)). When controlling for sociodemographic characteristics, income, and health insurance, the differences in healthcare use generally increased, with higher utilization among people with disabilities. Most participants used public health services, while those with disabilities were less likely to have used private providers (aOR, 0.71; 95 % CI, 0.65–0.78). Among participants with public health insurance, the odds of using a mix of health providers (aOR, 1.16; 95 % CI, 1.08–1.24) and other sources of care (aOR, 1.74; 95 % CI, 1.41–2.15) were higher among people with disabilities than those without

Table 1
Sociodemographic characteristics of people with and without disabilities.

	People with disabilities (n = 21,769), n (%)	People without disabilities (n = 170,837), n (%)	Age and sex-adjusted p-values
Age group (years)			
5 to 14	1036 (6 %)	25,235 (15 %)	$p < 0.0001$
15 to 24	1147 (6 %)	26,705 (15 %)	
25 to 34	1123 (6 %)	27,349 (19 %)	
35 to 44	1153 (7 %)	23,657 (16 %)	
45 to 54	2316 (12 %)	23,019 (14 %)	
55 to 64	4201 (19 %)	22,101 (11 %)	
≥65	10,793 (45 %)	22,771 (11 %)	
Sex^a			
Female	12,835 (57 %)	89,008 (50.1 %)	$p < 0.0001$
Male	8934 (43 %)	81,829 (49.9 %)	
Indigenous Peoples^b			
Yes	2785 (10 %)	24,343 (10 %)	$p < 0.0001$
No	18,984 (91 %)	146,494 (90 %)	
Place of birth			
Born in Chile	21,000 (97 %)	158,434 (90 %)	$p < 0.0001$
Born abroad	489 (3 %)	11,138 (10 %)	
Residence			
Urban	17,076 (87 %)	136,649 (89 %)	$p < 0.0001$
Rural	4693 (13 %)	34,188 (11 %)	
Schooling			
None	2221 (9 %)	5645 (3 %)	$p < 0.0001$
Primary	9693 (41 %)	48,417 (24 %)	
Secondary	7238 (36 %)	68,944 (39 %)	
Higher	2372 (14 %)	46,936 (34 %)	
Income quintile			
1st quintile	7798 (31 %)	42,000 (20 %)	$p < 0.0001$
2nd quintile	6018 (27 %)	42,383 (22 %)	
3rd quintile	4264 (21 %)	37,353 (22 %)	
4th quintile	2610 (13 %)	29,683 (19 %)	
5th quintile	1079 (7 %)	19,299 (17 %)	
Health insurance^c			
Public	20,091 (90 %)	143,111 (79 %)	$p < 0.0001$
Private	803 (6 %)	18,237 (16 %)	
Armed forces and other	475 (2 %)	3619 (2 %)	
Out-of-pocket	290 (2 %)	4394 (3 %)	
Functional difficulty type			
Seeing	4773 (22 %)	–	–
Hearing	1617 (7 %)	–	
Mobility	6358 (28 %)	–	
Communicating	1516 (8 %)	–	
Cognition	538 (3 %)	–	
Multiple ^d	6967 (31 %)	–	
Level of assistance required^e			
No dependence	13,888 (68 %)	144,199 (99 %)	$p < 0.0001$
Mild dependence	1691 (8 %)	730 (0.4 %)	
Moderate dependence	2284 (10 %)	501 (0.3 %)	
Severe dependence	2870 (13 %)	172 (0.1 %)	

Note: Sample weights were considered for all analyses.

^a 99 % overlap between participants' reported sex assigned at birth and their gender identity.

^b Belongs to an indigenous group recognized by Chilean law: Aimara, Rapa-Nui/Pascuenses, Quechua, Mapuche, Atacameño (Likan-Antai), Collas, Kawashkar/Alacalufes, Yámana/Yagán, Diaguaita, or Chango.

^c Public: National Health Fund (FONASA); Private: Private Health Insurances (ISAPRES).

^d Including those with difficulties in self-care.

^e Among people above 14 years.

disabilities ([Supplementary Table S6](#)).

The coverage of health screening services by disability is presented in [Table 4](#) and [Supplementary Table S7](#). The general trend appeared to be a lower coverage of health check-ups among people with disabilities, except for the child health check-up. Even though the differences in health coverage between people with and without disabilities were reduced after controlling for sociodemographic characteristics, income, and health insurance, gaps remained among participants. The odds of

Table 2
Health conditions among people with and without disabilities.

	People with disabilities, n (%)	People without disabilities, n (%)	Age, sex-adjusted OR (95 % CI) ^a
Any “health problem” (i.e., disease/accident, in last 3 months)^b			
No	14,773 (67 %)	144,230 (85 %)	Baseline
Yes	6767 (33 %)	24,550 (15 %)	2.22 (2.12-2.32)
Under treatment for selected health conditions (in last 12 months)			
Not treated for any health condition	6642 (33 %)	119,024 (72 %)	Baseline
Hypertension	4668 (20 %)	15,922 (8.2 %)	1.93 (1.82-2.05)
Diabetes	3085 (13 %)	8853 (4.5 %)	2.66 (2.49-2.84)
Acute myocardial infarction	275 (1.2 %)	526 (0.3 %)	3.21 (2.53-4.07)
COPD	321 (1.5 %)	581 (0.3 %)	4.75 (3.95-5.71)
Cancer ^c	416 (1.9 %)	1119 (0.6 %)	2.75 (2.35-3.21)
Asthma	417 (2.1 %)	2895 (1.7 %)	2.45 (2.13-2.82)
Ischemic stroke	186 (0.9 %)	96 (0.1 %)	16.25 (11.87-22.24)
Other ^d	5537 (27 %)	19,793 (12 %)	3.56 (3.35-3.79)
Any of above health conditions ^e	14,905 (67 %)	49,785 (27 %)	2.82 (2.68-2.97)
Child’s nutritional state (aged 5–9 years)			
Normal	326 (73 %)	9391 (81 %)	Baseline
Malnourished (or at risk of)	12 (3 %)	118 (1 %)	3.54 (1.51-8.33)
Overweight	92 (20 %)	2011 (16 %)	1.35 (1.00-1.82)
Obese	27 (4 %)	280 (2 %)	1.95 (1.20-3.17)

Note: Sample weights were considered for all analyses. Abbreviation: COPD, Chronic Obstructive Pulmonary Disease.

^a Results of multivariable logistic regression models for the associations between each dependent variables on health conditions and disability, adjusted for age and sex.

^b Including common disease, work-related disease, work/school related accident, or any type of accident.

^c Including: Stomach, Cervical, Breast, Testicular, Prostate, Colorectal cancer, and Leukaemia.

^d Other includes Kidney Failure, Lupus, dental emergency, Depression, Cataracts, Cholecystectomy, Bipolar Disorder, and others specified by the informant.

^e Any of the health conditions listed above or reported by the participant versus no reported health condition under treatment.

having an adult health check-up or older people health check-up were lower among people with disabilities. These patterns were broadly similar between women and men with disabilities (Supplementary Table S7). However, the association disappeared for older people health check-up after adjusting for socio-demographic variables. The uptake of the Pap test was lower among women with disabilities (aOR, 0.76; 95 % CI, 0.70-0.82) versus those without, as was mammogram (aOR, 0.82; 95 % CI, 0.72-0.94). These associations were weakened after adjusting for socio-demographic and health insurance variables, but only disappeared for mammogram coverage.

Table 5 presents the reported barriers experienced by participants who received healthcare in the last three months. Overall, reports of experiencing any difficulty while accessing health services was more common among people with disabilities. For instance, they were more likely to have problems reaching a health center (aOR, 1.87; 95 % CI, 1.67-2.10), getting an appointment (aOR, 1.50; 95 % CI, 1.30-1.73), receiving care (aOR, 1.54; 95 % CI, 1.34-1.78), paying for care (aOR, 1.46; 95 % CI, 1.27-1.66), or obtaining medications (aOR, 1.65; 95 % CI, 1.46-1.86), than those without disabilities. This pattern was similar between women and men with disabilities (Supplementary Table S8). Furthermore, people with disabilities more frequently reported unmet healthcare need (8 %) than those without disabilities (3 %) ($p < 0.0001$; Supplementary Table S9). The study participants reported that the most common reasons for not seeking healthcare were finding it unnecessary or opting for homemade remedies instead. The main reason for not undergoing a mammogram was forgetting to have one (Supplementary Table S9). Women with disabilities more frequently believed that having a mammogram was unnecessary, whereas women without disabilities more often reported a lack of time as the reason for not having one ($p = 0.0356$).

4. Discussion

This cross-sectional analysis of the 2022 NSES of Chile showed that people with disabilities had greater healthcare needs, as they more frequently reported experiencing health problems or being under treatment for a health condition. In addition, people with disabilities used healthcare services more often than those without disabilities.

However, despite the higher use and need for healthcare, people with disabilities had lower health service coverage, especially for the adult health check-up and cervical cancer screening among women with disabilities. Across all types of barriers, people with disabilities faced more difficulties while accessing healthcare than those without disabilities. Overall, these findings suggests that people with disabilities in Chile experience health inequities, both in terms of healthcare needs and coverage of health services.

Our findings are consistent with previous research reporting a higher use of health services among people with disabilities. Quantitative evidence of a systematic review of LAC similarly reported a higher utilization of general healthcare services among people with disabilities in the region.⁹ Within Chile, a study observed that deaf people were more likely to visit a GP (aOR, 1.78; 95 % CI, 1.18-2.66), compared with the general population.¹⁸ Furthermore, our results indicated a lower coverage of Pap test screening among women with disabilities. A global meta-analysis also highlighted these health inequities experienced in cancer screening.²² Similar findings were observed in previous studies using 2011 and 2015 NSES data of Chile.^{18,20} These studies found a lower coverage not only for Pap tests (e.g., aOR, 0.70, 95 % CI, 0.65-0.75),²⁰ but also for mammograms (ages 50-75 years).^{18,20} In our analyses, the discrepancy in mammogram coverage disappeared after adjustment for the sociodemographic characteristics of the participants. Nevertheless, women with disabilities – eligible by age and health insurance – more often reported that a mammogram was unnecessary, which is in line with previous research.²⁰ Hence, national preventive care campaigns should be revised to support health literacy and autonomy and awareness of people with disabilities.²³ Overall, lower coverage of cancer screening poses negative implications for women with disabilities who may have untimely detection of a highly burdensome disease like cancer.¹ Moreover, the MoH’s national coverage targets for cervical cancer screening will not be achieved if a disability lens is not applied, as coverage is not equitably reaching women with disabilities.^{24,25}

Lower coverage among people with disabilities was also found for the adult preventive health check-up in the last year, which is designed to screen for selected highly prevalent diseases and risk factors.¹⁷ However, evidence appears to be inconsistent across studies. A previous

Table 3
Healthcare utilization among people with and without disabilities.

	People with disabilities, n (%)	People without disabilities, n (%)	Age and sex-adjusted OR (95 % CI)	Age, sex, and sociodemographic adjusted OR (95 % CI) ^a	Age, sex, and health insurance-adjusted OR (95 % CI)
Received medical care, if had “health problem” (in last 3 months)^b					
No	622 (10 %)	2404 (11 %)	Baseline	Baseline	Baseline
Yes	6136 (91 %)	22,126 (89 %)	1.15 (1.01-1.31)	1.22 (1.07-1.39)	1.17 (1.03-1.33)
Type of health service received (in last 3 months)					
General practitioner consultation	7993 (37 %)	34,256 (20 %)	1.65 (1.58-1.73)	1.67 (1.59-1.75)	1.68 (1.60-1.76)
Emergency care	4800 (21 %)	20,369 (11 %)	2.05 (1.95-2.15)	1.89 (1.80-1.99)	1.99 (1.89-2.09)
Mental health consultation	2252 (12 %)	9244 (6 %)	2.57 (2.36-2.80)	2.92 (2.66-3.20)	2.74 (2.50-3.00)
Specialist consultation (any type)	6018 (30 %)	24,274 (16 %)	1.83 (1.75-1.93)	2.25 (2.13-2.37)	2.04 (1.93-2.14)
Dental care consultation	2488 (12 %)	22,499 (14 %)	0.98 (0.92-1.05)	1.16 (1.09-1.23)	1.04 (0.97-1.11)
Diagnostics ^c	9230 (42 %)	39,302 (24 %)	1.59 (1.52-1.66)	1.73 (1.65-1.81)	1.66 (1.59-1.74)
Hospitalization (in last 12 months)	2937 (14 %)	9950 (6 %)	2.03 (1.88-2.20)	2.11 (1.94-2.29)	2.11 (1.94-2.28)
Number of health consultations (in last 3 months)^d					
1	3640 (26 %)	25,276 (34 %)	Baseline	Baseline	Baseline
2	2620 (19 %)	15,157 (21 %)	1.20 (1.11-1.30)	1.21 (1.12-1.31)	1.22 (1.13-1.32)
3	2125 (15 %)	10,962 (16 %)	1.33 (1.23-1.45)	1.39 (1.28-1.51)	1.36 (1.25-1.48)
4	1329 (10 %)	5991 (9 %)	1.44 (1.31-1.57)	1.46 (1.33-1.61)	1.48 (1.35-1.62)
>5	3696 (30 %)	14,145 (21 %)	2.01 (1.86-2.17)	2.16 (1.99-2.34)	2.09 (1.93-2.26)
Where received healthcare^e					
Public health provider	12,634 (65 %)	57,578 (46 %)	Baseline	Baseline	Baseline
Private health provider	2569 (18 %)	32,957 (41 %)	0.44 (0.41-0.47)	0.71 (0.65-0.78)	0.54 (0.49-0.59)
Mixed (public or private)	2329 (14 %)	11,389 (11 %)	0.95 (0.88-1.02)	1.15 (1.07-1.24)	0.97 (0.90-1.04)
Other ^f	321 (2.1 %)	1528 (1.6 %)	1.07 (0.90-1.27)	1.44 (1.21-1.71)	1.18 (0.99-1.42)

Note: Sample weights were considered for all analyses. Adjusted odds ratios were derived from multivariable logistic regression models for the associations between each dependent variables on healthcare utilization and disability.

^a Adjusted for age, sex, place of birth, residence, schooling, and income.

^b Including common disease, work-related disease, work/school related accident, or any type of accident.

^c Including laboratory, radiology, and imaging.

^d Among those who received either general practitioner, emergency, mental health, specialist, or dental consultations.

^e Among those who were hospitalised, underwent a medical check-up or diagnostics, or received general medical, emergency, mental health, specialist, or dental consultations.

^f Including medical/dental services from teaching clinics, student health services, health centres abroad, at home by a doctor in the family or an acquaintance, or armed forces health centres.

Table 4
Coverage of preventive health screening services among people with and without disabilities.

	People with disabilities, n (%)	People without disabilities, n (%)	Age and sex-adjusted OR (95 % CI)	Age, sex, and sociodemographic adjusted OR (95 % CI) ^a	Age, sex, and health insurance-adjusted OR (95 % CI)
Child health check-up (5–9 years)	210 (50 %)	5148 (48 %)	1.06 (0.82-1.38)	1.07 (0.82-1.38)	1.11 (0.85-1.45)
Adult health check-up (15–64 years)	1400 (15 %)	18,581 (17 %)	0.75 (0.70-0.82)	0.88 (0.81-0.96)	0.81 (0.75-0.88)
Older people health check-up (≥65 years)	3260 (34 %)	6614 (32 %)	0.91 (0.84-0.97)	0.94 (0.87-1.01)	0.92 (0.86-0.99)
Pap test (25–64 years) ^b	3211 (65 %)	32,962 (71 %)	0.76 (0.70-0.82)	0.84 (0.77-0.91)	0.79 (0.73-0.85)
Mammogram (50–59 years) ^b	1325 (67 %)	8125 (72 %)	0.82 (0.72-0.94)	0.93 (0.81-1.06)	0.86 (0.76-0.98)

Notes: Sample weights were considered for all analyses. These free and voluntary health check-ups are part of a funded national health program and are guaranteed by law to people with public or private health insurance. All health check-ups in the last 12 months. Adjusted odds ratios were derived from multivariable logistic regression models for the associations between each dependent variables on health check-ups and disability.

^a Adjusted for age, sex, place of birth, residence, schooling, and income.

^b Pap test or mammogram among women in the last 3 years.

cross-sectional study in Chile found no strong evidence of a relationship between having a disability and using any type of preventive health services.²⁶ On the contrary, another study in the country found deaf people were more likely to have undergone a health check-up in their lifetime, especially among older adults.¹⁸ The latter could suggest that differences in the health coverage may exist by type of disability, which requires further consideration in future studies.

Our analyses indicated that people with disabilities faced several difficulties when accessing healthcare, including problems in reaching a health center, getting an appointment, receiving care, paying for care, and obtaining medications. Similarly, a previous study in Chile also

showed that people with disabilities faced higher barriers to access healthcare compared with those without disabilities.¹⁹ These barriers are not unique to Chile but are also experienced in other countries in LAC, including Brazil, Colombia, and Trinidad and Tobago.²⁷ A meta-synthesis of qualitative studies found that adults with disabilities faced inaccessible health information and infrastructure, inadequate transportation, and attitudinal barriers from healthcare providers.²⁷ Overall, these findings provide initial insights for health policy and cross-sectoral governance in Chile. For instance, people with disabilities might face more difficulties in reaching a healthcare centre due to the lack of transport accessibility and/or lack of disability transport subsidy,

Table 5
Difficulties presented while accessing healthcare among people with and without disabilities.

	People with disabilities, n (%)	People without disabilities, n (%)	Age and sex-adjusted OR (95 % CI)	Age, sex, and sociodemographic-adjusted OR (95 % CI) ^a	Age, sex, and health insurance-adjusted OR (95 % CI)
Reaching health center ^b	1341 (21 %)	2367 (10 %)	2.11 (1.89-2.35)	1.87 (1.67-2.10)	1.97 (1.77-2.20)
Getting an appointment ^c	1721 (28 %)	4366 (19 %)	1.62 (1.41-1.85)	1.50 (1.30-1.73)	1.55 (1.35-1.78)
Receiving care ^d	1750 (29 %)	4626 (19 %)	1.73 (1.52-1.97)	1.54 (1.34-1.78)	1.62 (1.41-1.85)
Paying for care due to cost	735 (12 %)	1910 (9 %)	1.46 (1.28-1.66)	1.46 (1.27-1.66)	1.44 (1.26-1.64)
Obtaining medications ^e	930 (16 %)	2286 (10 %)	1.70 (1.51-1.92)	1.65 (1.46-1.86)	1.61 (1.43-1.81)

Note: Sample weights were considered for all analyses. Difficulties reported in the last three months. Adjusted odds ratios were derived from multivariable logistic regression models for the associations between each dependent variables on barriers and disability.

^a Adjusted for age, sex, place of birth, residence, schooling, and income; for the last two difficulties, income was excluded from the model.

^b Distance, transport connectivity, etc.

^c Long waiting times, postponement of appointments, etc.

^d At the health center, e.g., delays, time changes, lack of staff, etc.

^e Including difficulties in obtaining free prescribed medication supplied by health facilities and difficulties for those who must pay for medication out of pocket.

requiring several sectors to be involved in developing policy solutions.²³ Nevertheless, comprehensive studies are needed to examine the specific causes that contribute to the increased barriers experience by people with disabilities in accessing healthcare.

A global comparison of effective coverage of health services categorized Chile in a relatively high performance (i.e., index value 74 of 100), between the neighbouring countries of Peru (76th percentile), Argentina (61st), and Bolivia (52nd).²⁸ However, our findings suggest that people with disabilities continue to experience health inequities in Chile. Thus, a disability lens needs to be mainstreamed in the health system to leave no one behind. The existence of a Preferential Care Law for people with disabilities appears to be insufficient on its own.²⁹ In line with the call to build inclusive health systems that *expect, accept, and connect* people with disabilities,^{5,30} Chile embarked on the first National Policy on Inclusive Health for People with Disabilities.^{23,31} Financing, accountability mechanisms, and monitoring of disability inclusion have been considered as key factors for successful implementation.²⁹ Future research could continue to examine changes in health equity among people with disabilities, particularly after policy implementation. In addition, future national surveys should include detailed modules on quality of healthcare (i.e., timeliness, effectiveness, people-centredness, etc.) and financial protection (i.e., out-of-pocket payments), as these are crucial elements to examine the accessibility of health services and remains a knowledge gap.^{32,33}

This study has some limitations. First, all information on health needs and access was self-reported. Hence, the study could be subject to information bias. Second, we could only estimate the prevalence of having health conditions under treatment, rather than the direct prevalence of health conditions, as this was not included in the survey. Third, the survey's response rate was 69 %, and so the findings may not be generalisable to the entire population. Furthermore, we could only assess coverage of health services, not whether their quality differed by disability status. Additionally, this study could not investigate people who had not received preventive health check-ups – among those with realised need – nor the reasons for not receiving them, as these aspects were excluded from the survey. However, the upcoming 2025 revision of UHC indicators expects to resolve the still not agreed methodology to measure unmet needs and forgone care to align future research.^{32,34} Moreover, further studies are needed to investigate the causal links between disability and health inequities.³⁵ Nevertheless, this study makes an important contribution as it presents a complete overview of the most recent trends on health inequities experienced among people with disabilities in Chile. Its strengths lie in the large, nationally representative sample, its comparability with several studies worldwide applying the WG set of questions to measure disability, and the inclusion of participants aged 5 to 17 which had not been included in previous

studies.^{18–20}

In conclusion, people with disabilities in Chile continue to experience health inequities, both in terms of higher healthcare needs and lower coverage, and various barriers to accessing healthcare. Further monitoring of health inequities is crucial to contribute to evidence-informed policy making, advance in universal health coverage strategies that leave no one behind, and foster the right of people with disabilities in Chile to the highest attainable standard of health as anyone else.

Contributors

DRG, ESR, LMB, and HK collaborated to the design of the study. DRG was responsible for data curation, data analyses, and writing the original draft. DRG, ESR, LMB, and HK contributed to the interpretation and verification of the data. All authors critically reviewed and accepted the final manuscript before its submission.

Author statements

Ethical approval

None required.

Funding

This work was supported by the National Agency for Research and Development (ANID) 72210471; the ANID Millennium Science Initiative Program [NCS2022_039]; the National Institute for Health and Care Research 301621; the Foreign, Commonwealth and Development Office [PO8073]; and the Arts & Humanities Research Council [AH/X009580/1].

Competing interests

None.

Data sharing

The 2022 National Socioeconomic Survey database and analytical guidelines are publicly available through the website of the Ministry of Social Development and Family of Chile (<https://observatorio.ministerio.odesarrollosocial.gob.cl/encuesta-casen-2022>)

Acknowledgements

None.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.puhe.2025.02.010>.

References

- World Health Organization. *Global Report on Health Equity for Persons with Disabilities* [Internet]. Geneva; 2022 [cited 2023 Jun 13]. Available from: <https://www.who.int/publications/i/item/9789240063600>.
- United Nations. Convention on the rights of persons with disabilities—articles [cited 2023 Jul 19]. Available from: <https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities/convention-on-the-rights-of-persons-with-disabilities-2.html>; 2006.
- Kuper H, Heydt P. The Missing Billion: access to health services for 1 billion people with disabilities [cited 2023 Jun 29]. Available from: <https://www.lshtm.ac.uk/research/centres/international-centre-evidence-disability/missing-billion>; 2019.
- Solar O, Irwin A. A conceptual framework for action on the social determinants of health. *Social Determinants of Health Discussion Paper 2 (Policy and Practice)*; 2019 [cited 2024 Mar 28]. Available from: <https://www.who.int/publications/i/item/9789241500852>.
- Missing Billion Initiative, Clinton Health Access Initiative. Reimagining health systems that expect, accept and connect 1 billion people with disabilities [cited 2023 Jun 29]. Available from: <https://www.themissingbillion.org/the-reports>; 2022.
- Kuper H, Rotenberg S, Azizatunnisa L, Banks LM, Smythe T. The association between disability and mortality: a mixed-methods study. *Lancet Public Health*. 2024 May;9(5):e306–e315.
- Heslop P, Blair PS, Fleming P, Hoghton M, Marriott A, Russ L. The Confidential Inquiry into premature deaths of people with intellectual disabilities in the UK: a population-based study. *Lancet*. 2014 Mar 8;383(9920):889–895.
- García Mora ME, Schwartz Orellana S, Freire G. Disability inclusion in Latin America and the caribbean: a path to sustainable development [cited 2023 Jul 19]. Available from: <https://documents1.worldbank.org/curated/en/099015112012126833/pdf/P17538305622600c00bf3f09659df1f2f79.pdf>; 2021.
- Rodríguez Gatta D, Rotenberg S, Allel K, Reichenberger V, Banks LM, Kuper H. *Access to General Health Care Among People with Disabilities in Latin America and the Caribbean: A Systematic Review of Quantitative Research*. vol. 32. The Lancet Regional Health - Americas; 2024 Apr, 100701.
- Instituto Nacional de Estadísticas. Proyecciones de población [cited 2024 Jan 9]. Available from: <https://www.ine.gov.cl/estadisticas/sociales/demografia-y-vitales/proyecciones-de-poblacion>; 2024.
- Observatorio Social. Encuesta de Caracterización Socioeconómica Nacional [cited 2024 Jan 19]. Available from: <https://observatorio.ministeriodesarrollosocial.gob.cl/encuesta-casen-2022>; 2022.
- World Bank. World Bank open data [cited 2024 Jul 17]. Available from: <https://data.worldbank.org>; 2024.
- OECD. *OECD Reviews of Public Health: Chile*. Paris: OECD Publishing; 2019.
- Sánchez M. Análisis Estadístico del Sistema Isapre con Perspectiva de Género Año 2023 [cited 2024 Dec 17]. Available from: <https://www.superdesalud.gob.cl/biblioteca-digital/analisis-estadistico-del-sistema-isapre-con-perspectiva-de-genero-ano-2023/>; 2024 Nov.
- FONASA. Cuenta pública participativa, 2022 [cited 2024 Jan 10]. Available from: https://www.fonasa.cl/sites/fonasa/noticia/cuenta_publica; 2022.
- Missoni E, Solimano G. Towards universal health coverage: the Chilean experience [cited 2024 Jan 18]. Available from: https://cdn.who.int/media/docs/default-source/health-financing/technical-briefs-background-papers/4chile.pdf?sfvrsn=2a6c48a1_3&download=true; 2010.
- Ministerio de Salud. Decreto 22 aprueba Garantías Explícitas en Salud del Régimen General de Garantías en Salud [Internet]. Available from: <https://bcn.cl/2gx51>; Jul 1, 2019.
- Fuentes-López E, Fuente A. Access to healthcare for deaf people: a model from a middle-income country in Latin America. *Rev Saude Publica*. 2020 Jan 27;54:13.
- Rotarou ES, Sakellariou D. Inequalities in access to health care for people with disabilities in Chile: the limits of universal health coverage. *Crit Public Health*. 2017 Oct 20;27(5):604–616.
- Sakellariou D, Rotarou ES. Utilisation of cancer screening services by disabled women in Chile. *PLoS One*. 2017 May 1;12(5), e0176270.
- Washington Group on Disability Statistics. WG Short set on functioning. WG-SS); 2022 [cited 2024 Dec 17]. Available from: <https://www.washingtongroup-disability.com/question-sets/wg-short-set-on-functioning-wg-ss/>.
- Andiwijaya FR, Davey C, Bessame K, Ndong A, Kuper H. Disability and participation in Breast and cervical cancer screening: a systematic review and meta-analysis. *Int J Environ Res Publ Health*. 2022 Aug 1;19(15).
- Rodríguez Gatta D, Piriz Tapia C, Tagle Schmidt E, et al. [Pre print] Inclusive health for people with disabilities in Chile: a national health system assessment. *Research Square* [Internet]. 2024 Mar 12. <https://doi.org/10.21203/rs.3.rs-4024506/v1> [cited 2024 Jul 16].
- Yupanqui-Concha A, Hichins-Arismendi M, Mandiola-Godoy D, Rodríguez-Garrido P, Rotarou ES. Accessing sexual and reproductive health services in Chile: women with disabilities and their experience with gynaecological and obstetric violence. *Sex Res Soc Pol*. 2024 Jun 10;21(2):690–703.
- Hichins-Arismendi M, Yupanqui-Concha A. Barreras en el acceso a salud sexual y reproductiva: experiencias de mujeres con discapacidad en el extremo sur de Chile. *ex aequo - Revista da Associação Portuguesa de Estudos sobre as Mulheres*. 2022 Dec 15; (46).
- Rotarou ES, Sakellariou D. Determinants of utilisation rates of preventive health services: evidence from Chile. *BMC Public Health*. 2018 Dec 6;18(1):839.
- Reichenberger V, Corona AP, Ramos VD, et al. Access to primary healthcare services for adults with disabilities in Latin America and the Caribbean: a review and meta-synthesis of qualitative studies. *Disabil Rehabil*. 2024 Mar 3:1–10.
- Lozano R, Fullman N, Mumford JE, et al. Measuring universal health coverage based on an index of effective coverage of health services in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. *Lancet*. 2020 Oct;396(10258):1250–1284.
- Rodríguez Gatta D, Gutiérrez Monclus P, Wilbur J, Hanefeld J, Banks LM, Kuper H. [Pre print] Inclusion of people with disabilities in Chilean health policy: a policy analysis. *Research Square*. 2024 Jul 18. <https://doi.org/10.21203/rs.3.rs-4600644/v1> [cited 2024 Jul 19].
- Kuper H, Azizatunnisa L, Rodríguez Gatta D, et al. Building disability-inclusive health systems. *Lancet Public Health*. 2024 May;9(5):e316–e325.
- Ministerio de Salud. Hacia una Política de Salud Inclusiva para Personas con Discapacidad [Internet] [cited 2024 Jul 16]. Available from: <https://rehabilitacion.minsal.cl/hacia-una-politica-de-salud-inclusiva-para-personas-con-discapacidad/>; 2024.
- World Health Organization and International Bank for Reconstruction and Development/The World Bank. Tracking universal health coverage: 2023 global monitoring report [cited 2024 Aug 23]. Available from: <https://www.who.int/publications/i/item/9789240080379>; 2023.
- World Health Organization, Organisation for Economic Co-operation and Development, The World Bank. Delivering quality health services: a global imperative for universal health coverage [cited 2024 Dec 19]. Available from: <https://www.who.int/publications/i/item/9789241513906>; 2018.
- Pan American Health Organization. *Progress in Universal Health in the Americas: Addressing Unmet Healthcare Needs, Gaps in Coverage, and Lack of Financial Protection through Primary Health Care* [Internet]. Washington D.C.: Pan American Health Organization; 2024 Dec [cited 2024 Dec 19]. Available from: <https://iris.paho.org/handle/10665.2/63086>.
- Moreno-Serra R, Smith PC. Does progress towards universal health coverage improve population health? *Lancet*. 2012 Sep;380(9845):917–923.