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Influence of mobility aids on academic performance of learners with disability in public primary schools in saboti sub-county, Kenya

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Abstract

The purpose of this study was to assess the influence of mobility aids on academic performance of learners with disability in public primary schools in Saboti Sub-County, Kenya. The study utilized a descriptive research method, concentrating on a target group of 1,509 individuals, comprising of 1,496 learners with disabilities and 13 heads of institutions from public primary schools in Saboti Sub-County, Kenya. A sample size of 310 was established utilising the Krejcie and Morgan Table for sample size determination. The purposive and stratified random sampling procedures were employed to classify the respondents. Out of a sample size of 310, all 13 heads of institutions were purposefully selected for the study, while the remaining 297 participants, who were learners with disabilities, were chosen using the stratified random selection method. The primary data gathering instruments employed in the study were interview schedules and structured questionnaires. A reliability coefficient of 0.79 was achieved from the instrument, signifying its reliability. Descriptive statistics and the chi-square test were utilised to evaluate quantitative data, which were presented in tables. The qualitative data analysis was based on the study themes and was illustrated through quotations. The research demonstrated that mobility aids such as use of canes, scooters and wheelchair improved their academic performance. The research will benefit academics, policymakers and society at large.

Keywords: Mobility aids, academic performance, special needs education, Kenya

Introduction

Mobility, according to Stone (2017) ^[13], is an attribute that allows humans with disabilities to move unaccompanied without injury. The ability to explore and interact within the environment is critical, as even minor injuries can negatively affect a person's mental and physical well-being. Ineffectiveness in movement, whether independent or not, can significantly disturb learners with different abilities. Providing mobility aids for students with disabilities enhances their freedom to explore and interact in educational settings, thus improving their learning opportunities (World Health Organization, 2022). Rushton *et al.*, (2019) ^[12] emphasize that mobility aids promote self-sufficiency, particularly by improving physical abilities such as walking, shifting positions, balancing, and using muscle-strengthening equipment. When students receive regular physical therapy and use appropriate mobility devices, these abilities can become professionally accessible within educational institutions. The value and effectiveness of these aids may influence the instructional contributions and social integration of differently-abled students. Mobility aids help students improve posture, gait, and bodily awareness, while also aiding in joint function, muscle strengthening, and mobility training, contributing to their success in school. When evaluating mobility options for students with disabilities, it is important to assess the students' ability to move within their surroundings. Various approaches, such as those mentioned above, are necessary to determine if different types of mobility services are provided to students based on continuous assessment outcomes. Evaluations should focus on the strengths and needs of each student (Zaino, 2023) ^[20]. Zaino argues that these evaluations are crucial for developing individualized strategies, as each student's physical challenges differ. Collaborative efforts involving multi-disciplinary teams should focus on creating personalized mobility solutions.

Rushton *et al.*, (2019) ^[12] suggest that helping students achieve unrestricted mobility requires introducing strategies that involve monitoring and fostering relationships between the

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students and their environments. Provisions that are well-designed can facilitate the development of essential mobility skills, ultimately promoting freedom of movement in educational settings. Psychotherapists, in this context, play a significant role in facilitating mobility training that aligns with the developmental needs of children. Additionally, Rushton *et al.*, (2019) ^[12] argues that children with physical disabilities often require different tools or gadgets depending on their location and movement needs. Over time, as a child grows, their equipment may become insufficient, highlighting the importance of regular evaluations by therapists to ensure the effectiveness of mobility devices. These devices should allow students to engage with learning activities and contribute to community life effectively. Assessing the functionality of mobility devices is crucial in ensuring that students can perform well academically and socially. Many students with physical disabilities face challenges in moving around and engaging with their surroundings or communicating effectively. Literature on mobility aids indicates that these tools improve socialization, posture, and participation in educational activities. The quality of mobility devices significantly affects an individual's ability to engage in everyday life, contributing to increased self-esteem and self-efficacy (Rushton *et al.*, 2019) ^[12].

Mobility aids such as motorized wheelchairs as well as scooters are essential for individuals with limited physical strength, allowing them to navigate more effectively and engage in daily activities. These aids also provide energy savings and improve the user experience, making it easier to navigate various environments. Over the past two decades, theories on disability management have shifted from a medical model where disability is seen as an inherent issue in the individual's body to a social model, which focuses on the interaction between the individual and their environment. The World Health Organization (2022) has adopted this social model, recognizing that disabilities are shaped by physical and societal constraints that restrict a person's capacity to engage completely in society. More inclusive settings have emerged as a result of these modifications. For Children psychological and emotional development, mobility is essential. Wheelchairs, for instance, give disabled children a sense of freedom that enables them to explore their environment and participate more completely in social interactions. For people with disabilities, high-quality mobility aids enhance participation, contentment, and general quality of life (WHO, 2022, UNICEF, 2022). Mobility aids are not only useful for children with congenital disabilities but also for individuals with amputations, arthritis, cerebral palsy, strokes, spinal cord injuries, and other physical conditions. These devices help individuals lead fulfilling lives, enabling them to perform tasks that others without disabilities can do. Studies demonstrate that once users accept mobility technology and integrate it into their daily lives, their independence and quality of life significantly improve (WHO, 2017).

According to Allen *et al.*, (2019), reducing the need for official caregiving services and alleviating the physical burden on caregivers can be achieved by providing quality assistive devices. By enabling individuals with disabilities to perform daily activities independently, these devices improve their overall quality of life. Investing in high-quality mobility aids can also reduce healthcare costs, minimize health risks, and improve the financial well-being

of individuals. The World Health Organization (2017) reports that over a billion people globally experience some form of disability. A study by the WHO across 69 nations revealed that many adults, particularly in countries like India, Indonesia, and Mongolia, face mobility challenges. One in five individuals experience mobility issues, with one in twenty experiencing severe disability. This highlights the global need for accessible mobility aids in educational and community settings. Assistive technology plays a crucial role in supporting learners with disabilities by addressing their specific educational needs, facilitating participation, and promoting independence (McKnight and Davies, 2017) ^[7]. Such technology enables students to access educational content effectively, participate actively in learning, and interact with peers, providing them with an inclusive learning experience (Winter and O'Raw, 2019) ^[16]. Gell (2015) ^[3] emphasizes the importance of providing students with disabilities the flexibility to sit, stand, or move in ways that meet their needs. By using assistive technologies like crutches, walkers, and wheelchairs, students with psychomotor disabilities can participate in a variety of activities. The effective use of mobility aids helps these students perform tasks that would otherwise be difficult or impossible.

Various mobility devices, such as crutches, walkers, and powered wheelchairs, are crucial in adapting to the particular mobility requirements of each person. These devices help improve accessibility, the autonomy and standard of living of people with disabilities (Stindt, Reed and Obukowicz, 2017). Individuals with disabilities often require well-designed, well-fitting, and high-quality mobility aids to ensure their inclusion and participation in society. However, the WHO (2017) and USAID (2017) report that approximately 20 million people worldwide lack access to the mobility aids they need, and many who have access to such devices find them to be poorly fitting and unsuitable for their needs resulting in many mobility aids remaining unused. Research carried out in Eastern Pakistan by Borg, Larsson and Ostergren, (2011) ^[1] indicates that involving users in the process of selecting mobility aids improved their satisfaction and outcomes. When users were asked about their preferences and involved in the measurement of devices, they reported fewer activity limitations and higher satisfaction. Moreover, trained users of mobility aids reported greater independence, reduced barriers to participation and an enhanced standard of living (Livingstone and Field (2015) ^[6]. Scooters for mobility scooters, which have become increasingly popular in various countries, have undergone significant improvements in design and functionality. Zagol and Krasuski, (2017) ^[19] note that the use of quality scooters enhances users' ability to walk and engage in physical activities, reducing physical effort and enabling them to travel longer distances. These scooters are particularly useful for individuals who have difficulty walking but still want to engage in everyday activities. In the United Kingdom, mobility scooters are not mandatory, but their use has become more widespread. However, the design of scooters is not always compatible with changing infrastructure or environmental conditions. Some scooters require users to walk short distances with assistance, as they may not be able to access certain buildings or locations. Despite this, scooters have become an increasingly popular option for individuals seeking mobility assistance (NHS, 2018). The choice to use a mobility scooter is typically made by the individual, and the cost may be subsidized by grants for disabled people through programs like Motability (2018) ^[8].

Methodology

A descriptive research design was adopted in the study. According to Orodho (2017) ^[11], a survey is one of the descriptive research techniques for obtaining data that involves conducting interviews and distributing questionnaires to a sample of people. The study was carried out in the 323.6 km² Saboti sub-county, which has an estimated population of 193,038 (GOK, 2019). Large-scale agricultural and animal husbandry are the main commercial activities conducted in the subcounty. The Saboti sub-county was chosen as the research site because it has several schools with students with impairments. As per Mugenda and Mugenda (2003) ^[9], a population is a collection of subjects or individuals in the universe, particularly for the sake of study, which comprises a whole group of individuals, objects and phenomena with distinguishable characteristics. Therefore, the study focused on 13 heads of institution and all 1496 learners with disabilities enrolled in Saboti Sub-County public primary schools whereby 1509 people made up the whole target group as shown in table 1.

Table 1: Target Population

Category	Target Population
Heads of institution	13
Learners with disability	1,496
Total	1509

Source: Ministry of Education, Saboti Sub County Office (2019)

Table 2: Descriptive statistics for the influence of mobility aids on learning outcomes of learners with disabilities

Statements		SD	D	U	A	SA	Mean
Canes have improved your academic performance	F	39	18	10	82	123	3.85
	%	14.3	6.6	3.7	30.1	45.2	
Scooters have improved your academic performance	F	19	26	14	88	125	4.01
	%	7.0	9.6	5.1	32.4	46.0	
Wheelchairs have improved your academic performance	F	14	25	12	100	121	4.06
	%	5.1	9.2	4.4	36.8	44.5	

Source: (Field Data, 2021)

According to Table 2, 123 respondents (45.2%) strongly agreed with the assertion that canes helped them do better academically, 82 respondents (30.1%) agreed, 39 respondents (14.3%) strongly disagreed, 18 respondents (6.6%) disagreed, and 10 respondents (3.7%) were unsure. According to the study findings, respondents seemed to concur (Mean=3.85) that using canes helped them do better academically. This suggests that once canes are given, learners with disabilities do better academically. This supports the findings of Dunst and Trivette (2012) ^[12] who found that providing mobility assistance to learners with disabilities increases their freedom to explore, interact with others and take advantage of educational opportunities. Furthermore, 125 respondents (46.0%) highly agreed with the assertion that scooters helped them enhance their academic performance, 88 respondents (32.4%) agreed, 26 disagreed, 19 strongly disagreed, and 14 respondents (5.1%) were unsure. According to the study's findings, respondents were in agreement. (Mean=4.01) that scooters helped them achieve better in school. This was in support of the following statement made by an interviewee.

*...Having to rely on other people to get about may be rather annoying. It may become impossible for learners with disabilities to leave the house without help. However, this problem is readily resolved with the use of a mobility scooter, which helps learners do better academically....*Male Participant, 43 years, Head of

The Krejcie and Morgan (1970) ^[5] table was utilised in the study to determine the sample size in which a target population of 1509 gave a sample size of 310 persons. All heads of institution were purposively selected to participate in the study, hence the sample size comprised of 13 heads of institution and 297 learners with disabilities; totalling to 310 respondents. Data was gathered utilising questionnaires for learners with disabilities in addition to interview schedules for heads of institution.

In order to analyse the gathered data, the raw data was scrutinised for inconsistencies or omissions. In addition, qualitative and quantitative data were coded in order to cluster responses into different groupings. Given that this study was descriptive in nature, analysed data was presented in tables including means, frequencies and percentages. The study hypothesis was validated by applying the chi-square test of association whilst thematic analysis and coding were used to analyse qualitative data.

Results

In order to determine the influence of mobility aids on learning outcomes of learners with disabilities in public primary schools in Saboti sub-county, frequencies, percentages, mean distributions and a Chi-square test were utilized in analysing data for the objective of the study. The findings were compiled in Tables 2 and 3.

institution.

As a result, learners with disabilities will do better academically if scooters are available. This confirms the findings of Livingstone and Field, (2015) ^[6] that scooters may influence how learners with disabilities socialise and contribute to their education.

Finally, 121 respondents (44.5%) highly agreed with the assertion that using a wheelchair helped them perform better academically, 100 respondents (36.7%) agreed, 25 respondents (9.2%) disagreed, 14 respondents (5.1%) strongly disagreed, and 12 respondents (4.4%) were unsure. The study found that respondents agreed that using a wheelchair helped them do better academically (Mean=4.06). This was in support of the following statement made by an interviewee:

*...A child with physical limitations may require many assistances, including crutches and wheelchairs, depending on the situation, distance and mobility. In order for learners to function effectively in class, the items help them improve their posture, gaits, and body awareness....*51 years old male participant and head of institution.

The implication of this, is that learners with disabilities do better academically if wheelchairs are made available. A Chi-square test of association was therefore utilised to further evaluate the data in order to address the study null hypothesis.

H₀₁: There is no statistically significant relationship between mobility aids and learning outcomes of learners with disabilities in public primary schools in Saboti Sub-County.

Table 3: Chi-Square Test of Association between Mobility Aids Programs on Learning Outcomes of Learners with Disabilities in Public Primary Schools in Saboti Sub- County

Chi-Square Test			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	526.381 ^a	271	.000
Likelihood Ratio	285.084	271	.000
Linear-by-Linear Association	96.821	1	.000
N of Valid Cases	272		

a. 272 cells (95.4%) have expected count less than 5. The minimum expected count is .01.

Source: (Field Data, 2021)

As indicated in Table 3, p value ($p=0.000$) is below 0.05. Consequently, the hypothesis, “there is no significant relationship between mobility aids and learning outcomes of learners with disabilities in public primary schools in Saboti Sub- County” was rejected. The implications of this, is that that there is statistically significant association between mobility aids on learning outcomes of learners with disabilities in public primary schools in Saboti Sub- County.

Conclusion

It was determined based on the results that mobility aids influence learning outcomes of learners with disabilities in public primary schools in Saboti sub county, Kenya. This is because canes, scooters and wheelchair improved their learning outcomes.

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