INFLUENCE OF HEARING AIDS ON ACADEMIC PERFORMANCE OF LEARNERS WITH DISABILITY IN PUBLIC PRIMARY SCHOOLS IN SABOTI SUB-COUNTY, KENYA

Peter Namasaka Njofu[1*], Ronald Werunga Kikechi[2]
*Mount Kenya University**

Corresponding Author: -
ronaldkikechi@gmail.com

Abstract: -

The purpose of this study was to assess the influence of hearing aids on academic performance of learners with disability in public primary schools in Saboti sub-county, Kenya. The study adopted a descriptive survey research design with a target population of 1509, which comprised of 1496 learners with disability in public primary schools in Saboti sub-county and 13 head teachers. A sample size of 310 was determined by the use of Krejcie and Morgan Table for determining sample sizes. Purposive and stratified random sampling techniques were utilized to determine the respondents. From the sample size of 310, all the 13 head teachers were purposively selected to participate in the study, with the remaining 297 being learners with disability, who were picked through stratified random sampling technique. The main data collection tools used in the study were, interview schedules and structured questionnaires. A reliability coefficient of 0.79 was obtained from the instrument, indicating that they were reliable. Descriptive statistics and chi-square test was employed to analyze quantitative data and presented in tables. The analysis of qualitative data was as per the themes of the study and was presented using quotations. The study established that hearing aids such as microphones, amplifiers, and receivers helped in improving academic performance. The study will be beneficial to scholars, legislators and society as a whole.

INTRODUCTION

Audiologists advance that child with hearing loss utilize prescribed hearing technology during school hours. Thus, children with hearing loss benefit from the use of devices placed inside their ears, such as cochlea implants, spoken telecommunication training, and instructions, as well as social support services (WHO, 2013). Diverse studies currently being conducted show that hearing aids are useful for people with special needs in some ways. Hearing aids assist people who are differently abled in a variety of ways; including recognizing discourse and resonances (Poss & Mann, 2010), as well as managing time (Green, Houghes, & Ryan, 2011). Hearing aids are helpful to users as they do not focus on finished products when two or four years of usage is over. The hearing aids become a portion of that package for routine life functioning. Learning through hearing aids, lacking thought for users' opinions with choice, straightforward device protuberance, or bad device performance may alter users' wants and significance; this decreases employment for helpful hearing aids at sequential times in the life cycle of the disabled (Philips & Zaoh, 2010).

Women appear to accept and utilize hearing aids more readily compared to men; acknowledging them as well as utilizing individual amplification elements. Comparable deductions for tests conducted in Switzerland and England reveal that ladies tended to utilize hearing aids the majority of the time compared to their male counterparts (Smeeth et al., 2014). Studies done in Sweden additionally shows samples of 595 learners, among whom girls used hearing aids to a greater extent compared to schoolboys (Coniavitis-Gellerstedt, 2010). With distinction to Norwegian studies, it was found that older males face fewer barriers to the use of hearing aids than older females (Solheim, 2011). Mature ladies mostly prefer fewer perceptible body-fitted hearing aid processors compared to gadgets fitted around their bodies (Preisler & Tvingstedt, 2010). Possible highlighting results on bodily fitted frequency modulated hearing aid receiver is presumed a hindrance. Therefore, they were not fashionable as well as distinctly available for hard-of-earshot learners compared to their normal counterparts (Luckner & Natural Scientist, 2014). Uniform tiny frequencies modulated products are thought to be noticeable and unattractive, therefore influencing the learning of children with hearing problems (Kent & Smith, 2012).

Technological factors, like old hearing aids with bad operating orders, appear to deter utilization. A Swedish study described how some percentages of about fourteen with inductive hoops control did not perform well in hearing aids (Björklund & Sundelin, 2010). The same results were obtained in Norwegian studies conducted by academics; approximately fourteen percent of the hearing items had issues and were used incorrectly (Rekkedal, 2016). Technological types as well as sound qualities are put into discussion. Previous years have witnessed wonderful advances in listening technologies. Since out-dated technologies are giving room for modern revolutions, modern hearing aids make everything possible towards satisfying an individual’s wants (Banerjee & Garstecki, 2011). The availability of multiple programs out there helps in numerous listening aids and supplies of advanced noise reduction methods, as well as the reduction of acoustic feedback. Learners with hearing problems have conjointly profited from assistive technologies. Conversely, research studies indicate voice quality is a retardant. A scholar in Australia, employing samples of fifty-seven mature children with serious listening impairment, revealed some degrees of happiness brought by voice qualities on hearing devices used by (Cameron et al., 2013).

Listening technology intended for the deafened as well as partially impaired people to hear people includes specific loudspeakers such as listening devices as well as tube-shaped structure implants, which are specifically placed over very useful hearing aids that do not appear to be used around heads, such as schoolroom sound fielding amplification systems (Dillon, 2010). Specialized listening technology may be barriers for deaf students in schools, such as schoolroom noise, a rapid rate of debate, rapid change of themes, and large numbers of people involved in oral communications, which may prevent learners with hearing problems from participating with trainers and learner-to-learner communications (Luckner & Natural Scientist, 2014).

Furthermore, older students with hearing loss appear to be constantly using hearing aids (Winn, 2014). Wafula’s (2013) investigation asserts non-use of hearing aids is performed solely among the eldest learners, according to a sample comprising of one hundred and sixty-five members. Winn (2014) on the other hand established that among sixty respondents, some of them declined the use of hearing aids, ranging from grammar schools to continuing throughout high school. During some scientific examinations that involved learners from thirteen and nineteen years ago, the hearing aid user rate within intermediate colleges was low, while the variety of hearing aid user rates within basic colleges was great (Gellerstedt, 2011). When compared to young schoolchildren, adults used listening devices as well (Kent & Smith, 2012; Wennergren, 2013; Odelius, 2010).

Initial interventions push for repeated utilization of hearing aids at an advanced age is vital(Gillies, 2012). Additional findings that support the above claims suggest that learners who had fittings of hearing aids at an early age did appreciate earshot items as compared to people getting fittings of hearing aids nowadays (Rekkedal, 2016). An investigation into teenagers' use of hearing aids showed that those planted with hearing implants later in life failed to be planted once more with them. Hence, no teenager who underwent initial interventions by means of ear implants shared what they went through (Wheeler et al., 2013).

Methodology

The study utilized a descriptive survey research design. Orodho (2017) points out a survey as a method of gathering information by way of interviews alongside handing out questionnaires to samples of individuals. The study was conducted in Saboti sub-county with a population estimate of 193,038 (GOK, 2019) that covers an area of 323.6 Km2. Principal commercial activities carried out in the sub county comprises of large scale farming and animal husbandry. The reason of selecting the study location of Saboti sub-county was based on it having a number of schools with learners who are abled differently.

Mugenda and Mugenda (2003) outlines a population as a set of themes or persons in the universe, specifically for investigation that entails a complete cluster of people, objects and entities that have recognizable characters and distinctiveness. Thus, the study targeted all 1496 learners with disabilities in the public primary schools in Saboti Sub-County and 13 head teachers. Hence, the total target population was 1509 persons (see Table 1).

Table 1: Target Population

Category	Target Population
Head teachers	13
Learners with disability	1,496
Total	**1509**

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

The study used Krejcie and Morgan (1970) Table for determining the sample size. From the table a target population of 1509 gives a sample size of 310 persons. All head teachers were purposively selected to participate in the study, hence the sample size comprised of 13 head teachers and 297 learners with disability; totaling to 310 respondents. Collection of data was by way of interview schedules for head teachers alongside questionnaires for learners with disabilities.

Analysis of collected data was done by verifying raw data to check omitted or incorrect data. Clustering of responses into varied classes was done by coding the collected data that was quantitative as well as qualitative. This study being descriptive in nature; it utilized the frequencies, percentages and means in analyzing data and presented in tables. Chi-square test of association was used to prove the hypothesis of the study. Qualitative data was coded and analyzed thematically.

Results

To determine the influence of hearing aids on academic performance of learners with disability in public primary schools in Saboti sub-county; the researcher used frequency, percentage, mean distribution and Chi-square to analysis data for the objective of the study. The results were as summarized in Table 2 and Table 3.

Table 2: Descriptive statistics on the influence of hearing aids on academic performance of learners with disability in public primary schools

Statements		SD	D	U	A	SA	MEAN
Microphone helped in improved academic performance	F	28	17	21	108	98	3.85
	%	10.3	6.3	7.7	39.7	36.0	
Amplifiers helped in improved academic performance	F	8	38	16	110	100	3.94
	%	2.9	14.0	5.9	40.4	36.8	
Receivers helped in improved academic performance	F	11	27	14	80	140	4.14
	%	4.0	9.9	5.1	29.4	51.5	

Source (Researcher, 2022)

Table 2 shows that 216 (75.7%) of the respondents either agreed or strongly agreed with the statement that microphone helped in improving academic performance. Only 28 (10.3%) strongly disagreed with the statement. Similarly, a majority of the respondents (mean = 3.85) who felt that microphone helped in improving academic performance. This, was supported by one of the head teachers who had the following to say:

…Microphones can help promote language articulation, develop public speaking skills, and provide an incentive for active participation among learners with disability…Female ***Participant, 54 years, Head Teacher.***

This implies that microphone play a vital role in assisting learners with hearing impairment to achieve better academic results. The findings concurs with that of Lozano, Hernaez, Navas, Gonzalez, and Idigoras (2015) who observe that in

some way, assistive technology like microphone attempts in recovering individuals' gap in detecting as well as occurrences of resonance.

Similarly, 210 (77.2%) of the respondents either agreed or strongly agreed with the statement that amplifiers help in improving academic performance. The mean rating among the respondents was also high (Mean=3.94) implying that. This, was also supported by one of the head teachers who had the following to say:

*…Many learners with disability, struggle with some type of hearing loss that hinder their ability to learn. A sound amplification system can lessen the influence that the hearing loss has on the student. A sound amplification system can help the teacher beat noise and ensure that the lesson is the focus of the students…**Male Participant, 47 years, Head Teacher**.*

This implies that amplifiers play a vital role in assisting learners with hearing impairment to achieve better academic results. This findings is in tandem with that of Hersh and Johnson, (2015) that telecommunications, which includes mobile phones, that are amplified, captioned, and pagers, closed captioning, persons to persons and groups' communication activities assist an individual in sharing opinions to the outside humanity.

Lastly, 220 (80.9%) of the respondents either agreed or strongly agreed with the statement that receivers help in improving academic performance of students with disability in public primary schools. Only a paltry 14 (5.1%) respondents disagreed with the statement. The mean rating among the respondents was also high (Mean=4.14). This implies that receivers help to improve academic performance of students with disability in public primary schools. This, was supported by one of the head teachers who had the following to say:

Data was further analyzed using a Chi-square test of association in order to answer the null hypothesis for the study.
HO_1: There is no statistically significant relationship between hearing aids and academic performance of learners with disability in public primary schools in Saboti sub-county.
The results were as summarized in Table 3.

Table 3: Chi-square test of association between hearing aids and academic performance of learners with disability in public primary schools

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	467.534[a]	271	.000
Likelihood Ratio	333.145	271	.000
Linear-by-Linear Association	98.266	1	.000
N of Valid Cases	272		

a. 271 cells (98.1%) have expected count less than 5. The minimum expected count is .01.

Source (Researcher, 2022)

Table 3 shows that the p value (p=0.000) for classroom play was less than 0.05. Therefore the hypothesis, "there is no significant relationship between hearing aids and academic performance of learners with disability in public primary schools in Saboti sub-county" was rejected. This implies that there is statistically significant relationship between hearing aids and academic performance of learners with disability in public primary schools in Saboti sub-county.

Conclusion

It was, concluded from the findings that hearing aids affects academic performance of learners with disabilities in public primary schools in Saboti sub-county, Kenya. This is because hearing aids such as microphone, amplifiers, and receivers helped in improving academic performance.

BIBLIOGRAPHY

[1] Banerjee, S., & Garstecki, D. C. (2003). Brief update on hear- ing aids. Operative Techniques in Otolaryngology-Head and Neck Surgery, 14, 268–271. doi:10.1053/S1043–1810(03) 00063-0

[2] Björklund, K., & Sundelin, B. (2010). Pedagogen i vardagen på SPAF-konferens. *AudioNytt*, *37*, 6.

[3] Cameron, B., Cunningham, E., Lindner, A., Nicol, L., Chenoweth, L., & Driscoll, C. (2008). Hearing aid use and satisfaction in young Australian adults with severe to pro- found hearing loss. Australian and New Zealand Journal of Audiology, *30*, 59–72.

[4] Coniavitis-Gellerstedt. (2006). Om hörselskada i skolan. Örebro, Sweden: Örebro University.

[5] Dillon, H. (2001). Hearing aids. Sydney, Australia: Boomerang Press.

[6] Gillies, K. (1997). Hearing aid use by students at a school for the deaf. *Australian Journal of Audiology*, *19*, 91–98.

[7] Harris, J., (2010). *The use, the role & application of advanced technology in the lives of disabled people in the UK. Disability and Society*, 25(4), 427-439. DOI:

[8] Hersh and Johnson, (2015)

[9] Kent, B., & Smith, S. (2006). They only see it when the sun shines in my ears: Exploring perceptions of adolescent hear- ing aid users. Journal of Deaf Studies and Deaf Education, 11, 461–476. doi:10.1093/deafed/enj044

[10] Lozano, H., Hernaez, L., Navas, E., Gonzalez, F. J., &Idigoras, I. (2007). "Non- Speech" sounds classification for people with hearing disabilities. In G. Eizmendi et al. (Eds.) *Challenges for Assistive Technology* (pp. 276-280). BG, Netherlands: IOS Press.

[11] Mugenda, O.M.and Mugenda, A.G. (2003*).Research Methods: Quantitative and qualitative methods*. Nairobi: Latest version.

[12] Odelius, J. (2010). Communication acoustics in classroom environ- ments: On the use of assistive listening devices (Doctoral the- sis). Luleå Technical University, Luleå Sweden.

[13] Orodho, A.J. (2012). *Research ideas and methods in academic and social sciences*.

[14] Preisler, G., & Tvingstedt, A. (2005). Interviews with deaf children about their experiences using cochlear implants. American Annals of the Deaf, 150, 260–267. doi:10.1353/aad.2005.0034