

# Assessment on physical activity involvement of university students with special needs: a case study in some selected higher institutions of Ethiopian

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## ABSTRACT

*Background: Physical activity is very important for every person regardless of his/her age, gender, race, economic status, as well as physical ability, or disability. People, particularly students with special needs are usually perceived by societies as disadvantaged groups (Block, 1992). Hence, they are in a position of missing some economic, political, and social benefits including the right to access equitable and quality of PA. Objectives: the purpose of this study was to assess students with visually impaired and physical disabilities' engagement in physical activity. Methods: in this study qualitative method was employed. A case study research design was employed in this research. Study area: The study was conducted on 3 selected universities, Ethiopia. The selected universities are Debre Berhan, Addis Ababa and kotbea metropolitan universities. Sample: In this research sample of students with special need from all universities main and sub campus 'was selected by available sampling technique and also responsible head of institutions was selected by purposive sampling technique. The study utilized three data gathering techniques observation, interview and focus group discussion. Qualitative thematic case analysis was employed to analyze the data. Outcome: the finding of the study reveals Ramps, Stairs, Doors, Signage and Flooring of buildings are so poor to allow PA for SWSN. University students with special need have less time engagement in PA (their involvement in PA is so minimal) and University students with special need have interest to engage in PA but environmental and social barriers inhabit them form engagement of PA. Finally, recommendation was forwarded for three universities stakeholders based on the major finding of the research.*

**Keywords:** *Involvement, physical activity, Physical disability, Universities, Visual impairment*

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### **Introduction**

#### 1.1 Background of the Study

The 1993 United Nations' Standard Rules on the Equalization of Opportunities for Persons with Disabilities emphasize the need for member states to implement measures ensuring equal opportunities for recreation and sports for individuals with disabilities. The Draft Comprehensive and Integral International Convention on the Protection and Promotion of the Rights and Dignity of Persons with Disabilities, established by the UN Assembly resolution 56/108 in 2001, includes an article addressing the participation of people with disabilities in cultural life, recreation, leisure, and sports.

Article 31 of the UN Convention on the Rights of the Child, signed in 1989 and ratified in 1992, recognizes the right of children, including those with disabilities, to rest, leisure, play, recreational activities, and participation in cultural life and the arts.

Physical activity (PA) holds significant importance for individuals of all ages, genders, races, and physical abilities or disabilities. Unfortunately, people, especially those with disabilities, are often perceived as disadvantaged groups, limiting their access to economic, political, and social benefits, including the right to equitable and quality PA. This disadvantage extends to school environments, impacting the social, psychological, and academic spheres of students with special needs (SWSN).

#### 1.2 Challenges Faced by Students with Special Needs

SWSN encounter limited opportunities to enjoy school environments due to insufficient attention from educational providers in developing countries. This lack of prioritization reflects in areas such as curriculums, teaching materials, infrastructure, special programs like sports and games, environmental considerations, and the overall quality of education. The Education for All (EFA) Global Monitoring Report 2010 highlights the marginalized status of SWSN, resulting in their exclusion from quality physical education.

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According to the U.S. Census Bureau (2011), approximately 15 percent of the world's population, an estimated one billion people, live with a disability. The World Health Organization (WHO) emphasizes that individuals with physical disabilities are among the most marginalized groups globally, facing challenges in health, education, economic participation, and higher rates of poverty compared to those without disabilities.

### 1.3 The Right to Education for Students with Special Needs

Despite existing challenges, disabled individuals, particularly physically disabled children, have the right to primary, secondary, and higher level education. The Convention on the Rights of Persons with Disabilities, ratified in the UK in 2009, underscores that disability is not solely a social welfare matter but an integral aspect of human rights. Article 24 of the Convention focuses on education, emphasizing that persons with disabilities should not be excluded from the general education system or from free and compulsory primary and secondary education based on their disability.

In 2021, students with special needs had opportunities to join universities, with the majority placed in institutions such as Addis Ababa University (AAU), Debre Berhan University (DBU), and Kotbea Metropolitan University (KMU). This research aims to assess the level of physical activity among these students and explore the challenges and opportunities they face. The study also evaluates the institutional support provided by universities to enhance the involvement of students with special needs in physical activity.

## **2. Objectives of the Study**

### Specific Objectives

1. Assess the engagement of university students with special needs in daily physical activity through structured interviews and observations, employing thematic issue analysis.
2. Evaluate the extent of involvement of students with special needs in daily physical activity using structured observations and interviews, applying thematic issue analysis.

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3. Investigate the constraints faced by university students with special needs in performing daily physical activity through observations and focus group discussions, employing thematic issue analysis.
4. Assess the facilitation provided by university management to enhance the involvement of students with special needs in physical activity through focus group discussions and interviews, using thematic issue analysis.

## **3. Materials and Methods**

### **3.1 Research Approach and Design**

The research design serves as the framework for data collection and analysis, combining relevance with procedural efficiency. This study adopts a qualitative approach to explore the attitudes, constraints, infrastructure, and social restraints faced by students with special needs (SWSN) in participating in daily physical activities. The research design employs a case study approach, specifically a cross-case research design.

### **3.2 Description of the Study Area**

The study is conducted in selected higher institutions in Ethiopia, namely Debre Berhan University (DBU), Addis Ababa University (AAU), and Kotbea Metropolitan University (KMU). These institutions were chosen based on their experience hosting SWSN, proximity, and the significant number of SWSN in Ethiopia.

### **3.3 Population of the Study**

The target population includes all SWSN and the responsible heads of the selected universities. The total SWSN population across the three universities is 231.

**Helix****Table 3.1 Population of the Study**

No	Universities	SWSN	Direct Responsible Head of Institutions
		SWVI	SWPD
1	Debre Berhan University	10	6
2	Addis Ababa University	26	10
3	Kotbea Metropolitan University	21	7
	Total	231	122

**3.4 Sample and Sampling Technique**

A sample of 75 SWSN was selected using the available sampling technique, while the responsible heads of institutions were selected using purposive sampling. The sample size was determined with a confidence level of 95% and a confidence interval of 5%.

**Table 3.2 Sample**

No	Universities	SWSN	Sample	SWSN Stakeholders
		SWVI	SWPD	Total No. of SWSN
1	Debre Berhan University	10	6	7
2	Addis Ababa University	26	10	12
3	Kotbea Metropolitan University	21	7	8
4	Direct Responsible Head of Institutions	9	9	
	Total	122	55	9

**3.5 Data Collection Tool**

The study utilizes interviews, observations, and focus group discussions for data collection.

- **Interviews:** Structured interviews with 34 SWSNs were conducted using guidelines, lasting approximately 1:30 hours each. The interviews were recorded and analyzed thematically.

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- **Observation:** An observation checklist was used to observe the daily activities of 15 SWSNs over three days, focusing on aspects that may not be captured through interviews.
- **Focus Group Discussions (FGD):** FGDs were conducted with university stakeholders, special needs teachers, and SWSNs (5 participants). The discussions focused on university management facilitation and restraints faced by SWSNs in daily physical activities.

### 3.6 Data Analysis

Both qualitative and quantitative data analysis methods will be employed. Qualitative data from interviews, observations, and FGDs will be analyzed thematically, categorizing data into different thematic issues.

### 3.7 Delimitation of the Study

The study is delimited theoretically to university management facilitation, infrastructural facilities, restraints, attitudes of university's SWSN, and their involvement in daily physical activity. Geographically, the study is delimited to three selected universities (DBU, KMU, and DBU).

### 3.8 Ethical Consideration

Ethical clearance was obtained, and participants were informed about the purpose, method, and potential benefits of the study. Oral informed consent was obtained from participants, respecting confidentiality and cultural norms. The study adheres to ethical standards in research.

## **4. Data Presentation and Discussion**

### 4.1 Data Analysis

This section presents and discusses data gathered through observation, focus group discussions (FGD), and interviews. The raw data have been tabulated and analyzed thematically in different areas.

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### 4.1.1 Observation Analysis

An intensive 12-day observation was conducted across three campuses, focusing on roads, buildings, and sports fields. The analysis is presented in four thematic areas.

#### **A. Roads**

Observations were made on the pedestrian facilities for people with visual impairment in the three universities. The table below summarizes the findings:

**Table 4.1 Pedestrian Facilities for SWSN**

<b>Pedestrian Facilities for People with Visual Impairment</b>	<b>Status in Universities</b>
Tactile Paving	Found only in AAU, around the main gate along 50m. DBU and KMU don't have it.
Steps	Not found in all campuses.
Shared Footways and Cycle Ways	Not found in all campuses.
Devices at Crossings	Not found in all campuses.

The findings indicate that AAU has better roads with tactile paving, providing some accessibility. However, both DBU and KMU lack essential features like shared footways and devices at crossings.

#### **B. Buildings**

Observations were made on the accessibility status of buildings in terms of ramps, stairs, signage, doors, flooring, and toilets. The table below summarizes the findings:

**Helix****Table 4.2 Buildings Accessibility Status for PA of SWSN**

Features	DBU	KMU	AAU
Ramps	Some ramps are old and have a steep slope.	10 ramps are comfortable, others seem made for report purposes.	Most buildings have ramps, but about half are not well-designed.
Stairs	Avoidance of spiral stairs and tapered treads.	Avoidance of spiral stairs and tapered treads.	Avoidance of spiral stairs and tapered treads.
Signage	Clear signage at the entrance, but old and not up-to-date.	Signage not visible and scattered.	Well-organized and visible signage found everywhere.
Doors	Most doors are wide, but some dormitory doors are narrow.	New buildings have well-designed standardized doors, while old ones are risky.	Doors are narrow and restrict movement for those using mobility aids.
Flooring	Some glossy and damaged floors pose dangers.	Some glossy finish floors.	Old and unrenewed floors.
Toilets	Small cubicles, narrow doors, and inaccessible features.	Similar to DBU.	Similar to DBU.

The observations reveal that while all universities have some accessible features, there are still limitations in terms of ramps, stairs, and other facilities.

**C. Sports Fields and Gymnasiums**

Observations were made on the accessibility of sports fields, tracks, and gymnasiums. The findings are summarized in the table below:



**Helix****Table 4.3 Accessibility of Sports Field and Gymnasium for SWSN**

Features	AAU	KMU	DBU
Sports Fields and Tracks	Well accessible with natural grass.	Muddy, stony, and not well-constructed.	Far, with obstacles, and lacks defined lines.
Gymnasium	Risky for wheelchair users.	Comparatively good with narrow ramps.	Accessible with a good road for all SWSN.

No SWSN were observed in these areas during the observation period.

### 1.12 FGD and Interviews analysis

University management facilitation on university's SWSN involvement in PA

Before freshman Ayele (sido name) registered for classes and motivated to learn in one of the top universities of Ethiopia, he took virtual tours of the buildings to make sure he'd be able to get to class on the days when he needs to use a wheelchair.

Ayele has an undiagnosed progressive neurovascular disease, which causes seizures, speech issues and cardiac problems. He said he is sometimes forced to miss his University major course on the main Campus because only some of the Vern Express shuttles are wheelchair accessible.

*“I shouldn't have to pick whether I'm going to go to class or not depending on my wheelchair status,” he said.*

While many campus buildings have been updated to be more accessible to people with disabilities in the past few years, eight students with disabilities said many buildings still lack proper accommodations. Those students said parts of campus are uncomfortable, difficult or even impossible to navigate without extensive renovations.

Tesema (sido name), a junior who has postural orthostatic tachycardia syndrome, commonly known as POTS – a condition that results in an abnormal heart rate upon standing – said because she sometimes struggles to walk up stairs, he has trouble meeting with Lecturers and teaching assistants who have offices in aging townhouses.

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*“Some professors again don’t understand the idea of an invisible illness and disability, where whenever I look fine, they don’t understand why I would want to miss class and just think that I’m just trying to get a couple more hours of sleep,” he said.*

In the last few years, students have registered with Disability Support Services in record numbers. The office currently manages academic and lifestyle accommodations for some students, officials said.

### A. Restraints of the university’s SWSN in performing daily PA

Last April, Dr Gezew(sido name), the vice provost for diversity, equity and community engagement, said the office was conducting a review to see if it has enough resources to meet the needs of the rising number of students seeking support.

*Dr Gezew said "not all buildings on campus are currently up to the standards set by the international with Disabilities Act, a 1990 law that prohibits discrimination based on disabilities. The law requires that when buildings undergo renovations, they must be updated to include accommodations that comply with ADA standards."FGD<sub>5</sub>*

Some townhouses on campus have yet to be renovated since the law was passed, and students who cannot access those buildings should reach out to disability centres for assistance, he said.

*“Every one of our students gets individualized assistance and there are no two situations that are the same,” she said “All accommodations, including housing, are provided after an individual review. Accommodations are based on what each individual’s disability, documentation and needs require.” FGD<sub>5</sub>*

Students with disabilities said *"the administration and class buildings are difficult to access because it has no elevators, preventing them from visiting lecturers or professors’ office hours."*

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Dr gezaw said the University aims to create an environment in which students with disabilities feel accepted and can contribute equally to universities mission.

*“When we use exclusive language, or create spaces that exclude people with disabilities, we are telling people that they are not welcome,” he said.*

Last spring in once university, a group of students with disabilities formed a student organization – called the Disabled Students Collective – that meets once a week to discuss concerns for students with disabilities.

DR Gezaw, said platform seating and desks attached to chairs are some of the problems students face on campus. Professors are often unaware of the accommodations students with disabilities need, he added.

*“One thing we’re trying to get the community as a whole to realize is how much the infrastructure of universities can affect a student’s experience,” FGD<sub>7</sub>*

The student-run organization, which has about 20 to 30 regular members, is universities first ever to focus on peer-to-peer discussion and support for disabled students, members said. "The group holds campaigns like #Accesses, where they evaluate the accessibility of student spaces and academic buildings by photographing, filming and documenting them at universities resources room", FGD<sub>7</sub>

The students said newer buildings, like the Science and Engineering Hall, opened in 2015 Ec, had accessible entrances and a built-in ramp next to the stairs on the first floor, allowing disabled and able-bodied students to enter the building the same way. But in older buildings, like Dr gezaw, said disabled students can’t enter through the main doors, forcing them to come in through an accessible entrance around the corner – a less-inclusive design.

Tasew and ketma, a sophomore majoring in English with multiple disabilities, said disability centres is accommodating of many academic aspects, like note-taking, but can improve in

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supporting personal care assistance for students traveling to and from class. Personal care assistance often includes hiring or providing personal assistants or translators, which Disability centres provides to some students.

*“There have been times where I have taken it upon myself to get to class without someone, or I have asked my friends to do it because I just need to get to class that day and I just can’t handle finding someone that day,” Ayele, who uses a wheelchair, said.*

Experts on disability affairs said University officials must strive to provide a comfortable environment for all students and faculty by making more buildings accessible to students PA.

Aynea B, a SNE expert, said any situation that divides a student with a disability and their able-bodied peers creates a potentially problematic and frustrating separation between groups of students.

*“It’s just important to anticipate the need for people with disabilities, and the best people who can help with creating plans for addressing some of these issues are the people with disabilities themselves,” Aynea said.*

She added that universities should ensure campuses are designed so that all students can have equal access to all parts of a building and be able to use entrances in the same way.

*“Sometimes when I hear from students with disabilities about something not being very accessible to them, often it’s sort of technically accessible – they can kind of get there, maybe they have to go through the back door,” Aynea said. “I mean, how friendly is that?”*

## 5. Summary of Findings and Recommendations

### 5.1 Introduction

This chapter provides a summary of findings, recommendations, and suggests future research directions based on the conducted study.

### 5.2 Summary of Findings

1. **Limited Physical Activity Engagement:** University students with special needs (SWSN) exhibit minimal involvement in physical activity, indicating a need for increased opportunities.
2. **Environmental and Social Barriers:** Despite having an interest in physical activity, SWSN face barriers related to the environment and societal factors hindering their engagement.
3. **Road Infrastructure:** Addis Ababa University (AAU) boasts better road infrastructure with asphalt concrete compared to the observed universities (DBU and KMU), which have poor road conditions.
4. **Building Accessibility Issues:** The majority of administration and class buildings lack elevators, making it challenging for SWSN to access lecturers' offices or attend office hours.
5. **Poor Building Features:** Ramps, stairs, doors, signage, and flooring in buildings are inadequately designed, restricting the ability of SWSN to engage in physical activities within the university.
6. **Lack of Technological Support:** Modern technologies that support the accessibility of roads, such as tanji blokes, truncated domes, detectable warnings, tactile tiles, and surface indicators, are lacking in all observed universities.
7. **Positive Attitude:** Despite the challenges, there is a positive attitude among students, expressing a desire to participate in physical exercise.
8. **Uneven and Unmaintained Playgrounds:** Sports fields and playgrounds are often uneven and unmaintained, presenting difficulties for SWSN to access and engage in activities.
9. **Insufficient Grass in Playgrounds:** Playgrounds in all campuses lack sufficient grass, increasing the risk of injuries for SWSN.
10. **Need for Intensive Training:** SWSN require intensive and short-term training to address their specific needs in engaging in physical activities.

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### 5.3 Recommendations

#### **A. For AAU, DBU, KMU Stakeholders: Architects and Administrators**

1. **Create Equal Access:** Design buildings and facilities with a universal design approach, ensuring equal access for all students, including those with disabilities.
2. **Place Important Items Within Reach:** Install essential tools at disability-appropriate heights, considering wheelchair accessibility.
3. **Design Walkways Based on Campus Grading:** Consider the grading of ramps and paths, ensuring usability for all students, and strategically place buildings on flatter portions of the site.
4. **Identify Places for Students to Sit:** In spaces with sloped floors, find areas where people in wheelchairs can safely sit, providing various experiences.
5. **Install Elevators:** Ensure multi-level buildings have elevators strategically placed to maintain accessibility without compromising program space or aesthetics.

#### **B. For the Sports Science Department:**

1. **Prepare Reference Books and Manuals:** Develop resources on adapting environments and scenarios for the physical activity of SWSN.
2. **Facilitate Professional Dialogue:** Organize discussions on improving SWSN engagement in physical activity, encouraging a collaborative approach.
3. **Conduct Scientific Reviews:** Undertake structured reviews and disseminate scientific findings on the topic of physical activity for SWSN.
4. **Adapt Systems and Strategies:** Modify systems, strategies, and co-curricular materials to accommodate physical activity for SWSN.

### 5.4 Next Steps

Despite budget constraints, this study contributes significantly to understanding the engagement of SWSN in physical activity. The recommendations aim to enhance the inclusivity of university environments, particularly for SWSN. Future research should continue to explore and implement strategies to improve SWSN engagement in physical activity.

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