Disability Inclusive Data and Systems: Analysis of the integration of the Washington Group Questions on Disability into the Annual School Census in Pakistan

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Study Information

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Abbreviations

AIOU	Allama Iqbal Open University
ASC	Annual School Census
CFM	Child Functioning Module
CFM-TV	Child Functioning Module – Teacher Version
DARE - RC	Data and Research in Education Research Consortium
DSF	Data Standardisation Framework
EMIS	Education Management Information System
ESP	Education Sector Plan
FD	Functional Difficulty
FGDs	Focus Group Discussions
GPE	Globel Partnership for Education
ICT	Islamabad Capital Territory
KIIs	Key Informant Interviews
KPK	Khyber Pakhtunkhwa
NOC	No Objection Certificate
PIE	Pakistan Institute of Education
PPIU	Policy Planning Implementation Unit
RSU	Reform Support Unit
SABER	System Approach for Better Education Result
SIS	School Information System
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
VI	Visual Impairment
WG-SS	Washington Group Short Set

1 Executive summary

1.1 Background, aims and rationale

Information on children with disabilities in educational system data is essential to a country's ability to provide quality inclusive education. In Pakistan, prior to 2023, collection of disability data in the education system was at the discretion of individual provinces, leading to substantial variations in the extent and nature of data collected. As part of broader work to standardise key education system data, disability indicators were incorporated into the Data Standardisation Framework approved in 2023. This study examines the integration of four (of six) Washington Group Short Set (WG-SS) questions into Pakistan's 2023/24 Annual School Census (ASC), across all provinces, generating numbers of schoolchildren with difficulties seeing, hearing, walking and remembering or concentrating.

The ASC is an annual exercise designed to generate accurate data about all public, mainstream schools operating in Pakistan, providing critical information on school staffing, enrolment and infrastructure. As ASC data is used for education system management, resource allocation, policy and reporting against international commitments such as the Sustainable Development Goals, the quality of this data is of vital importance.

This mixed-methods study aimed to better understand the nature and quality of this WG-SS ASC data, and how data collection processes, planning, and implementation shaped the data. Specific research questions were:

- How does disability data and data quality vary across schools and provinces? What drives these differences? How can data quality be enhanced?

- How did stakeholders, including teachers, experience WG-SS training, data collection, data analysis and use? What were successes and challenges?

- What is the relationship between school- and class-level ASC data on difficulty seeing and refractive error and visual impairment as assessed by an optometrist?

- At each system level, what opportunities exist for strengthening disability data collection, analysis and use? What education system infrastructure and capacity strengthening will improve integration of disability data?

Study findings will support strengthening of future disability data collection in the ASC.

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1.2 Methodology

Key study components were:

1. Documentary review of materials relating to ASC 2023/24. This covered all documents related to the integration of the WG-SS in the ASC, including example forms, guidelines, training materials, and reports.

2. Secondary quantitative analysis of WG-SS ASC data, exploring completeness and consistency of data across schools and provinces, and numbers of children reported to be experiencing difficulty in each functional domain.

3. Key Informant Interviews (KIIs) with stakeholders at federal and provincial level to understand experiences with data collection and analysis, and KIIs and focus group discussions (FGDs) with headteachers and teachers at four purposively selected schools reporting either very high or very low prevalence of children with functional difficulties in each province.

4. Vision screening of children in two schools in Punjab, to compare clinical data to teacher-generated WG-SS data on difficulty seeing.

1.3 Findings

Participants in the qualitative work recognised inclusion of the WG-SS questions as a significant demonstration of commitment to disability inclusive education in Pakistan, resulted from considerable effort and cooperation among stakeholders. Respondents at federal, provincial, and school levels acknowledged the value of this step for institutionalisation of inclusive education in Pakistan. The scale of this undertaking was enormous, and the largest known use of WG-SS questions outside of a population census. However, integration of the questions took place under significant time pressure. Combined with limited technical capacity, this led to challenges with data collection forms.

These factors also severely constrained development of guidance materials, and limited training or guidance reached schools or teachers. As a result, schools developed their own methods for answering the questions, creating considerable variations in practice. Lack of clarity about the data collection processes and purpose contributed to disengagement at school level.

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Quantitative analysis showed low prevalence of functional difficulty (FD) in the ASC data, with marked variations evident across schools and provinces. Most schools reported no children with functional difficulty of any type or severity. Comparison of the ASC data to other population-based FD data revealed that ASC prevalence was notably lower than would be expected – which is consistent with the under-reporting identified in the qualitative work. In the ASC data, variations in FD prevalence were most extensive in the domains of seeing and remembering, which participants had described as least clear. Vision screening in two schools found that despite substantially different prevalence of seeing FD in the ASC data, rates of clinically assessed visual impairment were in fact similar.

The study found limited evidence of analysis, reporting or use of the data at provincial level, with two main implications. Firstly, a lost opportunity for stakeholders to interrogate data and identify strategies for improvements in data quality. Secondly, this contributed to frustration and disengagement among teachers and schools who had invested time and effort in generating the data. However, a small number of schools visited did report making use of the data to support them in better meeting children's learning needs.

Finally, although challenges with disability awareness persisted among some stakeholders, the process of engaging with the WG-SS data collection had increased awareness and created an appetite for more training among many teachers and headteachers. Therefore, in addition to generating valuable data, the introduction of these tools appears to have supported some shifts in attitudes and behaviours toward inclusive education.

1.4 Implications for policy, practice, and future research

The Data Standardisation Framework (DSF) is an important step towards standardisation of ASC disability data, with the potential to benefit support for, and implementation of, inclusive education. However, due to capacity constraints and concerns about data quality, disability data from the 2023/24 ASC has not fed meaningfully into planning, resource allocation, or monitoring. Strengthening data quality and use will be essential to ensuring it can inform national and provincial level policy decisions through the following mechanisms:

- **Provincial Education Policies:** Through the National Education Policy Development Framework (NEPDF), data can inform evidence-based and inclusive provincial education policies, as well as teacher professional development guidelines and strategies.

- **Provincial Education Sector Plans:** Data can facilitate more accurate allocations to meet learning needs of children with disabilities in the next 5-yearly provincial Education Sector Plans (ESPs).

- **Annual Education Budgeting and PSDP:** Accurate ASC data will facilitate provincial governments to make appropriate disability-inclusive budgetary allocations to school management committees (SMCs) and other educational stakeholders.

- **Sustainable Development Goals (SDGs):** This data is critical for disability-disaggregated reporting on Pakistan's progress towards SDG 4 (inclusive and equitable quality education).

Areas in which future research could prove valuable include:

- School-level processes for generation of accurate and reliable WG-SS data.

- Approaches to training on data collection.

- Optimal structure, content and use of individual learner-level EMIS records including disability data.

- Strategies to enhance data analysis, interpretation and use, at all system levels, including within districts, clusters and schools.

- Mechanisms to support linkages between education and health departments in relation to disability data.

- Relationships between disability data collection and disability stigma and discrimination.

Recommendations

1. Strengthen mechanisms for collection and analysis of disability data in the ASC:

- At federal and provincial level, strengthening guidance and capacity on WG-SS data collection and analysis, and developing the Technical Working Group on Inclusive Education.

- Considering inclusion of the remaining two WG-SS questions.

- At district and school level, empowering teachers to play a well-defined role in WG-SS data collection through providing clear guidance and training.

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2. Support better utilisation of ASC data in the Education Sector:

- Building capacity to interpret and use WG-SS data, including through training, technical guidance, and OPD engagement.

- Developing mechanisms and processes to ensure, once data quality allows, that data informs policy development, allocation of resources and service delivery to meet needs of children with disabilities.

3. Ensure sustainability for disability data within the Annual School Census

- Sensitising stakeholders at all levels on disability inclusion and inclusive education, including through pre-service and in-service training to teachers, and collaborating with OPDs to combat stigma and discrimination.

- Strengthening provincial Education Management Information Systems (EMIS), including through investment in electronic systems which make data accessible at the school level.

- Ensuring that schools, teachers, and district officials benefit from collection of the WG-SS data, including by providing guidance on data use, and feedback on data submitted.

- Ensuring robust quality assurance mechanisms and monitoring systems at federal and provincial levels for ongoing iterative improvements in data quality.

2 Introduction

2.1 Background

Globally, an estimated 240 million children have disabilities (United Nations Children's Fund, 2021). The right of children with disabilities to an equitable and inclusive education is confirmed in Article 24 of the United Nations Convention on the Rights of Persons with Disabilities (UN General Assembly, 2007; UNESCO, 2020). However, children with disabilities remain at elevated risk of educational exclusion (Kuper et al., 2014; Mizunoya et al., 2018), or poorer educational outcomes (UNESCO, 2020; UNESCO Institute for Statistics, 2018; United Nations Children's Fund, 2021). Educational exclusion has knock-on negative effects on other domains, including health and longer term social and economic wellbeing (Kuper et al., 2014; United Nations Children's Fund, 2021).

In Pakistan, many children with disabilities are still excluded from education and have poorer educational outcomes (Kamran & Bano, 2023; Malik et al., 2022; Singal et al., 2020). While the countries large private schooling sector educates many children with disability, evidence suggests that about half are in the public schooling system (Malik et al., 2022). Although inclusive education is as a policy objective in Pakistan, inclusive education policy guidelines are often not implemented, and few educational facilities are equipped to meet the needs of children with disabilities (Kamran & Bano, 2023).

Target 4.5 of SDG 4 (Pakistan Institute of Education (PIE) & UNESCO, 2025; UN General Assembly, 2015) is to "ensure equal access to all levels of education" for vulnerable children, including children with disabilities. Among other things, this requires identification of children with disabilities (or more realistically, functional difficulties) enrolled in schools (UNICEF Education Section Programme Division, 2016). In most countries, including Pakistan, EMIS data are not currently disability disaggregated, rendering children with additional needs invisible and uncounted (Global Partnership for Education (GPE), 2019; UNESCO Institute for Statistics, 2019; UNICEF, 2013). A core challenge is the absence of a standardised and practical approach to identification of children with disabilities and their needs within an educational setting.

To date, there is no shared definition of childhood disability, nor agreement on how to measure it, due to cultural differences in understanding disability, limited availability of medical screening services, and social stigma. The Washington Group Question Sets on Disability, developed by the UN Statistical Commission, provide tools to collect disability data

in standardised and internationally comparable ways, with a focus on functional limitations arising from an environment that is not accessible to all. The WG-SS is the most commonly used tool (Washington Group on Disability Statistics, 2022). It measures functional difficulties across six domains (seeing, hearing, walking, communication, remembering and concentrating, and self-care), and is suitable for people aged 5 years and older (Madans et al., 2011). The Washington Group advises, where strictly necessary due to resource or operational considerations, that a sub-set of four of the questions may be used (covering the domains of seeing, hearing, walking and remembering) (Washington Group of Disability Statistics).

In the absence of alternatives, use of these questions has been recommended for use in EMIS systems by UNICEF (UNICEF Education Section Programme Division, 2016). However, they come with two important limitations. Firstly, they are designed and validated for use in national Censuses and population-based surveys, and few countries have attempted to integrate them into routine EMIS systems (Sprunt et al., 2019; Sprunt & Marella, 2021). Secondly, they were primarily developed for use with adults and exclude key aspects of child development, and therefore severely underestimate prevalence of functional difficulties in children (Cappa et al., 2015; Loeb et al., 2017). Despite these limitations, the questions do currently appear to offer the most concise and cost-effective approach for integrating disability data into existing data collection activities, and are being adopted by an increasing range of countries globally.

2.2 Study rationale

This study was designed to support Pakistan's standardisation of education system data on children with disabilities. The country's Data Standardisation Framework (DSF) for education data production and reporting was approved by the Inter-Provincial Education Ministers Conference forum in May 2023, following its development by the Ministry of Federal Education and Professional Training and the provinces (Pakistan Institute of Education (PIE), 2023). The DSF supports standardisation of Annual School Census (ASC) data across the country, mandating consistent collection and reporting of included variables. Prior to this, collection and use of disability data in the education system was at the discretion of individual provinces, leading to substantial variations in the extent and nature of data collected, and how this was analysed and used (DAI Global Ltd & Impetus Advisory Group, 2023) .

The 2023 DSF includes four of the six Washington Group Short Set (WG-SS) questions on disability as National Indicators, generating the number of school children experiencing functional difficulties in the domains of seeing, hearing, walking or climbing stairs, and remembering or concentrating. All four questions follow the same structure, and are each asked about an individual child, asking whether that child 'no difficulty', 'some difficulty', 'a lot of difficulty' and 'cannot do at all' for a particular activity. Under standard analysis guidelines, responses of 'a lot of difficulty' or 'cannot do at all' indicate that the child probably experiences a disability. The DSF additionally includes variables covering the presence of ramps in schools, materials to support learning of children with disabilities in school, and numbers of teachers trained in special education.

As the ASC data is one of the primary sources for reporting on SDG4 and national priority indicators (Pakistan Institute of Education (PIE), 2023), inclusion of these disability questions was a significant demonstration of commitment to disability-disaggregated data, and disability inclusion more broadly. Government piloted the collection of these WG-SS questions in the 2023/24 ASC across all four provinces. As the ASC collects school-level data, rather than individual-level data, schools were asked to provide the aggregate numbers of girls and boys in each class experiencing each level of difficulty in each of the four domains.

This study set out to explore and document the use of the WG-SS questions in Pakistan's 2023/24 ASC, and to examine the data generated through this process, in order to support Pakistan's government in ongoing efforts to strengthen the collection and use of this data. Additionally, the study contributes to the global evidence base around the use of the WG-SS questions in education systems.

This study was conducted as part of the Data and Research in Education – Research Consortium (DARE-RC) project. DARE-RC is funded with UK International Development from the UK government. Its implementation is led by Oxford Policy Management in partnership with Sightsavers and Aga Khan University – Institute for Educational Development (AKU-IED). Within DARE-RC's research agenda, this study is aligned to the cross-cutting theme of Effective Data Use, speaking particularly to the focus area of improving the data systems landscape in regard to marginalised children and communities. It also contributes to supporting data- and evidence-driven decision-making, through providing guidance on strengthening the available data.

2.3 Conceptual frameworks

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Our work uses the biopsychosocial model of disability to support our understanding of disability (see **Error! Not a valid bookmark self-reference.** below). This model understands disability as the interaction between a health condition or physical impairment and an unaccommodating environment, in turn limiting activities and restricting participation ("ICF : International classification of functioning, disability and health," 2001). This model underpins the tools developed by the Washington Group and UNICEF (Loeb et al., 2017; Madans et al., 2011; Washington Group on Disability Statistics, 2022, 2023), which focus on understanding functional limitations that may limit activities and restrict participation in the context of an unaccommodating environment (Washington Group on Disability Statistics, 2020). As the questions focus on functional limitations, rather than measuring disability, when we present quantitative data from the WG-SS questions we use the term "functional difficulty", rather than disability.

Figure 1: Diagram illustrating the biopsychosocial model of disability

I. International Classification of Functioning, Disability and Health.
Source: World Health Organization, 2001.
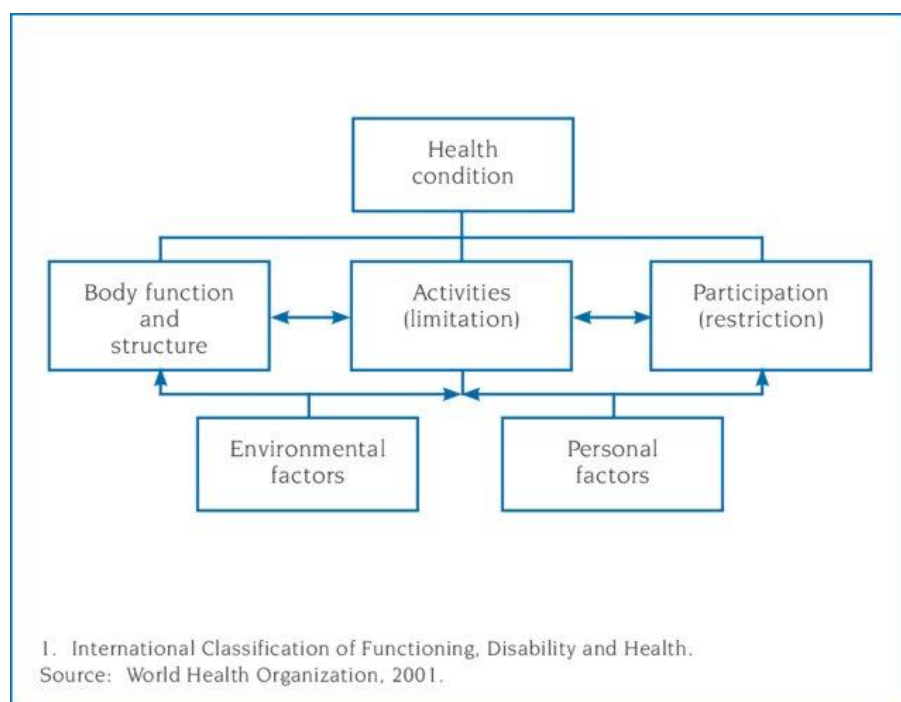
2.4 Research Objective and Questions

This study adopted a sequential, mixed methods design to explore the nature and quality of the disability data collected by Pakistan's 2023/24 ASC, and to understand how data collection processes, planning, and implementation shaped the data.

The study's research questions were:

I. How does ASC WG-SS data and data quality vary across schools and provinces, and by child sex? What drives these differences? How can data quality be enhanced?

II. How did stakeholders, including teachers, experience WG-SS training, data collection, data analysis and use? What were successes and challenges?

III. What is the relationship between school- and class-level ASC data on difficulty seeing and refractive error and visual impairment as assessed by an optometrist?

IV. At each system level, what opportunities exist for strengthening disability data collection, analysis and use? What education system infrastructure and capacity strengthening will improve integration of disability data?

3 Methodology

3.1 Study Design

The study utilised a sequential mixed-methods design comprising four main components:

1 A documentary review of materials relating to ASC 2023/24, including forms, guidelines, training materials, and reports.

2 Secondary analysis of WG-SS ASC data, exploring data completeness and consistency, and numbers of children reported with functional difficulty in each domain.

3 Qualitative data collection from stakeholders at federal and provincial level, and headteachers and teachers at schools, to understand experiences.

4 Vision screening of children in two schools in Punjab, to compare clinical data to teacher-generated WG-SS data on difficulty seeing.

3.2 Study Location

The study was conducted across all four provinces of Pakistan and the Islamabad Capital Territory (ICT). Qualitative data collection took place in Islamabad and the provincial capitals, with participating schools located in both urban and rural settings. Vision screening was conducted at one urban and one rural school in Lahore, Punjab.

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3.3 Sampling and Recruitment

Quantitative analysis used data collected from all schools participating in Pakistan's 2023-24 ASC in the four provinces and in ICT.

Federal and provincial-level participants in Key Informant Interviews (KIIs) were purposively selected, on the basis of thorough stakeholder mapping of organisations and individuals involved in DSF development, preparation of ASC forms, delivery of ASC trainings, implementation of data collection, and analysis and use of ASC data. A total of 11 KIIs were conducted at federal level, and a further 17 with provincial-level stakeholders (although only 15 of these could be audio-recorded).

Selection of schools for qualitative data collection and vision screening

As resources only permitted data collection at four schools per province, the study focussed on those with more extreme reported FD prevalence, to enable assessment of factors which might contribute to varying outcomes. In each province, four schools within a feasible distance of the provincial capital were purposively selected for qualitative work using the following selection criteria:

- Particularly high prevalence of FD in WG-SS ASC data, or zero prevalence;

- Variation in schooling levels;

- Variation in school size;

- Variation in rural/urban location; and

Gender balance.

Two of the schools in Punjab were selected for vision screening. The schools participated in the study are presented in Table 1: below.

Table 1: Schools selected for qualitative work

Province & District	School name	Gender	Setting	Level	Enrolment	WG-SS prevalence
Balochistan - Quetta	BLC1	Male	Urban	High	466	High
	BLC2	Male	Urban	Middle	301	Zero
	BLC3	Female	Rural	High	181	High
	BLC4	Female	Urban	High	1420	Zero
KPK Peshawar	KPK1	Female	Rural	Primary	94	High
	KPK2	Male	Urban	Middle	140	High
	KPK3	Female	Urban	Middle	107	Zero
	KPK4	Male	Rural	High	365	Zero
Punjab Lahore	PJB1 *	Female	Rural	High	893	High
	PJB2	Female	Rural	Primary	227	Zero
	PJB3	Male	Urban	High	840	Zero
	PJB4 *	Male	Urban	Primary	201	High
Sindh Karachi	SND1	Mixed	Rural	Primary	311	Zero
	SND2	Mixed	Urban	High	2193	High
	SND3	Mixed	Urban	Primary	155	High
	SND4	Mixed	Rural	Middle	300	Zero

* Schools where vision screening was conducted

Selection of participants within schools

Participants in **qualitative data collection** were identified based on their role as headteacher, or as a teacher substantively involved in generation or collection of ASC data at a sampled school. At each school, the headteacher and the teacher most involved in the ASC were invited to participate in a KII. Additionally, up to 8 teachers were invited to participate in a focus group discussion (FGD).

In schools selected for **vision screening**, all children present at the school on the day of screening were invited to participate.

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3.4 Tools

KIIs and FGDs used open-ended guides to explore participants' roles and experiences with all relevant aspects of the ASC WG-SS data collection process, from planning through to analysis.

Vision screening used a tumbling E chart at a 3m distance. Children who were not able to correctly identify 3 of 5 symbols, or who had any other eye condition, received same-day full eye examination and refraction at school by an optometrist. Pre- and post-correction visual acuity were recorded. Children were provided with glasses if they required correction of at least 0.75 dioptres and the glasses improved their visual acuity by at least two lines on a Snellen chart during refraction. If clinically indicated, children were referred to a hospital for further attention.

Federal data was collected from August to September 2024, while provincial and school-level data was collected during one-week periods in December 2024.

3.5 Training and data collection

Federal KIIs were conducted by study team members, from August to December 2024.

Qualitative provincial data collection was led two study team members supported by two trained local researchers in each province. Researchers participated in a two-day training, and data was collected during December 2024.

Vision screening data was led by a study team member and implemented by two qualified and experienced optometrists. Optometrists participated in safeguarding training and a half-day training on study tools and processes.

3.6 Data management

ASC data was obtained and managed by PIE according to their standard data management and security protocols. School level data used by the study included school location, level, staffing, enrolment, and WG question data disaggregated by class and sex (where applicable). Data shared with Sightsavers team members did not include individually identifiable information and was stored on secure servers for analysis.

KIIs and FGDs were audio-recorded with the permission of participants. Recordings and de-identified transcripts were stored on a secure server with limited access.

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During vision screening, all personal and clinical information was captured on a tablet by study team members, using the CommCare data collection platform. Identifying information was only used to ensure children received necessary glasses or referrals. A deidentified dataset was prepared for analysis.

3.7 Data analysis

Quantitative data analysis was performed using Excel and Stata (version 18). The analysis examined the prevalence of FD, defined by standard WG-SS cutoffs ("a lot of difficulty" and "cannot do at all"). Due to small numbers of children with FD, prevalence was expressed per 10,000 children.

The data was examined disaggregated by province, child gender (where available), class and the following variables:

- School gender, defined as boys schools; girls schools; mixed schools.

- School level, which was defined as primary; middle; high.

- School size, defined as <100 children = small; 100-399 = medium; 400+ = large.

- Geographical location, defined as urban; rural.

Variations and trends in FD prevalence were examined and tested for statistical significance using Pearson's Chi-Square test. It was not possible to determine the reasons for missing data in the ASC, so based on guidance from provincial EMIS departments, missing values were assumed to be counts of zero and recoded accordingly.

ASC data was also aggregated to school level and the distributions of school-level FD prevalence in each province were examined, using both descriptive statistics and violin plots. School-level prevalences in each province were also examined by child and school gender, school level, size and location. Data from qualitative and quantitative components was triangulated to deepen analysis.

Vision screening data was examined using descriptive statistics. Pre-correction visual impairment (VI) was determined as present if a child had a pre-correction visual acuity <=6/12. For each school that took part in the vision screening, the prevalence of failing the screening, pre-correction VI and being recommended glasses were then compared to the prevalence of seeing FD from the ASC. This comparison was also examined by class within each school.

Thematic analysis was used to examine the qualitative data. A codebook was collaboratively developed and refined for each respondent group, and reliability was ensured through dual coding on a subset of transcripts. The coded data was reviewed to identify overarching themes related to the design, training, and implementation of the WG-SS data collection.

3.8 Quality Assurance

For the quantitative work, quality assurance mechanisms included collaborative development of a clear analysis plan, independent replication of analysis by multiple team members, and review and discussion of results among the full team.

Quality assurance processes for the qualitative work included translation of study tools into Urdu, pre-testing of tools, use of trained local researchers, and daily debriefs during data collection. Quality of qualitative data analysis was maintained by review of the draft codebook by the broader study team, and dual coding of a selection of interview and FGD transcripts to ensure accuracy of coding and consistency between coders.

Quality assurance mechanisms for vision screening including use of trained and experienced optometrist for data collection, and capture of data directly into a digital data collection platform to minimise errors.

3.9 Ethical Standards and Safeguarding

The study received ethical clearance from the Allama Iqbal Open University (AIOU) and secured all necessary government authorisations. All activities adhered to Sightsavers' and DARE-RC safeguarding policies. Participation was voluntary, and written informed consent was obtained from all adult participants. For vision screenings, headteachers provided consent, parents were given the option to opt-out, and children provided verbal assent. All data was anonymized and stored securely.

3.10 Limitations and Biases

The study's limitations include the small sample of schools in the qualitative work and in vision screening, meaning findings may not be generalisable. The delay between ASC data collection and data collection meant that participants' recollections of the 2023/24 ASC were not always clear and limits the value of comparison with the vision screening data.

There was a risk of bias as the organisations involved in the research were also involved in implementing the WG-SS questions in the ASC. This was managed by ensuring those leading data collection and analysis had not been involved in implementation. Researchers were trained on bias, and participants were advised of the confidentiality of their responses and encouraged to speak openly.

4 Findings

4.1 Documentary Review

Data Standardisation Framework

The 2023 Data Standardisation Framework (DSF) includes four of the six Washington Group Short Set (WG-SS) questions on functional difficulties as National Indicators, covering difficulty with seeing, hearing, walking or climbing stairs, and remembering or concentrating.

The DSF toolkit includes wording of the four questions to be used, and provides guidance on calculation for the indicator (see **Error! Reference source not found.Error! Reference source not found.**). DSF indicates that the proportion of children experiencing each level of difficulty should be calculated separately, and presented for each level of education and by sex. However, DSF also guides that scoring should be as per the WG-SS, which instead recommends calculation of the total number of those with functional difficulty in each domain, defined as 'A lot of difficulty' or 'Cannot do at all'. This creates some ambiguity regarding appropriate analysis.

Figure 2: DSF description of the WG-SS question on difficulty seeing

> 1. **Number of students with difficulty**
>   a. **Seeing, even when wearing glasses**
>
> **Definition:**
>
> Same as above
>
> **Calculation:**
>
> *Numerator:* Number of children with the extent of difficulty seeing (as per the scoring matrix), even if wearing glasses at the [required education level]
>
> *Denominator:* Total enrollment at the same education level.
>
> Disaggregated by education levels (primary, lower secondary, upper secondary) and gender
>
> Scoring matrix to be used as per Washington Group's short set of questionnaire[23]
>
> No- No difficulty
>
> Yes- Some difficulty
>
> Yes- A lot of difficulty
>
> Yes - Cannot do so at all

Learnings from Sightsavers technical support

Sightsavers produced technical guidance materials to support implementation of the WG-SS questions in the ASC, and conducted orientation workshops and master training in each province. This process highlighted the scale of the integration of the questions, covering over 21 million children attending over 150,000 public schools nationally, to our knowledge the largest-scale use of these questions in an education system. The complexity of introducing a new tool and collecting broadly comparable data across four provinces was particularly significant as provinces implemented the ASC independently.

Across all four provinces, stakeholder response to orientation and training workshops was broadly positive, with recognition of the importance of including disability data in the ASC. However, participants raised concerns that timing of inclusion of the WG-SS questions was not well-aligned with overall ASC preparation timelines, preventing a fully integrated approach to key processes including training. This was particularly problematic in Balochistan, where ASC data collection had already begun at the time of the WG-SS engagements.

Other concerns raised included exclusion of special schools, private schools and non-formal learning centres, which were not participating in the ASC, potential duplication of information already included in some provincial EMIS, omission of some types of disability (particularly relating to communication and upper limb difficulties), unsuitability of the tool for children

under the age of 5, and the potential burden the questions would place on teachers. Stakeholders would also have preferred inclusion of a question on the total number of children with difficulties across all domains.

Challenges identified in draft provincial ASC forms included inappropriate use of the word 'disability', inclusion of screening questions about whether any child in the school experienced functional difficulty or disability, changes to question wording, and a failure to disaggregate by sex. Feedback was provided to provinces, and many challenges were addressed.

Review of final ASC forms

Obtaining copies of the final ASC forms was challenging, particularly where data was collected digitally. Forms shared were not always consistent with data content and structure, and digital system calculations, validations and skips were not well-documented.

Review of forms revealed some persistent variations across provinces. Key concerns noted during form review included:

- Use of the word "disability" in headings or descriptions in Sindh and KPK;

- No disaggregation by sex in Sindh or Balochistan, although all provinces included disaggregated by grade;

- Use of screening questions; and

- Omission of "a lot of difficulty" response option, and "cannot do at all" in the seeing domain, in KPK.

Review of ASC reports

Presentation of WG-SS data was variable across provinces, and generally minimal, and Sindh did not report on the data at all. Concerns noted in the presentation of the WG-SS data include:

- Inclusion of children with "some difficulty" when reporting on number of children with disabilities;

- Presentation of total number of children with disabilities, although this cannot be calculated from the data collected; and

- Lack of disaggregation by sex, when this data was collected.

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4.2 Secondary analysis of ASC data

The prevalence of functional difficulty based on the ASC data is low, and is likely to underestimate actual prevalence of disability in mainstream public schools. Reported prevalence in KPK was particularly low, potentially relating to challenges with the data collection form, and generally lower levels of teacher involvement in data collection (see section 4.3). Reported prevalence was highest in Balochistan. In all provinces other than KPK, difficulty remembering had the highest prevalence. Although many of the variations in prevalence that were identified in the analysis are statistically significant, this is in part due to the large sample size, with most variations quite small in real terms.

Prevalence of Functional Difficulty

A total of 24,271,116 children were enrolled in schools that contributed data to the ASC across the four provinces and ICT. The total enrolment by province is described in **Error! R eference source not found.**. Punjab contributed the largest number of children (11,968,153), with ICT contributing the fewest (168,036). Nationally, prevalence of seeing FD was 3 children per 10,000, prevalence of hearing FD and walking FD were 2 per 10,000, and prevalence of remembering FD was 21 per 10,000 (see Table 2 below). Differences in FD prevalence in each domain were statistically significant across the four provinces and ICT. Prevalence of seeing and remembering FD was highest in ICT and lowest in Sindh. Prevalence of hearing and walking FD was highest in Balochistan and lowest in Sindh. Data on FD in seeing was not collected in KPK.

Table 2: Total number of children with functional difficulties (FD) by province

Province		Total Enrolment	Functional Difficulty (A lot of difficulty + Cannot do at all)				Total number of FDs*
			Seeing	Hearing	Walking	Remembering	
Punjab	N	11,968,153	4,909	3,490	3,298	45,863	57,560
	P per 10,000		4	3	3	38	48
Sindh	N	5,219,784	976	228	474	2,393	4,071
	P per 10,000		2	0	1	5	8
KPK	N	5,841,223	-	736	452	271	1459
	P per 10,000		-	1	1	0	2
Balochistan	N	1,073,920	997	469	730	1,630	3,826

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	P per 10,000		9	4	7	15	36
ICT	N	168,036	440	22	41	1,056	1,559
	P per 10,000		26	1	2	63	93
Pakistan	**N**	**24,271,116**	**7,322**	**4,945**	**4,995**	**51,213**	**68,475**
	P per 10,000		**3**	**2**	**2**	**21**	**28**
P diff			**p<0.001**	**p<0.001**	**p<0.001**	**p<0.001**	**p<0.001**

P diff = chi-squared test for difference in FD prevalence between provinces

*This is the total number of FDs, not the total number of children as a child can have more than one FD.

Variations in Functional Difficulty prevalence by gender

A total of 12,903,910 boys and 11,367,206 girls were included in the ASC. WG-SS data was only disaggregated by gender for Punjab, KPK and ICT. In general, higher levels of FD were reported for boys than girls across most domains, with the exception of seeing and hearing in ICT. While most of these differences were statistically significant, this was largely due to large sample size and the differences were not large in magnitude.

In Punjab, the prevalence of seeing FD was similar in boys and girls (4.14 and 4.06 per 10,000 children respectively). However, in ICT, the prevalence was 22.00 per 10,000 in boys and 29.18 per 10,000 in girls, a difference that was statistically significant. Seeing data was not available for KPK, and the data was not disaggregated by gender in the other provinces.

The prevalence of hearing FD was 3.04 per 10,000 in boys and 2.79 per 10,000 in girls in Punjab, a very small but statistically significant difference. Similarly, a small but significant difference in the prevalence of hearing FD was observed between boys and girls in KPK (1.35 vs 1.14 per 10,000 respectively). There was no difference in hearing FD prevalence between the genders in ICT.

The prevalence of walking FD was 3.16 per 10,000 in boys and 2.37 per 10,000 in girls in Punjab, a difference that was statistically significant. Similarly, a small but significant difference in the prevalence of walking FD was observed between boys and girls in KPK (0.99 vs 0.51 per 10,000 respectively). There was also a difference in walking FD between the genders in ICT, though this did not reach statistical significance (3.28 vs 1.84 per 10,000 respectively).

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The prevalence of remembering FD was significantly different between boys and girls in all three provinces that disaggregated by gender. In Punjab it was 39.13 per 10,000 boys, and 37.54 per 10,000 girls. In KPK it was 0.52 per 10,000 boys and 0.40 per 10,000 girls. In ICT it was 70.00 per 10,000 boys and 57.75 per 10,000 girls.

Other variations in Functional Difficulty prevalence

Across all domains, statistically significant variations in FD prevalence were identified on the basis of school gender (boys schools, girls schools, mixed schools), school level (primary, middle, high), school size (small, medium, large) and school location (urban, rural). In all provinces, differences were small in magnitude, with no clear patterns evident.

Variation of Functional Difficulty prevalence between schools

For the analysis in this section, reported FD prevalence was calculated for each individual school, and the distribution of these prevalences were examined. This provides additional insight into variations in data coming from different schools, and into school-level patterns of reporting.

A total of 139,709 schools contributed data to the ASC across the four provinces and ICT. The distribution of school-level prevalence figures was heavily skewed towards 0, with a median FD prevalence of 0, in all domains, and in all provinces. This distribution can be visualised using a violin plot, in which a diamond represents the median value and dots represent each individual school and show the spread of the data. Figure 3 illustrates the distribution of school-level prevalence of hearing FD. Plots for other domains are broadly similar, although with some variation in the exact peaks.

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Figure 3: Violin plot showing variation of hearing FD prevalence between schools by province
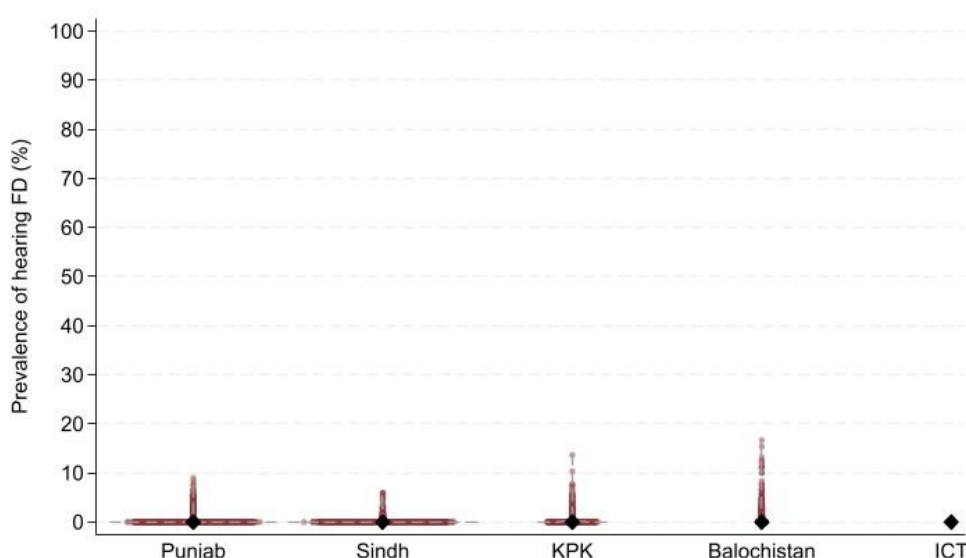
Although school-level prevalence was consistently skewed towards zero, within each province a small proportion of schools reported higher prevalence. A small number of schools reported prevalence of seeing FD of over 50% in Sindh, and prevalence of over 50% in remembering FD in Punjab, KPK and Sindh, suggesting some data quality challenges.

4.3 Federal and provincial stakeholder interviews

Introduction of the WG-SS questions in the 2023/24 ASC

The development and approval of the DSF paved the way for inclusion of the WG-SS questions in the 2023/24 ASC. It was informed by a national mapping exercise of ASC indicators, which had highlighted the need for a consistent approach to disability data, having found that *"data was not comparable and then certain areas and provinces had not even started data collection." (KII, Federal).* While inclusion of the questions was initially driven by stakeholders at the federal level, PIE worked closely with each province to achieve alignment on the indicators. While time-consuming, this process was facilitated by a shared commitment to strengthening recording and reporting on the presence of children with disabilities in schools. A federal respondent involved in the process explained *"Here I think we also need to appreciate provinces, as they cooperated and accepted everything with*

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open heart." (KII, Federal). Finalisation of the DSF was recognised as a significant achievement, enabling collection and reporting of consistent data across all four provinces

At provincial level, many stakeholders had become aware of the inclusion of the WG-SS questions in the 2023/24 ASC through their involvement in the DSF process. Federal stakeholders identified a need to build awareness and consensus on appropriate integration of the questions in September 2023, and tasked Sightsavers to conduct high-level stakeholder engagement and master training in each province. These took place from October 2023. While provincial stakeholders appreciated this additional support, the timing was operationally challenging as provinces had already largely finalised their data collection plans, and even completed training. In Balochistan, the main ASC data collection had already started, meaning that a second round of data collection was required for WG-SS questions. This timing contributed to challenges in cascading training, and in data collection (as discussed in subsequent sections).

Integration of WG-SS questions in the ASC forms

Each province was responsible for integrating the WG-SS questions into their ASC forms. Approaches were shaped by each province's EMIS and mode of ASC data collection (paper-based, electronic or hybrid), and guided by the DSF and technical support. This process was considerably more complex and time-consuming than anticipated by federal stakeholders.

Balochistan used a stand-alone paper-based form for collecting the WG-SS data, as the main ASC form had already been distributed. Data was captured into a web-based system following collection. The form was felt to have worked well, and the content was integrated unchanged into the 2024/25 ASC form. Stakeholders expressed some concern that WG-SS questions replaced a previous question which recorded the names of children with disabilities, although most felt that this was outweighed by the benefits of additional information on disability type and severity, along with inter-provincial consistency of indicators.

Little detail was available on the KPK form development process, but the questions were integrated into the main, 15-page form, which headteachers submitted electronically. As previously mentioned, challenges with form design meant the "lot of difficulty" response option was omitted, and data on children with difficulty seeing was not captured.

In Punjab, the WG-SS questions were integrated into digital individual learner records, which were aggregated to generate ASC data.

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In Sindh, the WG-SS questions were integrated into the main ASC forms. Most schools completed hard copies, although some secondary schools were able to use a digital data collection system. The form did not disaggregate WG-SS data by sex as required by the DSF, and respondents explained this was due to challenges with managing the data structure in their EMIS.

Across all provinces, stakeholders expressed broad satisfaction with the questions and response options. There was some support for integration of the remaining two WG-SS questions (covering communication and self-care) in the DSF – with some provinces already having decided to collect this information. There was broad support across provinces for electronic collection of all ASC data, including the WG-SS.

Training and documentation for WG-SS data collection

Provincial sensitisation workshops and master training were described as important and beneficial, particularly for clarifying specific indicators. A respondent in Punjab explained *"This [training] was very important because these four indicators were also present in our previous census, but there wasn't much focus on this because no one had clarity regarding this." (KII, Punjab).* Some trainees, especially in Sindh, would have appreciated additional detail and examples in the training, and highlighted the question about difficulty seeing as particularly confusing. Aside from one person in Punjab, respondents had not received documentation or materials following training, and a training manual including technical guidance on these questions had also not been seen.

While provinces were responsible for cascading WG-SS training, in line with their own structures and processes, there was limited evidence that this occurred for the 2023/24 ASC, or that any guidance or resource materials were distributes to schools and teachers. However, in Punjab, KPK and Sindh there was some discussion of videos that had been shared. KPK experienced particular challenges in cascading training due to a reduction in external financial support. In Punjab schools were reported to have struggled to use videos and digital training materials due to limitations in internet and IT infrastructure, with schools in remote areas worst affected.

Across provinces, there was agreement on the importance of ensuring training and guidance on the questions reached teachers. This training should cover the WG-SS questions themselves, but also how to identify whether children were experiencing difficulties, and how to support their learning. One respondent emphasised that teachers should be trained to record concerns whenever they were observed, while another highlighted training on making

referrals for clinical assessment. A federal respondent explained that the training "*shouldn't be positioned as data collection training. It should be more associated with the thing that once you recognise these are the needs of your students, then how you can help them with that to ensure learning and to ensure that social emotional needs of your students are being met and how you can make those adjustments in the classroom." (KII, Federal).* Ensuring that teachers understood the importance of the data, and how it would be used, was also felt to be important in motivating generation of accurate data.

Data collection, management and validation

Across provinces, teachers were thought to have played a role in generating the WG-SS data collected, and were seen as well-positioned to play this role. The task was not viewed as unduly burdensome, with some suggesting it could support good teaching practice. One respondent thought that teachers might identify challenges parents might miss:

> *"These questions are very useful for identifying and guiding children with disabilities. Some issues, like hearing impairments, may not even be known to parents, only teachers can identify them." (KII, Sindh)*

However, there was some concern around whether teachers were being asked to identify disabilities, noting that this would require clinical assessment or engagement, and about use of the WG-SS inappropriately replacing clinical referrals and assessments. There were also suggestions that the questions could be more usefully included in individual learner records for use by teachers and schools, rather than in the ASC.

Punjab was the only province in which any validation of the WG-SS data was described, with one respondent having engaged with schools reporting very large numbers of children with difficulties in remembering and concentrating. However, another respondent in Punjab felt that reliability of the data had not been adequately checked.

Data analysis, reporting and use

No respondents at provincial level described receiving any training or guidance on appropriate analysis and interpretation of the WG-SS data – although only one raised this as a gap. A federal respondent also highlighted the need for more technical engagement in data interpretation and analysis. A respondent in Sindh described the data as being very challenging to work with, due to the large number of variables generated. Across provinces, there was agreement that the data had not been used and that feedback had not reached schools and teachers. Particularly in Sindh and Punjab, this was recognised as a gap.

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Data quality and value

Generally, data quality was not yet felt to be accurate, with shortcomings attributed primarily to limited training. In Punjab, it was felt that some schools had reported any child with poor academic outcomes as having difficulties. There was also some concern that the questions were overly subjective, and too dependent on individual teacher's observation.

Respondents felt that addressing gaps in data reporting and feedback would improve data quality. Data improvement was described as iterative and cyclical, with reporting playing an important role: *"And obviously it's a time consuming process, data will get mature after completion of 3 to 4 cycles. First time we got the data now we will report it and encounter questions on that then we will give reply and this process goes on… So reporting is important to make the data mature" (KII, Federal)*

While respondents across provinces agreed on the value of the questions, they highlighted that the data would only be beneficial if actually used: *"Data collection is very important, and the data collection process should be improved. Data collection should not be for the sake of data collection. It should be for the sake of decision-making about weaknesses and challenges." (KII, KPK)*

Three main benefits from the use of the WG-SS questions in the ASC were described. Firstly, it sent a message about children with disabilities belonging in mainstream education, and being part of the school system. Secondly, the questions supported schools and teachers awareness of children's needs. And finally, the questions could support more effective direction of necessary resources to children with disabilities. Some respondents also suggested that the questions could help teachers communicate with parents when they had concerns about a child, and others suggested the data could usefully be shared with other government departments to ensure children received social or medical support.

Although many respondents spoke positively about inclusive education, a number used the term "minor disability" in their responses, and expressed doubts about whether children with more severe disabilities should attend mainstream schools.

4.4 School-based interviews and focus group discussions

Awareness and training

Across provinces, awareness of the WG-SS questions was variable, but a lack of training and guidance had consistently resulted in adoption of differing approaches to data generation. Headteachers and teachers had no clear information about why the questions had been introduced, and while many hoped this would guide increased support for children with disabilities, there was also some scepticism about whether this would materialise.

In Balochistan, many respondents were only aware of the questions in relation to the 2024/25 ASC, which had started during the data collection period. At two of the schools, questions had not been received as part of the 2023/24 data collection. At the other two schools, the questions had been received, but no training or guidance was provided. Respondents found the questions relatively straightforward, but were concerned about the lack of individual detail, which they felt would be important in responding to children's needs.

In KPK, headteachers at all four schools visited were aware of the questions, but teachers were only aware of them at two schools. While headteachers of the two rural schools had participated in training, they reported that many of their peers had not. One headteacher had cascaded this training to teachers, but the other had not. No schools had received guidance documentation. In one urban school, teachers and headteachers explained they thought only children with serious disabilities should be reported. Therefore, children with functional difficulties in mobility, seeing and hearing had not been reported in the 2023/24 ASC as teachers didn't consider them disabled.

In Punjab, teachers at all four schools visited were familiar with the questions, and had encountered them as part of individual health profiles they completed for each child in their class. Respondents had learned about the questions through colleagues, or through seeing them in the electronic School Information System. Teachers at one school had received guidance documentation independently sourced and distributed by the headteacher. Teachers felt that while the health profiles were detailed and time-consuming to complete, they did not capture enough detail on children's disabilities or functional difficulties, and advocated for more information to be included.

In Sindh, headteachers at all four schools were aware of the questions, and teachers at three of the schools were aware. Most had learned of the questions on receiving the 2023/24

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ASC forms, and none had received training or guidance. Respondents in Sindh expressed particular frustration about the lack of training or guidance. One teacher who had asked officials for clarification on the questions was told to complete them as they saw fit. A headteacher explained that in the absence of any guidance, teachers simply treated the questions as a formality.

Process of data generation at school level

Schools adopted variable approaches to identifying and reporting children with functional difficulties, contributing to variations in whether children with difficulties were reported in the 2023/24 ASC.

In one school in Balochistan, each child was asked by a teacher whether they experienced difficulties. Teachers said they had identified and recorded about 20 children with difficulties in the ASC form, many of whom were also referred to health services. However, the school's records in the ASC database reflected no children with any level of difficulty. In another school, where ASC data included several children with difficulties, the headteacher led teachers in a process of careful observation in each child. Teachers reported becoming aware of children's difficulties through this process, and making adjustments to better meet their learning needs. While teachers described the process as beneficial, it left them wishing for more training and guidance in meeting the learning needs of children with difficulties. In one school where the questions were not received in 2023/24, the headteacher described the process taken in 2024/25, when they had asked each teacher whether there were any children with disabilities in their class. Only one teacher responded positively, and then was asked to complete the WG-SS for their class.

In the KPK schools visited, teacher involvement in data generation had been very limited, and in most schools either the headteacher or a single focal teacher had generated data for the entire school. In the school where teachers had been asked to provide data for their classes, they explained they hadn't understood the questions, so had all answered "NIL". In another school where the headteacher had generated the data, reporting no children with difficulties, they explained that although there was a child with behavioural and cognitive challenges she had not been reported.

In Punjab, all teachers had been involved in data generation. In one school reporting several children with difficulties, teachers had undertaken a process of detailed observation over a period of 3-4 days. At the other school reporting several children, teachers had followed a similar process, but had also contacted parents for their input. In one of the schools reporting

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no children with difficulties, by contrast, teachers explained that they had treated the questions as a formality, because they didn't understand their purpose.

In one Sindh school reporting no children with difficulties, the headteacher had generated information for the school as a whole. In the other school, teachers were consulted, but given little time to consider. Due to confusion about the questions and how data would be used, teachers decided not to report two children with disabilities who were attending the school. In the two schools reporting higher prevalence, teachers had generated data about their classes drawing on observation, and in some cases asking children directly about their difficulties. In one school, teachers provided information to the headteacher on every child they taught, and the headteacher then consolidated the multiple inputs for each child. The headteacher explained that each teacher had different perspectives, which made this process very challenging.

Data submission, feedback and value

In Balochistan, headteachers submitted data via completed paper ASC forms to the focal person. No schools had received any feedback from the data submitted. The study team identified some discrepancies in numbers that schools believed they had submitted, and those in the ASC database, which may indicate some challenges in the management or digitisation of the paper forms collected from schools.

Teachers in several schools saw potential value in the data collection process, primarily to support better resourcing of schools in meeting learning needs of children with disabilities. In one school teachers also felt that the data could also be useful in building awareness of disability and inclusion among parents and community members. Teachers felt that data collection should take place earlier in the year, partly because the winter break often interfered, but also so teachers would have more time to make adjustments to support children, after becoming aware of their needs.

Teachers in the two schools which had reported more children with difficulties were broadly supportive of inclusive education, but felt that better resourcing and additional training were essential. In another school, teachers felt far more cautious about inclusive education, arguing that inclusion of children with disabilities, and particularly more severe disabilities, could be disruptive and prevent other children from learning.

In KPK, headteachers were also responsible for data submission, and expressed some frustration about the system currently in place for data capture. The lack of feedback to schools on data submitted was also a point of frustration , particularly among those who'd

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hoped the data would result in support to children. Teachers also felt that data collection should take place earlier in the school year, to enable referrals to be followed up, and to ensure support could be provided. In three of the schools, teachers were broadly supportive of inclusive education, requesting additional training. But in one school teachers spoke out quite strongly against the approach, raising concerns about teacher workload, and the disruption of learning for other children. In this school, teachers felt that children with disabilities should attend special schools, or be provided with specialist teachers.

In Punjab, headteachers or a dedicated teacher had submitted school data online. No schools had received any feedback on data submitted, and several respondents spoke about their disappointment or frustration that children with disabilities had not been offered any assistance or support. One headteacher explained the real challenge was not in the collection of data, but in the implementation of support in response to the data collected. In Punjab, teachers were broadly positive about inclusive education, but felt that additional training and resourcing would be essential for its success.

In Sindh, headteachers were also responsible for consolidation and submission of school data, and as in other provinces, no schools had received any feedback on the data submitted. Teachers described frustration with the lack of feedback, and particularly that the data submitted had not resulted in additional support reaching children – for example, one teacher who had believed that children struggling with vision would receive glasses. Several teachers, however, believed there was value in the collection of this data, and teachers from one school described how the process had helped them better understand and meet learning needs. One teacher also described the potential value of the data and process in raising parents' awareness when children had difficulties.

4.5 Vision screening

Results of the vision screening in two schools in Punjab are shown in Table 3. In both schools, just under 9% of children were found to have visual impairment.

Table 3. Results from the vision screening by school

	PJB4 N=141	PJB1 N=192
Failed eye screening	17 (12.1%)	20 (10.4%)
Pre-correction VI	12 (8.5%)	17 (8.9%)

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Table 4 compares the prevalence of visual impairment at the two schools with their 2023/24 ASC data on the prevalence of difficulty seeing among students. Given the small sample size and the lag between the ASC data collection and vision screening, this comparison should be treated with caution, and due to the small number of schools included results cannot be considered generalisable. However, it is clear that in one school (PJB4), the proportion of children with difficulty seeing in the 2023/24 ASC is similar to the proportion who failed the initial eye screening, but in the other school, these two figures are very different.

Table 4. Comparison of vision screening to ASC by school

		PJB4	PJB1
Vision screening	Failed eye screening	12.1%	10.4%
	Pre-correction VI	8.5%	8.9%
	Glasses	8.5%	8.9%
ASC	Seeing FD	11.4%	0.1%

5.   Discussion

The study's findings indicate that including the Washington Group Short Set (WG-SS) questions in the 2023/2024 Annual School Census (ASC) was a significant achievement, resulting from considerable effort by stakeholders at all levels. Its value for institutionalising inclusive education in Pakistan was widely acknowledged. The scale of this initiative is notable, likely representing the largest use of WG-SS questions outside a population census.

However, the integration of these questions was undertaken under significant time pressure and with limited technical support. This led to limitations in the data collection forms and a lack of comprehensive training materials for schools and teachers. Consequently, schools often developed their own methods for answering the questions, leading to considerable variability in practice. Many schools reported no children with functional difficulties (FD), possibly due to a lack of clarity on the data's purpose, which led to disengagement.

This variability is evident in the school-level data, where a majority of schools reported no children with disabilities, while the minority that did report showed a wide range of prevalence rates, particularly for the domains of seeing and remembering. The vision screening data is also consistent with variable reporting, as the two schools reported

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substantially different prevalence of difficulty seeing, despite similar prevalence of clinically assessed visual impairment.

Limited analysis and reporting of the data at provincial level reduced opportunities for iterative improvement and caused frustration among teachers who saw no feedback or action based on the data they submitted. The importance of data feedback loops to schools has been highlighted in other contexts (Gomez & Bah, 2020). Despite these challenges there was optimism that data quality would improve over time, and the introduction of the questions had raised awareness of disability and inclusive education at multiple levels of the education system.

Teachers consistently linked the need for training on the WG-SS questions to a broader need for guidance on disability inclusion. The commitment of most teachers to meeting their students' needs was encouraging and reflects findings from similar work in other countries (Brus, 2023; School-to-School International (STS), 2023; Sightsavers, 2023, 2024). The positive feedback from schools and teachers that fully engaged with the questions was also encouraging. In these contexts, teachers described how the process increased their awareness of students' difficulties and led to practical support measures, such as organising eye camps or changing seating arrangements.

5.1 Comparison of ASC data with other sources

Comparison of the ASC 2023/24 data to other sources of information on disability prevalence among Pakistan's schoolchildren reveals that ASC figures are notably lower (Table 1). Although none of the other sources covers exactly the same population as the ASC, the extent of the differences suggests significant under-recording of functional difficulty in the ASC data. This is consistent with the findings from the qualitative engagements with headteachers and teachers.

Table 5: Comparison of ASC data to disability data from other sources

Province	Data source: ASC and MICS (Multiple Indicator Cluster Survey)	Children with functional difficulty per 10,000			
		Vision	Hearing	Mobility	Cognition
Balochistan	ASC 2023/24	9	4	7	15
	MICS 2019/20	230	20	1,730	--
KPK	ASC 2023/24	--	1	1	0
	MICS 2018/19	30	30	320	--
Punjab	ASC 2023/24	4	3	3	38
	Singal et al, 2020	50	10	10	10
	MICS 2017/18	20	20	260	--
Sindh	ASC 2023/24	2	0	1	5
	Somani et al, 2020	105	66	158	350
	MICS 2018/19	40	10	660	--

5.2 Assessment of integration using the SABER EMIS framework

Using the SABER EMIS framework to assess the integration of the WG-SS questions is helpful in identifying areas for future attention.

Enabling environment: Inclusion of WG-SS in the DSF is a crucial step towards institutionalisation of disability data. Successful implementation of data collection across all four provinces highlights developing processes, integrated into existing organisational structures. Challenges in implementation highlight need for further development of human and infrastructural capacity. Budget allocations were noted as a challenge, and a data-driven culture in relation to these indicators is still to emerge.

System soundness: Data architecture was generally sound, although minor gaps and errors in specific provinces requires attention. Data coverage for public mainstream schools was comprehensive, although the number of '0' responses suggests that not all schools were fully engaging with the content of the questions. Lack of coverage for special schools and private schools requires consideration. Lack of integration of analysis in provincial systems is a challenge.

Quality data: Several challenges were identified in relation to methodological soundness, and accuracy and reliability, deriving from lack of school level guidance on the data collection. Inconsistent involvement and engagement of teachers is a particular concern. Integrity in data generation or use will need to be monitored as understanding and use of data develops. Periodicity and timeliness of data was a concern, but should reduce.

Utilisation for decision making: This requires development and can be addressed in parallel with data quality improvements. Openness, operational use and accessibility of WG-SS is also limited. Addressing challenges through guidance and capacity development for teachers, headteachers, and district staff has potential to strengthen both data quality and use concurrently. Effectiveness in dissemination varies by province, but requires attention.

5.3 Implications for policy, practice, and future research

The Data Standardisation Framework (DSF) is an important step towards standardisation of ASC disability data, with the potential to benefit support for, and implementation of, inclusive education. However, due to capacity constraints and concerns about data quality, disability data from the 2023/24 ASC has not fed meaningfully into planning, resource allocation, or monitoring. Strengthening data quality and use will be essential to ensuring it can inform national and provincial level policy decisions through the following mechanisms:

- **Provincial Education Policies:** Through the National Education Policy Development Framework (NEPDF), data can inform evidence-based and inclusive provincial education policies, as well as teacher professional development guidelines and strategies.

- **Provincial Education Sector Plans:** Data can facilitate more accurate allocations to meet learning needs of children with disabilities in the next 5-yearly provincial Education Sector Plans (ESPs).

- **Annual Education Budgeting and PSDP:** Accurate ASC data will facilitate provincial governments to make appropriate disability-inclusive budgetary allocations to school management committees (SMCs) and other educational stakeholders.

- **Sustainable Development Goals (SDGs):** This data is critical for disability-disaggregated reporting on Pakistan's progress towards SDG 4 (inclusive and equitable quality education).

Areas in which future research could prove valuable include:

- School-level processes for generation of accurate and reliable WG-SS data.

- Approaches to training on data collection.

- Optimal structure, content and use of individual learner-level EMIS records including disability data.

- Strategies to enhance data analysis, interpretation and use, at all system levels, including within districts, clusters and schools.

- Mechanisms to support linkages between education and health departments in relation to disability data.

- Approaches to using disability data from the ASC to guide delivery of inclusive education training and resourcing.

- Relationships between disability data collection and disability stigma and discrimination.

5.4 Policy and practice recommendations

Strengthening the collection of WG-SS data in the ASC will require effective collaboration between PIE, the provincial education departments, and district level education officers. The following recommendations outline priority areas for targeted attention.

I. Strengthen mechanisms for collection and analysis of disability data in the ASC:

A. At federal and provincial level, led by PIE and in close collaboration with provinces and technical experts, strengthen guidance on WG-SS data collection, analysis and reporting, including by:

   i. Providing further support to provinces in iterative refinement of their implementation of the WG-SS questions, ensuring that ASC forms, question wording and response options, and guidance materials are fully consistent with the DSF.

   ii. Developing guidance on quality assurance processes, at both federal and provincial levels.

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iii. Over time, ensuring that the two remaining WG-SS questions are integrated into the ASC

iv. Developing the Technical Working Groups on Inclusive Education, involving technical experts and OPDs, to guide disability data collection and reporting process for ASC at provincial EMIS and/or PIE.

B. At district and school level, empower teachers to play a well-defined role in the collection of WG-SS data, through designing processes which include their unique knowledge about functional difficulties of the children they teach. This could include:

i. Ensuring clear guidance on completion of WG-SS questions reaches relevant individuals at district and school level, including teachers. Teachers in many provinces expressed preferences for videos or app-based content.

ii. Developing and delivering quality training and guidance for teachers, which covers the identification of functional difficulties

II. Support better utilisation of ASC data in the Education Sector:

A. Build stakeholders' capacity to interpret and use WG-SS data, led by PIE and in close collaboration with provinces and technical experts, including by:

i. Ensuring that individuals involved in data analysis, interpretation and use receive relevant training and technical guidance on the WG-SS.

ii. Engaging with Organisations of People with Disabilities (OPDS) to raise awareness of Inclusive Education and ensure they have appropriate access to disability data to engage in policy making processes.

B. Develop mechanisms and processes to ensure data can be used to inform policy development, allocation of resources and service delivery to meet needs of children with disabilities, including by:

i. Integrating disability data from ASC into Provincial Education Sector Plans and Public Sector Development Programme (PSDP) to ensure disability inclusion is embedded across planning, budgeting, and monitoring systems.

ii. Improving inter-ministerial coordination and capacity-building to enhance education sector responsiveness to the rights of learners with disabilities.

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III. **Ensure sustainability for disability data within the Annual School Census**

A. Sensitising stakeholders at all levels on disability inclusion and inclusive education, including through:

 i. Providing pre-service and in-service training to teachers on inclusive education, as well as guidance on how to meet children's diverse learning needs. Information on clinical assessments and referral processes would also be valuable.

 ii. Share examples, including from this study, of how teachers and schools have used WG- SS data to support learners.

 iii. Engaging with and collaborating with OPDs, learners with disabilities and their families to combat stigma and discrimination.

B. Strengthening provincial EMIS, to assure quality and value of all data collected, including the WG-SS, by:

 i. Continuing to promote standardisation and institutionalisation of disability-disaggregated data and disability data collection within the EMIS.

 ii. Continuing to invest in electronic data collection systems, with school-level tablet-based data entry and access, and establishment of individual learner level records.

 iii. Ensuring systems enable teachers and school-level stakeholders to access and use data to support their own delivery of equitable and quality education, which in turn will strengthen the commitment of teachers and schools to generate and capture of high-quality data.

C. Developing and sustaining mechanisms within each province to ensure that schools, teachers, and district officials benefit from collection of the WG-SS data, for example by:

 i. Providing guidance on data use and interpretation, as well as feedback to schools and teachers, so they can use disability data to inform their responses to children's needs.

D. Ensuring robust quality assurance mechanisms and monitoring systems are in place at federal and provincial levels to continually refine data collection and monitoring processes including the WG-SS questions in ASC.

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