aaidd
Volume 131, Number 4, 2026
AJIDD
American Journal on Intellectual and Developmental Disabilities
Journal of the American Association on Intellectual and Developmental Disabilities
www.aaidd.org

Taylor & Francis
Taylor & Francis Group

American Journal on Intellectual and Developmental Disabilities

ISSN: 1944-7515 (Print) 1944-7558 (Online) Journal homepage: www.tandfonline.com/journals/tajd20

Functional Limitations Reported Among U.S. Adults With Intellectual Disability Participating in Special Olympics: A Comparative Analysis to the General Population

Alicia M. Dixon-Ibarra, John P. Hanley, Andrew E. Lincoln, Julie D. Weeks, Jon Baio, Joseph Holbrook & Catherine E. Rice

To cite this article: Alicia M. Dixon-Ibarra, John P. Hanley, Andrew E. Lincoln, Julie D. Weeks, Jon Baio, Joseph Holbrook & Catherine E. Rice (2026) Functional Limitations Reported Among U.S. Adults With Intellectual Disability Participating in Special Olympics: A Comparative Analysis to the General Population, American Journal on Intellectual and Developmental Disabilities, 131:4, 251-266, DOI: 10.1080/19447515.2026.2669460

To link to this article: https://doi.org/10.1080/19447515.2026.2669460

Published online: 22 May 2026.

AMERICAN JOURNAL ON INTELLECTUAL AND DEVELOPMENTAL DISABILITIES
2026, VOL. 131, NO. 4, 251–266
https://doi.org/10.1080/19447515.2026.2669460

Functional Limitations Reported Among U.S. Adults With Intellectual Disability Participating in Special Olympics: A Comparative Analysis to the General Population

Alicia M. Dixon-Ibarra[a], John P. Hanley[a], Andrew E. Lincoln[a], Julie D. Weeks[b], Jon Baio[b], Joseph Holbrook[b], and Catherine E. Rice[b]

[a]Special Olympics International, Washington, DC; [b]Centers for Disease Control and Prevention, Atlanta, GA

ABSTRACT

The Washington Group Short Set on Functioning (WG-SS) allows for the identification of functional limitations across severity levels. Incorporating the WG-SS into Special Olympics (SO) surveys serves to understand functional support needs and inform SO programming for people with intellectual disability. This study examined functioning using both a restrictive and a broad definition of limitation among 525 U.S. SO athletes who completed an online survey in 2022. Self- and proxy-reported outcomes were compared to National Health Interview Survey (NHIS) estimates. Nearly a quarter of SO athletes (24.2%) reported any functional limitation under the restricted definition, while over three quarters (82.1%) reported limitations under the broad definition. Differences emerged between self- and proxy-reported data. Compared with NHIS age-adjusted estimates, SO athletes had higher prevalence ratios across all six domains, including self-care (PR = 12.93) and communication (PR = 11.21). These findings underscore functional diversity among SO athletes and inform programming and disability surveillance.

ARTICLE HISTORY
Received 16 April 2025
Accepted 8 February 2026

KEYWORDS
Washington Group Short Set; intellectual disability; surveillance; adults; Special Olympics; functional limitations

Introduction

The inclusion of people with disabilities in public health population data is critical to track prevalence of health conditions, identify health disparities, and aid in policy planning and monitoring (Havercamp & Krahn, 2019; Havercamp et al., 2019; Krahn, 2019; Krahn & Havercamp, 2019). In the United States, the *Patient Protection and Affordable Care Act* mandated that all federally funded population health surveys include the collection of data to assess disability in the general population (*Patient Protection and Affordable Care Act, 2010*, *n.d.*). Subsequently, the Department of Health and Human Services Implementation Guidance on Data Collection Standards (n.d.) recommended minimum disability data standards with agencies permitted to include additional questions and additional response categories to ensure collection of detail and granularity as needed (Department of Health and Human Services, n.d.). Internationally, a United Nations city group was formed after the 2001 International Seminar on the Measurement of Disability to address the need for common definitions, concepts, standards, and methodologies in statistics about people with disability, as well as a need for internationally comparable, high-quality disability data collection. The Washington Group on Disability Statistics (WG) commenced in 2002 and the Short Set on Functioning (WG-SS), conceptualized using the International Classification of Functioning, Disability and Health model, was endorsed in 2006 (Madans et al., 2011). The WG-SS is used broadly in censuses and population-based surveys worldwide and is intended to identify people at risk for disability across cultures due to difficulties in six core areas of functioning rather than relying on disability identified through disability-associated diagnoses or a single, nonspecific disability question (Groce & Mont, 2017; Loeb, 2016; Weeks, 2016). These domains include vision, hearing, mobility, communication, cognition, and self-care.

While the WG-SS represents a major step forward in standardizing disability data collection, the question set does not collect information about onset and thus does not specifically identify developmental disabilities from adult-onset disabilities, nor do= the data identify people with intellectual disability (ID)

CONTACT Alicia M. Dixon-Ibarra adixonibarra@specialolympics.org Fitness and Health Research, Special Olympics International, 2600 Virginia Ave NW, Washington, DC 20037

(Havercamp et al., 2019). While the WG-SS cognition question has been used to define ID in epidemiologic studies, it does not capture information to differentiate ID from other cognitive disabilities. This question is designed to measure impairment that could be attributed to a variety of conditions not specific to ID, including neurocognitive disorders such as Alzheimer's disease and stroke, mental health conditions such as schizophrenia and depression, and health conditions requiring medications (Hall et al., 2022; Havercamp et al., 2019). Therefore, researchers and public health professionals need to ascertain ID-related diagnoses from respondents or resort to alternative data sources like condition-specific registries and electronic medical records to disaggregate data by disability status and type, which do not always directly map to functional limitations (National Center for Health Statistics [NCHS], 2019).

Importantly, the WG-SS questions were not intended to identify all people with disabilities but to describe domains of functional limitations within populations most likely associated with disability in a parsimonious set of questions that can be included in data collections where questionnaire space is limited (NCHS, 2019; Weeks et al., 2021). In addition, while many studies utilize measures that define disability as a dichotomy, responses to the WG-SS questions can be used as a multidimensional measure reflecting the full continuum of functioning. Using the WG-SS, disability may be based on participants endorsing "some difficulty" (broad definition) or "a lot of difficulty" or "cannot at all" (restrictive definition) or other thresholds (Washington Group on Disability Statistics, 2021). Utilizing the WG-SS to understand the prevalence, associated characteristics, and potential support needs associated with functional limitations of people in a population, including those with ID, is an important use of this question set. The ability to examine functioning at varying levels of severity and to examine these characteristics for different subgroups is equally important.

Special Olympics (SO) serves over 3 million athletes with ID across the world through sport, health, education, and leadership programs (Special Olympics Global Reach Report, 2023). To understand better the demographics and diversity of the SO athlete population and assess the impact of health programming, SO conducts regular health surveys. Harmonizing the use of standard set questions in data collection is recommended by leaders in the field to compare across data sources and improve the utility of disability data (Mont et al., 2022). Thus, incorporating the WG-SS into SO surveys serves a dual purpose. The primary aim of this study is to apply the WG-SS to understand better athlete characteristics and identify functional support needs to inform SO programming. The secondary aim is to contribute to the broader evidence base for disability surveillance among people with ID by examining how the WG-SS captures functional limitations across severity thresholds, reporting methods (self versus proxy), and in comparison with age-adjusted national estimates. The following research questions operationalize this dual purpose. This study addresses three research questions:

(1) What are the distributions of functional limitations among adults with ID, who are already identified by diagnosis, utilizing the WG-SS measure?
(2) What differences exist in self- versus proxy responses across the six WG-SS domains?
(3) What insights emerge when applying both "broad" and "restricted" WG-SS definitions of functional limitation, and how do these cutoffs influence estimates compared to age-adjusted national estimates from the 2021 National Health Interview Survey (NHIS)?

Methods

SO included the six-item WG-SS on a survey that assessed health related to the COVID-19 pandemic (Lincoln et al., 2023). The WG-SS was selected for this survey to understand the full functioning continuum and support needs of SO athletes during the COVID-19 pandemic. As the internationally recognized standard for disability population health assessment, the WG-SS offers a validated and comparable set of measures for assessing functional limitations across populations. Its adoption within SO surveys ensures alignment with international surveillance practices and reflects SO's position as a global movement, thereby justifying its use over alternative measurement instruments. This SO COVID-19 survey was conducted online and targeted SO athletes aged 18 years or older who participated in SO sport, health, schools/education, or leadership programming. Information from this online survey was sought to guide SO in policy decisions regarding return to in-person competitions during the pandemic, with a secondary goal of

assessing perceived functioning among SO athletes with ID. The survey was developed via the Qualtrics platform (Qualtrics, Provo, UT) and remained open for responses from January through February 2022. SO programs utilized athlete, family, and coach registration listservs from sport and health programming to disseminate the survey. Participation was voluntary, and the respondents in this study dataset constitute a nonrepresentative convenience sample.

Respondents were included in the analyses if they responded "yes" to the following question: "Do you have an intellectual/learning disability?" Approximately 4.0% of the total sample (22/547) were excluded based on this criterion, resulting in a final sample of 525 athletes. Surveys could be completed either by athletes themselves or by proxy respondents (e.g., family members, caregivers, or staff/volunteers). To identify respondent type, a survey item asked, "Who is filling out this survey?" with response options including athlete, family member or caregiver on behalf of the athlete, or program staff/volunteer on behalf of the athlete.

To compare SO athletes' survey responses to indicators from a population-based national survey, public-use data from the 2021 NHIS were obtained. The NHIS is an annual cross-sectional survey sponsored by the U.S. NCHS. NHIS collects data on households and individuals. It collects health and health service utilization information on civilian households and noninstitutionalized populations in the United States. The data for this study were obtained from the 2021 Sample Adult file, which contains health-related data from one randomly selected adult (aged 18 years or older) in each household (NCHS, 2022). The 2021 Sample Adult file had a response rate of 50.9%. The information in the Sample Adult file is self-reported unless the respondent selected was incapable of answering, in which case a proxy in the household was selected to supply respondent information.

This investigation was reviewed by Oregon State University Institutional Review Board (IRB) application HE-2022–59 on November 10, 2022. The IRB determined that it does not meet the definition of human subjects research under the regulations set forth by the Department of Health and Human Services 45 CFR 46. For the survey of SO athletes, formal consent was not obtained, as the survey was part of internal program planning. NHIS is approved by the NCHS Ethics Review Board.

Measures

The WG-SS includes one question for each of the following six functional domains: vision, hearing, mobility, cognition, self-care, and communication, to capture functional limitations. The WG-SS functional limitation questions read as follows:

> Do you have difficulty . . . Seeing, even if wearing glasses? Hearing, even if using a hearing aid? Remembering or concentrating? Walking or climbing stairs? With self-care, such as washing all over or dressing? Communicating, for example, understanding or being understood by others?

Each question has ordinal response options that are read to the respondent after each question: "Would you say: no difficulty, some difficulty, a lot of difficulty, or cannot do at all?"

Using a similar methodology to Hall et al. (2022), two definitions of functional limitation were applied for the analyses in the current article. The first was a broad definition of disability, where any response of "cannot do at all," "a lot of difficulty," as well as "some difficulty" to at least one of the functional limitation questions was defined as disability (broad). The second was a restricted definition of disability, which included only "cannot do at all" or "a lot of difficulty" as responses to at least one functional limitation question. Choosing cutoffs is a methodological decision. Disability and functioning exist along a continuum. Decisions regarding where to place the threshold for disability along that continuum should be based on the research purpose. Including "some difficulty" in the analyses is recommended to examine differences without underestimating disability-related gaps and to allow for a broader assessment of functioning across the full spectrum of difficulties (Hanass-Hancock et al., 2023).

Analyses

Data analyses were conducted to examine the percentages of athletes and proxy reported responses to the WG-SS questions across the four response categories. Comparative analyses were conducted between the

SO population ($N = 525$) and the NHIS national population estimate ($N = 29{,}482$; weighted $N = 253{,}157{,}754$). To reflect the complex sampling design and generate nationally representative estimates, all analyses accounted for clustering, stratification, and weights (National Center for Health Statistics, 2022). The distribution of the SO population was younger (median age: 32 [Interquartile Range (IQR): 26, 40 years]) than the NHIS population (47 [IQR: 32, 63 years]). Due to the strong relationship between increased age and functional limitation (Newman, 2023), additional comparative analyses were conducted with an age-adjusted version of the NHIS dataset.

The SO population was used as the standard population when age-adjusting the NHIS data. In addition, we used narrow (1-year) age groups to best reflect the frequent and pronounced life transitions, including education, employment, residential, support system, social, and healthcare transitions, often experienced by those with ID (Brown et al., 2020; Cheatham & Randolph, 2022; Woodman et al., 2014). The needs during these periods require continuous adaptation from the individuals with ID and those supporting them to manage health and functionality (Fullana et al., 2021). Therefore, we chose the SO population as the standard population with 1-year age bins to avoid overshadowing these transitional effects when comparing to the NHIS data.

To perform the age adjustment, the percentage of respondents in each age a in the SO population was converted to a weight w that sums to one across all ages. For each age in the NHIS population, the positive response rate p was calculated. To calculate the NHIS age-adjusted response rates, the product of the weights and the positive response rate across all ages were summed.

$$\sum_{i=a_1}^{a_n} w_i \times p_i \tag{1}$$

Equation 1 normalizes that age distribution of the NHIS population to match that of the SO population and calculates the positive response rate based on the SO age distribution to remove age as a confounding factor while comparing these two populations (Klein & Schoenborn, 2001; Naing, 2000).

Descriptive statistics were calculated as counts and percentages of responses. All estimates were evaluated using NCHS Data Presentation Standards for Proportions (Parker et al., 2017). The 95% confidence intervals (CI) associated with NHIS-based estimates were calculated using the Korn-Graubard method for complex surveys (Korn & Graubard, 1998) and the Clopper-Pearson method for SO-based estimates (Clopper & Pearson, 1934). The Mann-Whitney U-test was used to compare age distributions between SO and NHIS and SO and NHIS age-adjusted populations. χ^2 tests were used to compare the sex, U.S. Census regions, race/ethnicity, and proxy respondent distributions between the SO and NHIS and the SO and NHIS age-adjusted populations. Unadjusted prevalence ratios (PRs) were derived for each domain of the WG-SS using broad (at least "some difficulty") and restrictive ("cannot do at all" or "a lot of difficulty") definitions of functional limitation. Analyses were performed using R version 4.2.2 (R Foundation for Statistical Computing; Vienna, Austria). Analyses were conducted independently by two researchers for validation.

Results

Among SO athletes who self-identified as having an intellectual disability (ID) or learning disability, 29.7% of respondents reported having autism and 18.1% had Down syndrome (Table 1). Most athletes lived with family (72.4%). Equivalent metrics were not readily available in the NHIS dataset to allow for comparison.

Most SO athletes reported "some difficulty" in at least one functional domain (Figure 1; Table 2). Applying the broad definition ("at least some difficulty"), the majority (82.1%) of SO athletes reported at least one limitation, and 60.5% reported two or more limitations. Using the restricted definition, 24.2% reported at least one limitation and 8.8% reported two or more limitations. Cognition was the functional domain having the highest percentage of SO athletes reporting limitations: 58.6% (95% CI: 54.2–62.8%) under the broad definition, and 8.4% (95% CI: 6.2–11.1%) under the restricted definition. The communication domain had the second highest percentage: 49.0% (95% CI: 44.6–53.3%) under the broad definition and 12.2% (95% CI: 9.5–15.3%) under the restricted definition.

Reporting of functional limitations among SO athletes varied by self- versus proxy report (see Figure 2; Tables 3 and 4). Under both the broad and restricted definitions of functional limitation, a greater

Table 1. Demographic Characteristics of SO Athletes Surveyed in January and February 2022, 2021, NHIS and Age-Adjusted 2021 NHIS Comparison gGroups

	SO	NHIS	NHIS age-adjusted
N	525	29,482	21,937
Weighted *N*[§]	525	253,157,754	205,591,024
Median age (years), (Q1–Q3)	32 (26–40)	47* (32–63)	32 (26–40)
Sex			
Male	50.1% (45.7–54.5%)	48.3% (47.6–49.0%)	49.5% (48.5–50.5%)
Female	49.7% (45.4–54.1%)	51.7% (51.0–52.4%)	50.5% (49.5–51.5%)
U.S. Census region			
Northeast	35.4% (31.3–39.7%)	17.5%* (16.4–18.6%)	16.7%* (15.4–18.1%)
Midwest	27.8% (24.0–31.9%)	20.8%* (19.6–22.0%)	20.8%* (19.4–22.4%)
South	16.2% (13.1–19.6%)	37.9%* (36.4–39.5%)	37.2%* (35.4–39.1%)
West	20.6% (17.2–24.3%)	23.8% (22.4–25.3%)	25.2% (23.3–27.1%)
Race/ethnicity[^]			
White	81.9% (78.3–85.1%)	62.8%* (61.2–64.4%)	56.5%* (54.6–58.3%)
Black or African American	4.2% (2.6–6.3%)	11.7%* (10.8–12.6%)	12.6%* (11.5–13.7%)
Hispanic or Latino	2.7% (1.5–4.4%)	16.9%* (15.6–18.3%)	21.0%* (19.5–22.6%)
American Indian/Alaskan Native	1.5% (0.7–3.0%)	0.7% (0.3–1.3%)	0.7% (0.3–1.4%)
Asian	1.5% (0.7–3.0%)	6.0%* (5.4–6.5%)	6.5%* (5.9–7.2%)
Native Hawaiian or Other Pacific Islander	(0.0–1.1%)		
Two or more races	4.2% (2.6–6.3%)		
American Indian/Alaskan Native and any other group		0.7% (0.6–0.8%)	0.7% (0.6–0.9%)
Other single or multiple races	0.0% (0.0–2.3%)	1.3% (1.1–1.5%)	2.0% (1.7–2.3%)
Proxy respondents	41.3% (37.1–45.7%)	2.4%* (2.2–2.7%)	1.7%* (1.4–2.1%)
Living arrangement[†]			
Live with family	72.4% (68.3–76.2%)		
Live on own	17.7% (14.5–21.3%)		
Live in group home	5.3% (3.6–7.6%)		
Other	4.6% (3.0–6.7%)		
Self-reported condition associated with ID or developmental disability (DD)[‡]			
Autism	29.7% (25.8–33.8%)		
Down syndrome	18.1% (14.9–21.7%)		
Fragile X	1.5% (0.7–3.0%)		
Cerebral Palsy	7.8% (5.7–10.4%)		
Other	45.3% (41.0–49.7%)		

Note. [^]Race/ethnicity was a single question in the SO survey, while "Hispanic or Latino" was recorded independently from race in the NHIS. NHIS combined race/ethnicity into the HISPALLP_A variable, which was used for table comparisons.

[†]Living arrangement is presented to help characterize the SO sample but is not applicable when comparing to the NHIS or NHIS age-adjusted samples.

[‡]Condition associated with ID or DD is presented to help characterize the SO sample but is not applicable when comparing to the NHIS or NHIS age-adjusted samples.

*$p < .001$ for Mann-Whitney U (age) or χ^2 test (sex, U.S. Census region, race/ethnicity, and proxy respondents) comparing SO to NHIS and SO to NHIS age-adjusted samples.

[§]The SO population was used as the standard for the direct method of age adjustment of the NHIS. All percentages were based on the weighted NHIS estimates.

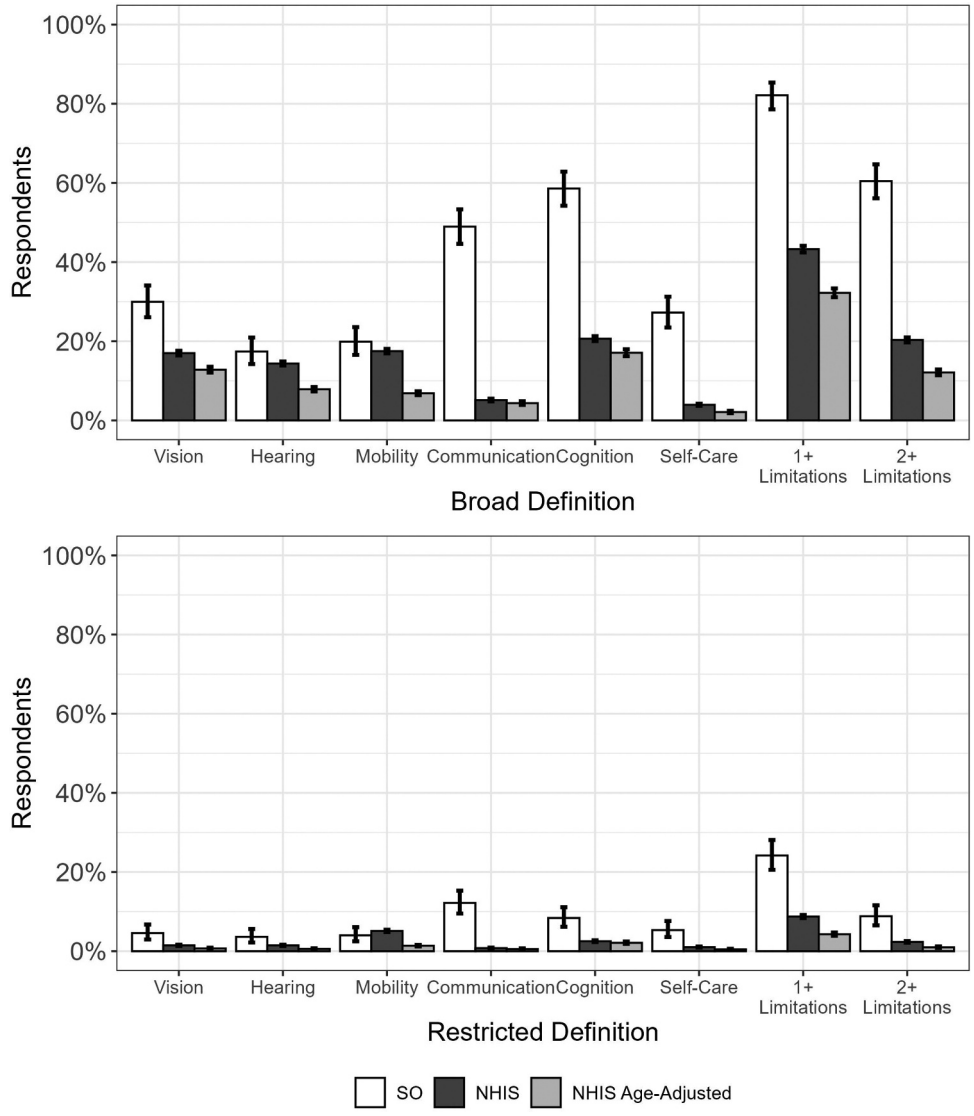

Figure 1. Functional limitations across Washington Group Short Set on Functioning (WG-SS) domains among Special Olympics (SO) and 2021 National Health Interview Survey (NHIS) respondents.

percentage (Table 3) of proxy respondents acknowledged limitations in the communication, cognition, and self-care domains compared to self-report respondents. Conversely, a relatively greater percentage of SO athletes responding by self-report acknowledged limitations in vision compared to proxy respondents. Overall, 71.9% of proxy respondents acknowledged at least "some difficulty" (broad definition) in two or more domains of functioning, whereas only 52.3% of self-report respondents acknowledged "some difficulty" or greater for at least two domains, a relative difference of over 19 percentage points.

There were notable differences between the NHIS population sample in geographical location, race/ethnicity, and percentage of proxy respondents when comparing SO athletes ($N = 525$) to the NHIS national population estimate ($N = 253{,}157{,}754$) and age-adjusted population ($N = 205{,}591{,}024$) samples (Table 1). Geographical location of respondents differed, with SO athletes having higher percentages in the Northeast region (35.4%) compared to NHIS, where the Northeast has the lowest percentage (17.5%). SO athletes and NHIS comparisons were predominantly White (SO 81.9%; NHIS 62.8%; NHIS age-adjusted 56.5%). Approximately 41.3% of SO athletes had a proxy respondent, compared to 0.5% and 1.7% of the NHIS and NHIS age-adjusted populations, respectively.

Based on the broad definition of disability, SO athletes had higher percentages of functional limitation across all WG-SS items compared to the NHIS age-adjusted population (Figure 1). The largest prevalence

Table 2. Response Distribution for Each WG-SS Domain of Functional Limitation Among SO and 2021 NHIS (Percentage of Respondents, 95% CI)

	No difficulty	Some difficulty	A lot of difficulty	Cannot do at all	Broad definition[a]	Restricted definition[b]
Vision						
SO	70.0% (65.9–73.9%)	25.4% (21.7–29.3%)	4.0% (2.5–6.1%)	0.6% (0.1–1.7%)	30.0% (26.1–34.1%)	4.6% (3.0–6.7%)
NHIS	83.0% (82.4–83.6%)	15.5% (15.0–16.1%)	1.3% (1.2–1.5%)	0.2% (0.1–0.2%)	17.0% (16.4–17.6%)	1.5% (1.3–1.6%)
NHIS age-adjusted	87.2% (86.4–87.9%)	12.1% (11.4–12.8%)	0.6% (0.5–0.8%)	0.1% (0.0–0.2%)	12.8% (12.1–13.6%)	0.7% (0.5–0.9%)
Hearing						
SO	82.6% (79.1–85.8%)	13.8% (10.9–17.0%)	3.3% (1.9–5.2%)	0.4% (0.0–1.4%)	17.4% (14.2–20.9%)	3.6% (2.2–5.6%)
NHIS	85.6% (85.1–86.1%)	12.9% (12.4–13.4%)	1.4% (1.2–1.5%)	0.1% (0.1–0.1%)	14.4% (13.9–14.9%)	1.5% (1.3–1.6%)
NHIS age-adjusted	92.1% (91.6–92.7%)	7.3% (6.8–7.8%)	0.5% (0.4–0.7%)	0.0% (0.0–0.1%)	7.9% (7.3–8.4%)	0.6% (0.4–0.7%)
Mobility						
SO	80.1% (76.4–83.5%)	15.9% (12.8–19.3%)	3.1% (1.8–4.9%)	1.0% (0.3–2.2%)	19.9% (16.5–23.6%)	4.0% (2.5–6.1%)
NHIS	82.5% (81.9–83.1%)	12.4% (11.9–12.9%)	4.2% (4.0–4.5%)	0.9% (0.8–1.0%)	17.5% (16.9–18.1%)	5.1% (4.8–5.4%)
NHIS age-adjusted	93.1% (92.6–93.6%)	5.5% (5.0–5.9%)	1.2% (1.0–1.4%)	0.2% (0.1–0.3%)	6.9% (6.4–7.4%)	1.4% (1.2–1.6%)
Communication						
SO	51.0% (46.7–55.4%)	36.8% (32.6–41.0%)	10.5% (8.0–13.4%)	1.7% (0.8–3.2%)	49.0% (44.6–53.3%)	12.2% (9.5–15.3%)
NHIS	94.9% (94.5–95.2%)	4.4% (4.1–4.7%)	0.6% (0.5–0.8%)	0.1% (0.1–0.2%)	5.1% (4.8–5.5%)	0.8% (0.7–0.9%)
NHIS age-adjusted	95.6% (95.1–96.1%)	3.8% (3.4–4.3%)	0.5% (0.3–0.6%)	0.1% (0.0–0.2%)	4.4% (3.9–4.9%)	0.5% (0.4–0.7%)
Cognition						
SO	41.4% (37.2–45.8%)	50.2% (45.8–54.6%)	8.0% (5.8–10.7%)	0.4% (0.0–1.4%)	58.6% (54.2–62.8%)	8.4% (6.2–11.1%)
NHIS	79.4% (78.7–80.0%)	18.1% (17.5–18.7%)	2.4% (2.2–2.7%)	0.1% (0.1–0.1%)	20.6% (20.0–21.3%)	2.5% (2.3–2.8%)
NHIS age-adjusted	82.9% (82.0–83.8%)	15.0% (14.1–15.8%)	2.1% (1.8–2.4%)	0.0% (0.0–0.1%)	17.1% (16.2–18.0%)	2.1% (1.8–2.4%)
Self-care						
SO	72.8% (68.7–76.5%)	21.9% (18.4–25.7%)	4.6% (3.0–6.7%)	0.8% (0.2–1.9%)	27.2% (23.5–31.3%)	5.3% (3.6–7.6%)
NHIS	96.1% (95.8–96.3%)	2.9% (2.7–3.1%)	0.7% (0.5–0.8%)	0.4% (0.3–0.5%)	3.9% (3.7–4.2%)	1.0% (0.9–1.2%)
NHIS age-adjusted	97.9% (97.6–98.2%)	1.7% (1.4–1.9%)	0.3% (0.2–0.4%)	0.2% (0.1–0.3%)	2.1% (1.8–2.4%)	0.4% (0.3–0.6%)
1+ limitations						
SO					82.1% (78.6–85.3%)	24.2% (20.6–28.1%)
NHIS					43.3% (42.4–44.1%)	8.8% (8.4–9.2%)
NHIS age-adjusted					32.2% (31.1–33.3%)	4.3% (3.9–4.7%)
2+ limitations						
SO					60.5% (56.1–64.7%)	8.8% (6.5–11.6%)
NHIS					20.3% (19.7–21.0%)	2.3% (2.1–2.6%)
NHIS age-adjusted					12.1% (11.4–12.9%)	1.0% (0.8–1.2%)

Note. [a]Broad definition includes "cannot do at all," "a lot of difficulty," or "some difficulty."
[b]Restricted definition includes "cannot do at all" or "a lot of difficulty." SO population was used as the standard to age-adjust the NHIS population.

differences between SO athletes and the age-adjusted NHIS results were limitations in self-care (PR = 12.93 [95% CI: 10.92, 15.23], communication (PR = 11.21 [95% CI: 10.05, 12.45]), and cognition (PR = 3.43 [95% CI: 3.16, 3.69]) (Table 5). Compared to the NHIS, which is older, SO athletes had higher percentages of functional limitations for communication (PR = 9.52 [95% CI: 8.59, 10.50]), self-care activities (PR = 6.90 [95% CI: 5.92, 8.00]), cognition (PR = 2.84 [95% CI: 2.62, 3.05]), and vision (PR = 1.76 [95% CI: 1.54, 2.01]),

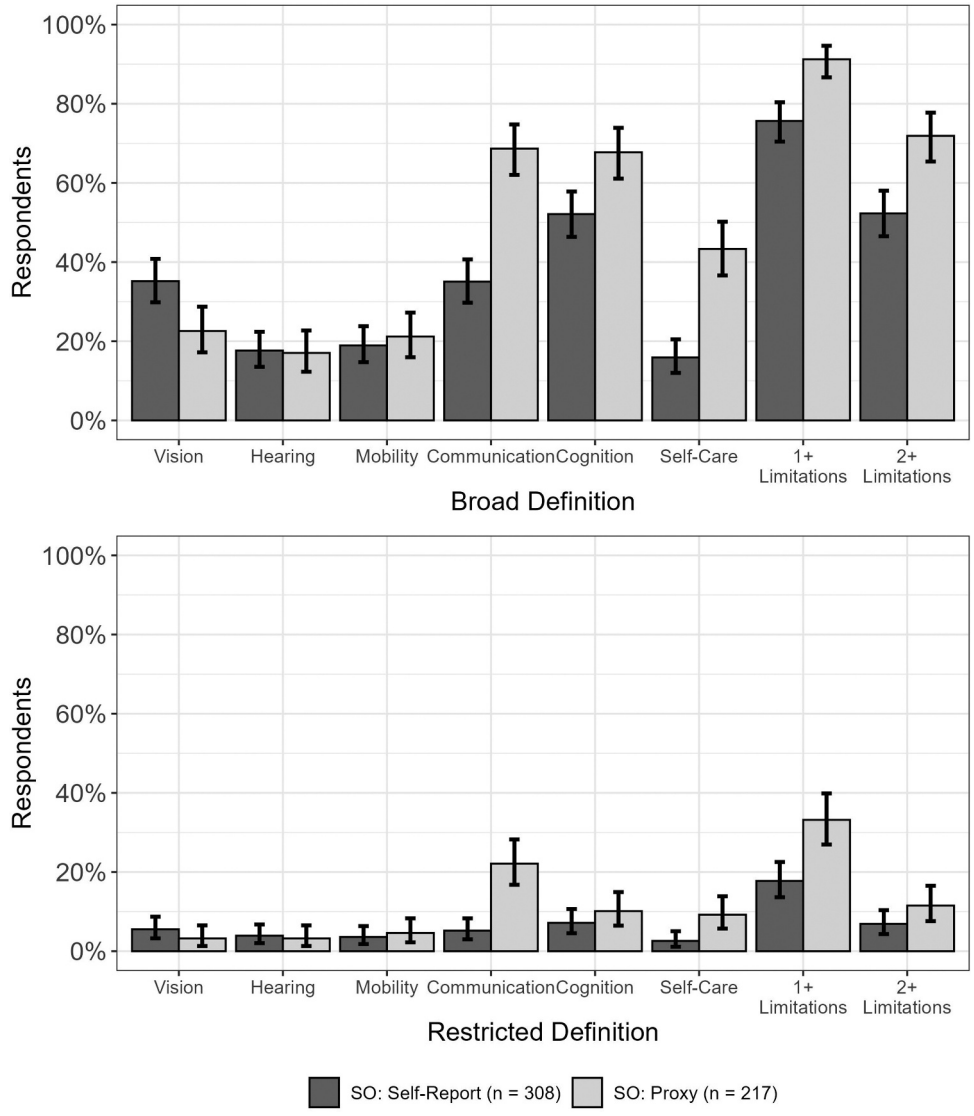

Figure 2. Functional limitations across Washington Group Short Set on Functioning (WG-SS) domains among Special Olympics athletes by respondent type and definition criteria.

with similar percentages for hearing (PR = 1.21 [95% CI: 1.00, 1.46]) and mobility (PR = 1.14 [95% CI: 0.95, 1.35]).

Based on the restricted definition of disability, 24.2% (95% CI: 20.6, 28.1%) of SO athletes reported having at least one functional limitation (Figure 1). Having at least one functional limitation was higher for SO athletes compared to NHIS (PR = 2.76 [95% CI: 2.35, 3.22]) and NHIS age-adjusted (PR = 5.63 [95% CI: 4.77, 6.62]) (Table 5). Although representing small percentages, SO athletes still had higher percentages of functional limitations across vision, hearing, communication, cognition, and self-care activities compared to NHIS comparison groups.

Discussion

This study provides a detailed characterization of functional limitations among SO athletes using the WG-SS. Findings highlight not only elevated prevalence ratios relative to an age-adjusted national sample, but also important variation by severity thresholds and reporting method. Across analyses, cognition, communication, and self-care emerged as the most frequently reported limitations, with meaningful differences observed between self- and proxy-reported functioning. Comparisons with national and non-SO samples

Table 3. Response Distribution for Each WG-SS Domain of Functional Limitation Among SO Athletes Surveyed in January and February 2022, Proxy Versus Self-Report (Percentage of Respondents, 95% CI)

	No difficulty	Some difficulty	A lot of difficulty	Cannot do it at all	Broad definition[a]	Restricted definition[b]
Vision						
Self-report	64.8% (59.2–70.2%)	29.6% (24.6–35.1%)	4.9% (2.8–7.9%)	0.7% (0.1–2.3%)	35.2% (29.8–40.8%)	5.5% (3.3–8.7%)
Proxy	77.4% (71.3–82.8%)	19.4% (14.3–25.2%)	2.8% (1.0–5.9%)	0.5% (0.0–2.5%)	22.6% (17.2–28.7%)	3.2% (1.3–6.5%)
Hearing						
Self-report	82.4% (77.6–86.5%)	13.7% (10.1–18.1%)	3.6% (1.8–6.3%)	0.3% (0.0–1.8%)	17.6% (13.5–22.4%)	3.9% (2.0–6.7%)
Proxy	82.9% (77.3–87.7%)	13.8% (9.5–19.1%)	2.8% (1.0–5.9%)	0.5% (0.0–2.5%)	17.1% (12.3–22.7%)	3.2% (1.3–6.5%)
Mobility						
Self-report	81.0% (76.2–85.3%)	15.4% (11.5–19.9%)	2.9% (1.4–5.5%)	0.7% (0.1–2.3%)	19.0% (14.7–23.8%)	3.6% (1.8–6.3%)
Proxy	78.8% (72.8–84.0%)	16.6% (11.9–22.2%)	3.2% (1.3–6.5%)	1.4% (0.3–4.0%)	21.2% (16.0–27.2%)	4.6% (2.2–8.3%)
Communication						
Self-report	64.9% (59.3–70.3%)	29.9% (24.8–35.3%)	4.5% (2.5–7.5%)	0.6% (0.1–2.3%)	35.1% (29.7–40.7%)	5.2% (3.0–8.3%)
Proxy	31.3% (25.2–38.0%)	46.5% (39.8–53.4%)	18.9% (13.9–24.7%)	3.2% (1.3–6.5%)	68.7% (62.0–74.8%)	22.1% (16.8–28.2%)
Cognition						
Self-report	47.9% (42.2–53.6%)	45.0% (39.3–50.7%)	7.2% (4.5–10.6%)	0.0% (0.0–1.2%)	52.1% (46.4–57.8%)	7.2% (4.5–10.6%)
Proxy	32.3% (26.1–38.9%)	57.6% (50.7–64.3%)	9.2% (5.7–13.9%)	0.9% (0.1–3.3%)	67.7% (61.1–73.9%)	10.1% (6.5–14.9%)
Self-care						
Self-report	84.1% (79.5–88.0%)	13.3% (9.7–17.6%)	2.3% (0.9–4.6%)	0.3% (0.0–1.8%)	15.9% (12.0–20.5%)	2.6% (1.1–5.1%)
Proxy	56.7% (49.8–63.4%)	34.1% (27.8–40.8%)	7.8% (4.6–12.2%)	1.4% (0.3–4.0%)	43.3% (36.6–50.2%)	9.2% (5.7–13.9%)
1+ limitations						
Self-report					75.7% (70.4–80.4%)	17.8% (13.6–22.5%)
Proxy					91.2% (86.7–94.6%)	33.2% (27.0–39.9%)
2+ limitations						
Self-report					52.3% (46.5–58.0%)	6.9% (4.3–10.4%)
Proxy					71.9% (65.4–77.8%)	11.5% (7.6–16.5%)

Note. [a]Broad definition includes "cannot do at all," "a lot of difficulty," or "some difficulty."
[b]Restricted definition includes "cannot do at all" or "a lot of difficulty."

with ID further contextualize who may be represented and underrepresented within SO programming, while age-based patterns underscore a possible convergence of developmental and aging-related limitations. Together, these findings underscore the value of applying a harmonized population-based measure within a community-based population with ID to inform surveillance, service planning, and inclusive sport and health programming.

The pattern of functional limitations among SO athletes reflect co-occurring limitations typical of individuals with ID. Variation across severity thresholds revealed differences in functioning and potential risk for adverse outcomes. Cognition, communication, and self-care were the most frequently reported domains, consistent with diagnostic features of ID (Schalock et al., 2021). Notably, not all athletes endorsed cognitive limitation, despite below-average intellectual functioning being a defining characteristic of ID. This suggests that the WG-SS cognition item is not always selected by respondents who would be expected to report intellectual impairment, aligning with previous literature (Hall et al., 2022; Havercamp et al., 2019). According to the WG recommended threshold of "a lot of difficulty" or "cannot do at all" (restricted definition), 24.2% of SO athletes were considered to have a functional limitation. Conversely, when including "at least some difficulty" (broad definition), 82.1% of SO athletes had at least one functional limitation, whereas nearly 20% reported no limitations. The wide difference underscores the importance of examining functional limitations across varying levels of severity. Variation in severity thresholds provides

Table 4. Prevalence ratios and 95% CI of Broad and Restricted Functional Limitations by SO Athletes Proxy Versus Self-Report

WG-SS domain (broad definition)[a]	Proxy Versus self-report
Vision	0.64 [0.48, 0.85]
Hearing	0.97 [0.66, 1.41]
Mobility	1.12 [0.79, 1.57]
Communication	1.96 [1.64, 2.34]
Cognition	1.30 [1.13, 1.50]
Self-care	2.72 [2.03, 3.67]
1+ limitations	1.21 [1.12, 1.30]
2+ limitations	1.37 [1.20, 1.58]
WG-SS domain (restricted definition)[b]	
Vision	0.58 [0.25, 1.34]
Hearing	0.82 [0.34, 1.99]
Mobility	1.28 [0.57, 2.89]
Communication	4.26 [2.51, 7.27]
Cognition	1.41 [0.81, 2.47]
Self-care	3.55 [1.63, 7.76]
1+ limitations	1.87 [1.38, 2.54]
2+ limitations	1.67 [0.96, 2.88]

Note [a]Broad definition includes "cannot do at all," "a lot of difficulty," or "some difficulty."
[b]Restricted definition includes "cannot do at all" or "a lot of difficulty."

a more nuanced characterization of the SO population and supports the identification of homogeneous subgroups within an otherwise heterogeneous group. This enables the development of more targeted programming and supports than would be possible using a dichotomous classification of disability.

Further, moving away from the restricted definition allows us to highlight potential risks for negative outcomes among subgroups with differing levels of limitation (Hanass-Hancock et al., 2023). Participation restrictions and other poor outcomes have been shown among people with "some difficulty." Mitra and Yap (2021) found that individuals reporting any level of difficulty experience worse outcomes across multiple domains, including education, personal activities, health, standard of living, and well-being, compared with those reporting no difficulty. Thus, despite less severe limitations overall, SO athletes may still experience health inequalities, which may be exacerbated by co-occurring limitations.

These findings carry important implications for clinical training, health system–strengthening efforts, and inclusive service delivery within SO health programming. SO currently provides training for healthcare professionals on working with individuals with ID in clinical settings. Incorporating data on functional limitations could further serve as a baseline for tailoring care. For instance, the higher prevalence of communication-related limitations among SO athletes highlights the importance of speech and language accommodations to support equitable care. More broadly, these findings inform SO's health system—strengthening efforts with disability agencies and health departments by supporting efforts to understand and address better the health needs of individuals with ID across regions. Such information can guide more inclusive and equitable health programming for SO athletes and help reduce health disparities.

These within-SO patterns raise important questions about who is represented in SO programming relative to the broader population of adults with ID. Compared with a non-SO sample of adults with ID (Hall et al., 2022), SO athletes reported fewer and less severe limitations across domains. For example, using the broad definition, prevalence ranged from 94% versus 59% for cognition, 51% versus 20% for

Table 5. Prevalence Ratios and 95% CI of Broad and Restricted Functional Limitations by WG-SS Domain Comparing Special Olympics Athletes to the 2021 NHIS

WG-SS domain (broad definition)[a]	SO Versus NHIS	SO Versus NHIS age-adjusted
Vision	1.76[1.54, 2.01]	2.34 [2.04, 2.67]
Hearing	1.21 [1.00, 1.46]	2.21 [1.82, 2.67]
Mobility	1.14 [0.95, 1.35]	2.90 [2.42, 3.45]
Communication	9.52 [8.59, 10.50]	11.21 [10.05, 12.45]
Cognition	2.84 [2.62, 3.05]	3.43 [3.16, 3.69]
Self-care	6.90 [5.92, 8.00]	12.93 [10.92, 15.23]
1+ limitations	1.90 [1.81, 1.97]	2.55 [2.43, 2.66]
2+ limitations	2.97 [2.76, 3.19]	4.99 [4.60, 5.38]
WG-SS domain (restricted definition)[b]		
Vision	3.12 [2.08, 4.63]	6.56 [4.31, 9.94]
Hearing	2.47 [1.58, 3.85]	6.27 [3.91, 10.00]
Mobility	0.79 [0.52, 1.19]	2.89 [1.87, 4.42]
Communication	15.90 [12.19, 20.62]	22.47 [16.78, 29.97]
Cognition	3.33 [2.48, 4.43]	3.94 [2.93, 5.28]
Self-care	5.15 [3.53, 7.47]	11.94 [7.92, 17.90]
1+ limitations	2.76 [2.35, 3.22]	5.63 [4.77, 6.62]
2+ limitations	3.76 [2.82, 4.98]	8.92 [6.56, 12.06]

Note. [a]Broad definition includes "cannot do at all," "a lot of difficulty," or "some difficulty."
[b]Restricted definition includes "cannot do at all" or "a lot of difficulty."

mobility, and 49% versus 27% for self-care. These differences suggest that adults with greater functional limitations may be underrepresented in SO. This is consistent with National Core Indicators data showing that people with ID who have higher mobility limitations are less likely to participate in SO programming (Prohn et al., 2023). Differences in inclusion and exclusion criteria likely contributed to variation across samples. For example, Hall et al. (2022) recruited participants from the National Survey on Health and Disability, requiring respondents to self-categorize as having an intellectual or cognitive disability, excluding anyone who answered "no" to whether a health condition or impairment affected daily activities or required special equipment. In contrast, SO athletes were excluded if they did not self-identify as having an ID or learning disability. These discrepancies highlight how definitional choices shape estimates of functional limitations and reinforce the need for standardized definitions of ID across health surveys.

Proxy-reported data for SO athletes showed higher prevalence of co-occurring limitations with increased proportions of communication and self-care limitations. The differences in proxy and self-report demonstrate the range of functional limitations and reported needs among SO athletes. When providing services for those with ID, it is essential to support cognition, communication, and self-care needs, while addressing the unique combination of functional limitations at the individual level. This requires assessing and addressing individuals' perceived functioning and personal choice in relation to service needs. For SO, these findings highlight the need to accommodate diverse needs and provide additional support for athletes and their caregivers to ensure equitable participation across sport, health, and leadership activities.

When compared to the age-adjusted NHIS population, SO athletes had higher prevalences of functional limitations. Analyses showed notable contrasts in demographics and in the prevalence of functional limitations reported across WG-SS domains. Using a broad definition, all six WG-SS domains showed notably higher percentages of SO athletes reporting functional limitations compared to the age-adjusted NHIS population. This pattern held when the more restrictive definition was applied. The largest prevalence

ratios were seen for communication and self-care, for both the restricted and broad definitions. Notably, the prevalence ratio for communication limitations under the restricted definition was approximately double the prevalence ratio for communication when applying the broad definition (which included "some difficulty"). These findings provide important context for understanding functional limitations among SO athletes relative to an age-adjusted national population. Nonetheless, additional population-based comparisons are needed to characterize functional limitations among adults with ID outside of SO programs.

Compared with the 2021 NHIS population, SO athletes present with functional limitations at younger ages, suggesting different developmental and aging-related pathways of limitation. Differences in reported functional limitations were reduced when SO athletes were compared to the "older" NHIS national population estimate. The increase in functional limitation in the NHIS national population estimate is likely due to age-related declines (Newman, 2023), whereas SO athletes' functional limitations are likely associated with developmental limitations originating prior to age 22 (Schalock et al., 2021). For example, the percentages of hearing and mobility limitations are similar among SO athletes and the NHIS national population estimate, indicating a mix of developmental limitations (SO athletes) and age-related decline (NHIS national population estimate). Regardless, functional limitations are present at younger ages for SO athletes. It is important to consider the convergence of developmental limitation and age-related limitation when determining the types of services and needs among those with ID. Given that SO athletes experience functional limitations at younger ages, it is critical that sport and health programming anticipate and accommodate these needs to promote long-term participation. Targeted training for coaches and expanded opportunities to engage aging athletes will be essential to sustain engagement and maximize the benefits of SO participation.

Limitations

This study is subject to several limitations that should be considered when interpreting the findings. First, the use of convenience sampling to recruit adults with ID who participate in SO programming prevents us from generalizing these results to the broader population of individuals with ID. For instance, SO athletes have been shown to be younger, mostly White, and have greater mobility than those not in SO (Ausderau et al., 2019; Crawford et al., 2015; Prohn et al., 2023). Additionally, the convenience sampling method used in this study may have introduced geographic bias, as the sample may not adequately represent individuals from different geographical locations. Therefore, our sample is not comparable to the broader population of individuals with ID nor to the population-based samples in national health surveys.

Another limitation stems from the SO survey's emphasis on collecting data concerning the COVID-19 pandemic experience. This specific subject matter might have increased the likelihood of proxy responses due to the need for proxies to provide medical information, potentially leading to bias in the overall respondent pool. Proxy responses to the WG-SS may introduce bias when reporting subjective functional limitations such as vision, cognition, and hearing. The level of accuracy in proxy responses can vary depending on the proxy's familiarity with the individual (Scott & Havercamp, 2018).

Furthermore, it is important to acknowledge that the data collection methodologies differed between the SO survey (web-based) and the NHIS survey (interview format). Consequently, individuals without internet access were excluded from the SO survey, potentially introducing selection bias. Web surveys generally yield lower response rates than other survey methods, with factors such as recruitment strategies, target populations, contact attempts, and the country disseminated in influencing responses (Daikeler et al., 2020). Conversely, the NHIS survey's interview format may impact response patterns differently, potentially introducing social desirability and acquiescence bias due to in-person data collection (Bergen & Labonté, 2020; Heerwegh, 2009). Despite these limitations, it is worth noting that this study represents the largest investigation of the WG-SS among people with ID conducted to date.

Next Steps

These outcomes contribute to a broader understanding of functional limitations and health surveillance among individuals with ID. Because ID was removed as a disability-associated condition from the NHIS in 2019, there are currently no public health surveillance tools that can capture the population with ID to allow

for population-based comparisons of functional limitations, health, and utilization of health services. SO health data, state-level data through the National Core Indicators, and administrative data sets are among the few available sources of health data that are specific to those with ID. These sources of data have their limitations, including nonrepresentative and biased samples of adults with ID. Without tools to categorize those with ID, we lack the ability to examine health disparities in this population in comparison to the general population and other groups with a disability in national health surveys. Establishing a standard question set and "harmonizing" these questions across population surveys, program-based data, and administrative datasets enables comparative research and strengthens the interpretability of findings and service needs across contexts (Mont et al., 2022).

SO is committed to improving the health of those with ID and will continue collaborating with government officials, academic investigators, and advocacy leaders to understand how individuals with ID and their proxy respondents report functional limitations in response to public health surveys and point-of-care questionnaires. To advance ID surveillance research, the authors aim to build on current findings and related work in disability epidemiology to develop a self- or proxy-reported simple checklist that includes core features of ID. This tool could serve as a standard ID indicator in public health surveillance and administrative data sets, complementing the utility of WG-SS by enabling both the identification of ID and the assessment of functional limitation severity in population-based systems.

Beyond surveillance, these findings will be leveraged to strengthen SO programming and service delivery. Data on functional limitation profiles and severity will inform the refinement of health initiatives, coach education, and athlete support strategies by aligning program content with identified needs in areas such as communication, self-care, and cognition. These data can guide resources and the development of tailored accommodations. Over time, integrating functional limitation data into program planning will support more responsive, equitable, and evidence-informed SO health and sport programming.

Conclusion

This study demonstrates the value of incorporating the WG-SS into SO surveys to support both programmatic and surveillance objectives. The primary contribution of this work is improved understanding of athlete characteristics and functional support needs to inform community-based programming. Second, applying the WG-SS within a population self-identified as having ID contributes to disability surveillance research by demonstrating how responses vary by severity thresholds, reporting method, and comparison with national estimates. Together, these results clarify how a standardized global measure can be leveraged within community-based populations with ID to strengthen both service delivery and population-level monitoring. Comparisons of broad versus restricted thresholds further show how definitional choices substantially influence prevalence estimates, with direct implications for disparity monitoring and program planning. Analyses of self-versus proxy reports highlight methodological and interpretive challenges, emphasizing the need for approaches that balance individual voice with caregiver perspectives. Beyond documenting prevalence, this work illustrates how leveraging SO as a platform for data collection and health promotion can generate critical evidence to inform surveillance and program delivery. Together, these findings demonstrate how the WG-SS can be applied to understand functional limitations better among people with ID, identify gaps in health, and guide strategies for strengthening service delivery.

Acknowledgments

The authors thank Amanda G. Garcia-Williams, PhD, for her assistance with editorial review of this article and Nazik Elgaddal, MS, for her analytic support using the NHIS data. The findings of this study were presented at the American Public Health Association annual conference on November 12, 2023, in a poster presentation.

Disclosure Statement

No potential conflict of interest was reported by the author(s).

Funding

Special Olympics health activities are supported by many sources, including in the United States by grant NU27DD000021 from the Centers for Disease Control and Prevention of the US Department of Health and Human Services, with $18.1 million (64%) financed with US federal funds and $10.2 million (36%) supported by nonfederal sources. These contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention or the Department of Health and Human Services.

ORCID

Alicia M. Dixon-Ibarra http://orcid.org/0000-0001-8499-5233
Andrew E. Lincoln http://orcid.org/0000-0003-2345-3320

References

Ausderau, K., St. John, B., Hladik, E., Romaniak, H., & Al-Heizan, M. (2019). Health outcomes of Special Olympics athletes as compared to nonathletes. *American Journal of Occupational Therapy*, *73*(4_Supplement_1), 7311505119p1. https://doi.org/10.5014/ajot.2019.73S1-PO3014

Bergen, N., & Labonté, R. (2020). "Everything is perfect, and we have No problems": Detecting and limiting social desirability bias in qualitative research. *Qualitative Health Research*, *30*(5), 783–792. https://doi.org/10.1177/1049732319889354

Brown, M., Higgins, A., & MacArthur, J. (2020). Transition from child to adult health services: A qualitative study of the views and experiences of families of young adults with intellectual disabilities. *Journal of Clinical Nursing*, *29*(1–2), 195–207. https://doi.org/10.1111/jocn.15077

Cheatham, L. P., & Randolph, K. (2022). Education and employment transitions among young adults with disabilities: Comparisons by disability status, type and severity. *International Journal of Disability, Development and Education*, *69*(2), 467–490. https://doi.org/10.1080/1034912X.2020.1722073

Clopper, C. J., & Pearson, E. S. (1934). The use of confidence or fiducial limits illustrated in the case of the binomial. *Biometrika*, *26*(4), 404–413.

Crawford, C., Burns, J., & Fernie, B. A. (2015). Psychosocial impact of involvement in the Special Olympics. *Research in Developmental Disabilities*, *45–46*, 93–102. https://doi.org/10.1016/j.ridd.2015.07.009

Daikeler, J., Bošnjak, M., & Lozar Manfreda, K. (2020). Web versus other survey modes: An updated and extended meta-analysis comparing response rates. *Journal of Survey Statistics and Methodology*, *8*(3), 513–539. https://doi.org/10.1093/jssam/smz008

Department of Health and Human Services. (n.d.). *Implementation guidance on data collection standards for race, ethnicity, sex, primary language, and disability status*.

Fullana, J., Díaz-Garolera, G., Puyaltó, C., Rey, A., & Fernández-Peña, R. (2021). Personal support networks of young people with mild intellectual disabilities during the transition to adult life. *International Journal of Environmental Research and Public Health*, *18*(22), Article 22. https://doi.org/10.3390/ijerph182211810

Groce, N. E., & Mont, D. (2017). Counting disability: Emerging consensus on the Washington Group questionnaire. *The Lancet Global Health*, *5*(7), e649–e650. https://doi.org/10.1016/S2214-109X(17)30207-3

Hall, J. P., Kurth, N. K., Ipsen, C., Myers, A., & Goddard, K. (2022). Comparing measures of functional difficulty with self-identified disability: Implications for health policy. *Health Affairs*, *41*(10), 1433–1441. https://doi.org/10.1377/hlthaff.2022.00395

Hanass-Hancock, J., Kamalakannan, S., Murthy, G. V. S., Palmer, M., Pinilla-Roncancio, M., Rivas Velarde, M., Tetali, S., & Mitra, S. (2023). What cut-off(s) to use with the Washington Group Short Set of questions? *Disability and Health Journal*, *16*(4), 101499. https://doi.org/10.1016/j.dhjo.2023.101499

Havercamp, S. M., & Krahn, G. L. (2019). What matters in population health and how we count it among people with intellectual and developmental disabilities. *Intellectual & Developmental Disabilities*, *57*(5), 347–356. https://doi.org/10.1352/1934-9556-57.5.347

Havercamp, S. M., Krahn, G. L., Larson, S. A., Fujiura, G., Goode, T. D., Kornblau, B. L., & the National Health Surveillance for IDD Workgroup. (2019). Identifying people with intellectual and developmental disabilities in national population surveys. *Intellectual & Developmental Disabilities*, *57*(5), 376–389. https://doi.org/10.1352/1934-9556-57.5.376

Heerwegh, D. (2009). Mode differences between face-to-face and web surveys: An experimental investigation of data quality and social desirability effects. *International Journal of Public Opinion Research*, *21*(1), 111–121. https://doi.org/10.1093/ijpor/edn054

Klein, R. J., & Schoenborn, C. A. (2001). *Age adjustment using the 2000 projected U.S. population: (583772012-001)* [Dataset]. https://doi.org/10.1037/e583772012-001

Korn, E. L., & Graubard, B. I. (1998). Confidence intervals for proportions with small expected number of positive counts estimated from survey data. *Survey Methodology*, *24*, 193–201.

Krahn, G. L. (2019). A call for better data on prevalence and health surveillance of people with intellectual and developmental disabilities. *Intellectual & Developmental Disabilities*, *57*(5), 357–375. https://doi.org/10.1352/1934-9556-57.5.357

Krahn, G. L., & Havercamp, S. M. (2019). From invisible to visible to valued: Improving population health of people with intellectual and developmental disabilities. *Intellectual & Developmental Disabilities*, *57*(5), 476–481. https://doi.org/10.1352/1934-9556-57.5.476

Lincoln, A. E., Dixon-Ibarra, A. M., Hanley, J. P., Smith, A. L., Martin, K., & Bazzano, A. (2023). Global report on COVID-19 vaccination and reasons not to vaccinate among adults with intellectual disabilities: Results from secondary analyses of Special Olympics' program planning. *PLOS Global Public Health*, *3*(6), e0001367. https://doi.org/10.1371/journal.pgph.0001367

Loeb, M. (2016). International census/survey data and the short set of disability questions developed by the Washington Group on Disability Statistics. In B. M. Altman (Ed.), *International measurement of disability: Purpose, method and application* (pp. 255–304). Springer International Publishing. https://doi.org/10.1007/978-3-319-28498-9_15

Madans, J. H., Loeb, M. E., & Altman, B. M. (2011). Measuring disability and monitoring the UN Convention on the Rights of Persons with Disabilities: The work of the Washington Group on Disability Statistics. *BMC Public Health*, *11*(4), S4. https://doi.org/10.1186/1471-2458-11-S4-S4

Mitra, S., & Yap, J. (2021). *The disability data report* (SSRN scholarly paper 3871045). https://papers.ssrn.com/abstract=3871045

Mont, D., Madans, J., Weeks, J. D., & Ullmann, H. (2022). Harmonizing disability data to improve disability research and policy. *Health Affairs*, *41*(10), 1442–1448. https://doi.org/10.1377/hlthaff.2022.00479

Naing, N. N. (2000). Easy way to learn standardization: Direct and indirect methods. *The Malaysian Journal of Medical Sciences: MJMS*, *7*(1), 10–15.

National Center for Health Statistics. (2019, July 26). *Available for download from*: *Washington Group on Disability Statistics. Washington Group on Disability Statistics: Rationale for the Short Set* [internet]. NCHS, Washington Group. [*2022* https://www.cdc.gov/nchs/washington_group/wg_ rationale.htm

National Center for Health Statistics. (2022). *National Health Interview Survey: 2021 survey description*. Centers for Disease Control and Prevention. https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/NHIS/2021/srvydesc-508.pdf

Newman, A. B. (2023). The epidemiology and societal impact of aging-related functional limitations: A looming public health crisis. *The Journals of Gerontology: Series A*, *78*(Supplement_1), 4–7. https://doi.org/10.1093/gerona/glad021

Parker, J. D., Talih, M., Malec, D. J., Beresovsky, V., Carroll, M., Gonzalez, J. F., Hamilton, B. E., Ingram, D. D., Kochanek, K., McCarty, F., Moriarity, C., Shimizu, I., Strashny, A., & Ward, B. W. (2017). National Center for Health Statistics data presentation standards for proportions: Data evaluation and methods research. *Vital and Health Statistics*, *2*(175), 1–22. https://www.cdc.gov/nchs/data/series/sr_02/sr02_175.pdf

Patient Protection and Affordable Care Act, Pub. L. No. 111-148, 124 Stat. 119 (2010). (n.d.).

Prohn, S., Dinora, P., & Brody, K. D. (2023). Contributions of community organizations to personal outcomes for people with intellectual and developmental disabilities: A study of Special Olympics program participation. *Developmental Disabilities Network Journal*, *3*(2). https://doi.org/10.59620/2694-1104.1044

Schalock, R. L., Luckasson, R., & Tassé, M. J. (2021). An overview of intellectual disability: Definition, diagnosis, classification, and systems of supports (12th ed.). *American Journal on Intellectual and Developmental Disabilities*, *126*(6), 439–442. https://doi.org/10.1352/1944-7558-126.6.439

Scott, H. M., & Havercamp, S. M. (2018). Comparisons of self and proxy report on health-related factors in people with intellectual disability. *Journal of Applied Research in Intellectual Disabilities*, *31*(5), 927–936. https://doi.org/10.1111/jar.12452

Special Olympics 2022 global reach report (Special Olympics annual global reach reports). (2023). Special Olympics International.

Washington Group on Disability Statistics. (2021). *Creating disability severity indicators using the Washington Group Short Set on Functioning*. https://www.washingtongroup-disability.com/fileadmin/uploads/wg/Documents/WG_Short_Set_on_Functioning_-_Creating_Disability_Severity_Indicators.pdf

Weeks, J. D. (2016). Background and origin of the Washington Group: Improving the state of disability data. In B. M. Altman (Ed.), *International measurement of disability: Purpose, method and application* (pp. 3–14). Springer International Publishing. https://doi.org/10.1007/978-3-319-28498-9_1

Weeks, J., Dahlhamer, J., Madans, J., & Maitland, A. (2021). *Measuring disability: An examination of differences between the Washington Group Short Set on Functioning and the American Community Survey disability questions*. National Center for Health Statistics (U.S.). https://doi.org/10.15620/cdc:107202

Woodman, A. C., Mailick, M. R., Anderson, K. A., & Esbensen, A. J. (2014). Residential transitions among adults with intellectual disability across 20 years. *American Journal on Intellectual and Developmental Disabilities*, *119*(6), 496–515. https://doi.org/10.1352/1944-7558-119.6.496

Limitations fonctionnelles rapportées chez des adultes américains présentant une déficience intellectuelle et participant aux Olympiques spéciaux : une analyse comparative avec la population générale

Résumés en Français

Le questionnaire « Washington Group Short Set on Functioning » (WG-SS) permet d'identifier les limitations fonctionnelles à tous les niveaux de gravité. L'intégration du WG-SS dans les enquêtes des Olympiques spéciaux (OS) permet de mieux cerner les besoins en matière de soutien fonctionnel et d'orienter les programmes des OS destinés aux personnes présentant une déficience intellectuelle. Cette étude a examiné le fonctionnement en utilisant à la fois une définition restrictive et une définition large de la limitation chez 525 athlètes américains des OS ayant répondu à une enquête en ligne en 2022. Les résultats déclarés par les athlètes eux-mêmes et par leurs représentants ont été comparés aux estimations de l'Enquête nationale sur la santé (National Health Interview Survey [NHIS]). Près d'un quart des athlètes des OS (24,2 %) ont déclaré une limitation fonctionnelle selon la définition restrictive, tandis que plus des trois quarts (82,1 %) ont déclaré des limitations selon la définition large. Des différences sont apparues entre les données déclarées par les athlètes eux-mêmes et celles déclarées par des proches. Par rapport aux estimations de la NHIS ajustées en fonction de l'âge, les athlètes des OS présentaient des ratios de prévalence (RP) plus élevés dans les six domaines, y compris les soins personnels (RP = 12,93) et la communication (RP = 11,21). Ces résultats soulignent la diversité fonctionnelle chez les athlètes des OS et orientent la programmation et la surveillance du handicap.

Limitaciones funcionales reportadas entre adultos estadounidenses con discapacidad intelectual que participan en las Olimpiadas Especiales: Un análisis comparativo con la población general

Resumenes en Español

El Conjunto Breve de Funcionamiento del Grupo de Washington (WG-SS) permite identificar limitaciones funcionales en distintos niveles de gravedad. La incorporación del WG-SS en las encuestas de las Olimpiadas Especiales (OE) contribuye a comprender las necesidades de apoyo funcional y a orientar la programación de las OE para personas con discapacidad intelectual. Este estudio examinó el funcionamiento utilizando una definición restrictiva y una amplia delimitación entre 525 atletas estadounidenses de las OE que completaron una encuesta en línea en el año 2022. Los resultados autoinformados y los reportados por terceros se compararon con las estimaciones de la Encuesta Nacional de Entrevistas de Salud (NHIS). Casi una cuarta parte de los atletas de las OE (24,2 %) reportaron alguna limitación funcional según la definición restrictiva, mientras que más de tres cuartas partes (82,1 %) reportaron limitaciones según la definición amplia. Se observaron diferencias entre los datos autoinformados y los reportados por terceros. En comparación con las estimaciones ajustadas por edad del NHIS, los atletas SO presentaron mayores índices de prevalencia en los seis dominios, incluyendo el autocuidado (PR = 12,93) y la comunicación (PR = 11,21). Estos hallazgos resaltan la diversidad funcional entre los atletas SO y aportan información valiosa para la programación y la vigilancia de la discapacidad.