

HEARING IMPAIRMENT; BARRIER TO SOCIAL PARTICIPATION FOR SECONDARY SCHOOL STUDENTS IN MERU DISTRICT-ARUSHA

ABSTRACT

This study assessed barriers to social participation for secondary school students with hearing impairment in Meru District, Arusha. The study was guided by the Social Disability theory. Qualitative (descriptive) research design were applied whereby a total of 143 respondents were included in the study. Data were collected through focus group discussion (FGDs), interview and classroom observation. Thematic analysis was used to analyze qualitative data. The findings revealed that lack of sign language interpreters and discrimination of people with HI in the community leads to their poor participation in the community. This study concluded that there is a need to create awareness among community members that hearing impairment is a medical condition that can be handled. Based on the findings, it was recommended that the government of Tanzania should introduce sign language lesson from primary schools to tertiary institutions basically to enhance interaction between learners with hearing impairment and other people in the society

Key words: Hearing impairment, Social Participation, Secondary school students

Introduction

Globally, 1.5 billion people are currently living with some degree of hearing loss and of whom 432 million adults and 34 million children have moderate or higher levels of hearing loss and are more likely to be affected unless the condition is timely addressed through rehabilitation intervention (WHO, 2021). It is estimated that by 2050 over 700 million people or one in every ten people will have disabling hearing loss if the situation is not addressed. First World Report on Hearing, noted that nearly 50% of people aged 12-35 years or 1.1 billion young people are at risk of hearing loss due to prolonged and excessive exposure to loud sounds, including music listened to through personal audio devices (WHO-ITU, 2019).

World report on deafness and hearing loss states that hearing loss if not properly addressed, can result to negative impact in life such as inability to communicate, depression, anxiety, isolation, loneliness, risk of dementia, cognitive decline in older age and poor development of language and speech in children. This reduce employment opportunity in life later and interpersonal relationships (WHO, 2021).

The term hearing impairment (HI) is used interchangeably with hearing loss. Scholars have defined hearing loss from different perspectives. According to Ndei, (2008), hearing impairment is the general term indicating a hearing loss ranging from mild to profound.

In this study hearing impairment is referred to the condition in which an individual fail to perceive sound waves due to difficulty accessing linguistic information. Also, social participation in this study is considered as an active involvement in all social

activities where individuals contribute and gain abilities and knowledge for development purposes.

A study by Bech, (2015) in Nigeria revealed that the majority of traditional healers ascribed hearing impairment to supernatural causes and other superstitious beliefs. In most cases, children with hearing impairment are born from hearing parents who have little or no knowledge of deafness. Thus, parents of children with HI tend to face challenges in parenting, some of which may affect the family structure, especially in terms of communication and social interaction.

In Tanzania there are different socialization barriers for people with hearing impairment which negatively impact their normal daily life. Ziadat&Alrahmreh, (2020) asserted that hearing impaired lack engagement in social activity, fear of dealing with others, discrimination feelings and education challenges.

According to the National Disability Survey of 2008, 3.2 million Tanzanian (7.8%) of the population aged 7 years and above have some form of disability and up to 5.4 million (13.2%) are affected by disability. The Tanzania mainland has a slightly higher prevalence of disability (13.3%) than Zanzibar (9.3%). The prevalence is also somewhat higher in rural areas (8.3%) than in urban areas (6.36%). Up to 72.3% of households headed by persons with disabilities depend on income from subsistence agriculture and 14.5% depend on self-employment compared to 65.0% and 21.3% respectively for those without. Only 3.1% of persons with disabilities receive income from paid employment.

Furthermore, in Patandi Primary School out of 856 students 22(2.8%) were hearing impaired students, in Meru Primary School, Arusha City, out of 1,300 students

57(4.4%) were hearing impaired while in PatandiMaalum Secondary School where the current study was conducted, out of 233 students 140 (60%) had hearing impairment (MoEST, 2022).

Studies have been conducted on hearing-impaired individuals in society. For instance, studies by (De Clerk, 2016, UNESCO, 2016, Gulding and Finger, 2013, Morris, 2014, King *et al.*, 2006) but the barriers to social participation for secondary school students with hearing impairment has not received enough scholarly attention. This study was conducted to assess barriers to social participation facing people with hearing impairment in Meru District. This paper takes into account the following question:

RQ1. What are the barriers to social participation for secondary school students with hearing impairment in Meru District?

Findings of this study will fill the identified knowledge gap and enlighten readers on barriers to social participation for secondary school students with hearing impairment

2.0 Literature Review

This paper was guided by Social Theory of Disability. This theory was developed by (Mike Oliver, 1996). It builds upon making a distinction between disability and impairment. It also acknowledges that negative attitude and social exclusion are the reasons which makes it difficult or impossible for people with impairment to fully participate in their communities. This theory acknowledges that disability as a social problem and not merely a result of individual body features or attributes of the person. It also demonstrates that the problems disabled people face are the results of

social oppression and exclusion, not their individual deficits, this places the moral responsibility on society to remove the burdens which have been imposed, and to enable disabled people to participate. The social theory has been effective psychologically in improving the self-esteem of disabled people and building a positive sense of collective identity. (Mike Oliver, 1996).

2.1. Empirical Literature Review

Joshua's (2021) reported that Tanzania's Deaf Community has about 324,000 people with hearing impairment and deafness which often makes it difficult to obtain, perform, and keep employment. Both children and adults may suffer from social stigmatization and isolation as a result of hearing impairment. It was also noted that collaborative social participation amongst those with hearing impairment and those without remains more challenging since many hearing people tend to think that the deaf is not very intelligent because of the communication barriers and speech patterns the deaf exhibit.

Morris (2014) conducted a study on the implementation of teaching careers in education at Cardiff University for students who are hearing impaired in the United Kingdom (UK). The objective of the study was to explore students with hearing-impaired learning journeys in educational environments and the effects of discrimination on their participation in class activities. The research found that discrimination and early childhood environment affect both academic and extra curricula performance of children with HI. The study suggested the need to review the teaching career of HI to address the problems facing HI students in their learning journey in the education environment and to develop a successful application of the HI program.

Moreover, Khan & Manderson (2014) conducted a study in Botswana on deaf people who communicate in a national sign language, the study reported that persons with HI often face barriers as almost always healthcare staff do not communicate in a sign language and do not use an interpreter.

A study by De Clerk (2016) revealed that the attitude of the society toward individuals with HI does not encourage their participation and involvement in the community, as they are often discriminated against. Additionally, persons with HI were shown to have limited access to education in Cameroon, as they have few opportunities to further their education (Opoku, 2019).

Furthermore, Kengne (2021) reported that individuals with HI are often marginalized and discriminated against both by their own families and society at large, leading to their social withdrawal from their society.

Schick *et al.* (2017) in a study in public schools in the U.S found that many hearing-impaired students are denied access to classroom communication because of the poor skills of their interpreters. The finding by UNESCO (2016) in the USA requires that the education of children with HI should be directed to the development of their personality, talents, and mental and physical abilities to the fullest potential basically for the preparation of the child for responsible life in a free society. The report stressed that to a deaf child, school becomes their first home as it is the only place, they communicate with each other freely and meaningfully using sign language, finger spelling, and lip-reading.

More recently, the barriers that deaf persons face have been further exacerbated during the COVID-19 pandemic regarding communication access (Rahiem,2021). The pandemic revealed gaps in communication in the health sector with many deaf and hard of hearing people in hospitals without consistent ways to communicate with doctors and staff. The lack of sign language interpreters and the use of masks created additional barriers for deaf persons. Masks reduce access to mouth movement and facial expression, leading to miscommunication and increasing feelings of frustration and isolation.

In his study, Anuar (2017) found that most primary school teachers are not aware of the policy on HI. It was also found out that, there is an increase in accessing facilities in special needs education which has failed to cope with the increased number of enrolled children with HI. Being the case, problems in adequate facilities in special needs education remain persistent. The study recommends special attention be given to learners with HI.

Sign language, therefore, remains the main medium of communication among deaf and hard-of-hearing people. It is how they receive and give out information (Okyere & Addo, 2019). Sign language is a major force that binds deaf people together. With Sign Language, the reception of what is said, viewed, felt, and thought of or spoken is through the use of the eye and gestures of hands and body. Most deaf people, however, grew up in families where sign language was not used by the hearing members and where hearing members could not take their time to talk facing them so they could lip-read them.

Furthermore, teachers of the deaf in Africa, most of who are hearing, lack appropriate training and certification to equip them with the knowledge and skills to work effectively with the deaf (Kiyaga&Moore, 2013). Moreover, how our institutions are organized and classrooms structured are often not conducive to effective learning for the majority of students (Kennedy & Fisher, 2011). A classroom environment is a crucial place for a hearing-impaired student. If there is noise within or outside the classroom, it will impact their ability to use residual hearing through hearing aids, and the student will not be able to understand and interact in the classroom effectively (Sundeen, 2017).

Teaching and learning in a sound-friendly environment will be very effective to speed up the learning of a hearing-impaired student and promote his or her participation in the classroom. In addition, the sitting location and lighting are also very important for interaction in a regular classroom. Some students with HI may need good visibility and facial cues for lip-reading. Lip reading involves observing a person's face and mouth to understand what words are being

A study by Hyde and Power (2013) revealed that most instructors were reluctant to invest time in training and professional development on how best to accommodate deaf students, In Tanzania it is believed that teachers in most of the primary schools lack training in special needs education for children with HI. Despite the Primary Education Development Plan (PEDP), which ensures education for all. The overall quality of primary education in Tanzania remains generally poor for children with HI disability. The shortages of teachers trained in sign language, as well as the lack of teaching facilities, have a negative effect on the delivery of quality education to

children with HI disability. In many schools, class sizes are too big for teachers to facilitate individual attention to learners with HI (HakiElimu, 2019).

3.0 Methodology

3.1 Research Design

The study used qualitative (descriptive) research design. The design was selected over other designs because through narratives the barriers to social participation for secondary school students were explored and understood.

3.2 Study Area

This study was conducted in Patandi Secondary school in Meru district, Arusha-Tanzania. The school was selected because it is the only secondary school which cater children with special needs in Meru district

3.4 Study Population

This study included female and male, students (14- 20 years and above) and teachers with Hearing Impairment

3.5 Sampling technique

Purposive sampling technique were used whereby all students and teachers with HI in Patandi Secondary school were purposely included in the study

Table 1: Distribution of Respondents

Respondents	Frequency
Teachers with HI	3
Form one students with HI	57

Form two students with HI	83
Total	143

3.6 Methods of Data Collection

Focus group discussions, interview guide and observation were the qualitative data collection methods used in this study. For the case of focus group discussion and interview with students and teachers with HI, the discussions were assisted by a sign language interpreter. For observation, data was collected in the classroom set up where students with HI were found. The researcher observed: teachers class control, teacher's attention to the individual students with HI, teachers' knowledge of sign language, student's concentration in class, and student's participation during lessons.

3.7 Data Analysis

Data were analyzed through Thematic analysis. The following themes were observed: Barriers to social participation in school; homes; churches; mosques; hospitals and the market places. Thematic Analysis Approach was found relevant to this study due to its ability to give personal feelings from the respondents.

4.0 Findings and discussion

4.1 Demographic Characteristics of the Respondents

The results in Table 2 indicate that 71 (51%) of students with HI from the sample were females and 69 (49%) of students with HI from the sample were males. This implies that this study provided a chance for all students with HI to participate in the study. Also, from the results, it shows that female students with HI are slightly more than male students.

Table 2: Form One Students Sex (n=140)

Sex	Frequency	Percentage
Female	71	50.7
Male	69	49.3
Total	140	100

The age group of respondents in Table 3 indicates that 20 (14.3%) of students with HI were aged between 10-14 years. 104 (74.2%) of students with HI were aged between 15-19 years. 16 (11.4%) of students with HI were above 20 years.

This implies that the majority of female and male students with HI were aged between 15-19 years

Table 3: Students Age (n= 140)

Age	Frequency	Percentage
Female		
10-14 years	20	14.3
15-19 years	104	74.2
Above 20 years	16	11.4
Total	140	100

Results in Table 4 shows teachers' sex. Results shows that male teachers were 2 (66.7%) and female teacher was 1 (33.3). These results show that the school have more male teachers than female teachers with HI. These results may suggest that males with HI get education opportunity than females with HI.

Table 4: Teachers Sex (n=3)

Sex	Frequency	Percentage
Female	1	33.3
Male	2	66.7
Total	3	100

Findings in Table 5 shows that a teacher who participated in the study with 25-29 years was (1) teacher, 30-34 years was (1) teacher, and above 35 years was (1) teacher. This implies that, teachers with HI with different ages participated. Also,

Table 5 indicates that 1(33.3%) teacher has teaching experience of 0-5 years, while 2 (66.7%) teachers have 5-10 years of teaching experience.

Table 5 Teachers Age and Working Experience (n=3)

Age	Frequency	Percentage
25-29 years	1	33.3
30-34 years	1	33.3
Above 35 years	1	33.3
Total	3	100
Working Experience		
0-5 years	1	
5-10 years	2	66.7
Total	3	100

Results in Table 6 shows that teachers with hearing Impairment teach English, Civics, Biology, Chemistry and Physics. These results imply that if there are other subjects for form one and form two students with hearing impairment, these subjects are taught by teachers who are not hearing impaired and most likely they do not have sign language skills.

Table 6: Information of Teachers Subject (n=3)

Subject Area	Frequency	Percentage
English/Civics	1	33.3
Biology/Chemistry	1	33.3
Physics	1	33.3
Total	3	100

4.2 Barriers to Social Participation

Different perceptions and opinion were exhibited on the barriers that occur in places such as schools, at home, in churches, mosques, hospitals, and in market places.

4.2.1 Barriers to Social Participation in school

The use of sign language is very crucial in teaching and learning for students with HI and it is through it that communication and teaching can occur between the teacher and students. During classroom observation, the researcher observed that there was communication barrier when a student with HI asked a question and the teacher could not respond. The findings from the classroom observations also confirmed that lack of participation for students with HI impairment is also a result of the shortage of teachers with knowledge of sign language. During focus group discussion respondents had this to share;

“We need trained sign language interpreter in classrooms in order to follow up and participate in our studies like other students. We also cannot participate or contribute in class because most of us lack adequate knowledge of standard sign language which was supposed to be taught to us while in primary school.” (Form 1 FGDs of 2nd July, 2022).

These findings are in line with the findings of the study by Stinson and Walter, (2017) who found that if students are not given the basic knowledge of sign language can negatively affect their subsequent knowledge dissemination, classroom participation and a sense of academic integration.

Similarly, the lack of collaboration was also reported during Focus Group Discussion respondents asserted that;

“In reality, there’s no collaboration between us with HI and students who hear. They do not want to use signs in communicating with us claiming that they are tired” (Form 1 of FGDs 2nd July, 2022).

It was also found that students with HI a remain behind and lacked focus on learning.

“Some of our teachers lack the patience to take us through the learning process. Generally, our condition makes most of us slow learners. Teachers should be trained on how to handle us by observing tolerance and giving instructions for better understanding where necessary” (FGDsof 9th July, 2022)

4.2.2 Barriers to Social Participation at Home

Findings shows that parents and siblings do not have knowledge of sign language as a result of communication barrierwith their HI children while at home. This was pointed out by participants during Focus Group discussion that;

“Our parents and siblings should learn at least a basic sign language to be able to communicate with us. Some parents, siblings and other members in the community do not understand our condition, to the extent of saying that we are cursed” (FGD of 2nd July 2022).

Findings of this study support the findings of the study by Kengne (2021) who reported that individuals with HI are often marginalized and discriminated against both by their own families and society at large.

4.2.3 Barriers to Social Participation in the Church and Mosques

There are no sign language interpreters in most of houses of worship to assist the students with HI to follow the sermons. This was raised during focus group discussion respondents narrated that;

“Most of the time we find it difficult to attend church services or mosques, because we cannot follow the teaching due to lack of sign language interpreters”(FGDs of 9th July 2022).

4.2.1.4 Barriers to Social Participation in Hospitals and the Market Places

Challenges faced by students with hearing impairment were reported when visiting healthcare facilities and market places. Lack of knowledge of sign language in healthcare workers was noted as a reason for Poor communication .During Focus Group Discussion, respondents had this to say;

“Our main problem in accessing healthcare has been communication. We fail to express ourselves to healthcare workers. Also, healthcare service providers fail to ask us questions to get relevant information because most of them do not know sign language.” (Form 1, FGDs of 2nd July 2022).

From the findings it is true that most of healthcare staff in Tanzania do not know sign language and that makes it difficult for Students with hearing impairment to express themselves to medical practitioners.

4.2.1.5 The Effects of the Barriers to Social Participation for Secondary School Students with HI.

Poor communication was reported as one of the effects of the barriers to social participation for Secondary School Students with HI.

One respondent had this to say;

“poor communication between us with HI and teachers leads to miscommunication. In some instances, we are not given enough time

to answer and ask questions during lessons which negatively affects our learning process” (Form 1 FGDs of 2nd July, 2022).

In addition, during interview, a teacher (T2) had this to share;

“Poor communication in class results in failure to attain good marks in their examinations hence this led to poor morale and low self-esteem for student with HI and therefore affect their learning process. (Interview 16th July 2022).

It was also found that inability to engage the deaf child in the family leads to the child looking for socialization elsewhere. Communication difficulties and lack of acceptance within families and societies and poor attitude of the society towards individuals with HI does not encourage their participation and involvement in social activities as they are often discriminated against.

“We suffer from a feeling of being discriminated and isolated because we cannot freely interact with our parents and siblings and members of our communities while at home” (FGD, 2nd July 2022).

Additionally, during interview, a teacher said that;

“It is not a secret that children with HI are not embraced both by their parents and community members. parents confine them indoors. This affects them psychologically and leading to poor performance in class” (Personal interview, of 16th July 2022)

It was found that, Students with HI feel isolated and discriminated because they cannot get any information on what is being taught or said in most of the worshipping places due to lack of sign language interpreters as a result, it makes them lose interest in going to church or mosques.

It was also found that due to the absence of sign language interpreters in healthcare facilities, results into a breakdown in communication and make it difficult for them to clearly express themselves to the medical practitioners who most of them do not know sign language. These findings are in line with the findings of the study Khan & Manderson (2014) who found that persons with HI often face barriers as almost all places

5.0 Conclusions and Recommendations

From the findings it is therefore concluded that, most children with HI are born from parents who don't have knowledge of sign language and also surrounded by community members who do not know the sign language therefore causing challenges in parenting and interactions which affects the family structure in terms of communication and social integrations.

Therefore, it is recommended that, there is need for Government of Tanzania to raise awareness amongst the general population about Hearing Impairment persons. Moreover, sign language should be introduced from Primary Schools to Tertiary Learning Institutions in Tanzania and sign language interpreters should be trained and placed in all social services. For example, community services like the churches and schools should make the additional effort to recruit sign language interpreters to facilitate the participation of persons with Hearing Impairment.

REFERENCES

Act of (2010). *The Persons with Disabilities*. <https://www.tanzania.go.tz>. site visited on 14/03/2022.

- Ainscow, B. (2015). *Equalizing opportunities, Minimizing Oppression: A Critical Review of Anti-Discriminatory Policies in Health and Social Welfare*. Florence: Routledge.
- Anuar, H. (2017). *Mechanical properties and dynamic mechanical analysis*. [<http://www.statssa.gov.za/isi2009/ScientificProgramme/IPMS/1129.pdf>] Site visited on 14/05/2022.
- Bech, G. (2015). Community participation, supports, and barriers of school-age children with and without disabilities. *Arch Phys Med Rehabilitation* 94:315–23.
- De Clerk G. A. (2016) Fostering Deaf People's Empowerment: the Cameroonian deaf community and epistemological equity. *Third World Q* 32:1419–35.
- Disability and Work: The United Republic of Tanzania's Workplace Policies
- Harpstead, G., Erik, H., Myers, G., Brad, T. and Alevan, R. (2013). Theories-based Inclusive Education. *Education Quarterly Practices* 2 (2): 408 - 414.
- Hyde, M., & Power, D. (2013). Inclusion of Deaf Students: An Examination of Definitions of Inclusion in Relation to Findings of a Recent Australian Study of Deaf Students in Regular Classes. *Deafness and Education International*, 6.82-99. doi: 10.1002/dei.169
- International Labor Organization, ILO (2004). Challenges faced by Teachers with Hearing Impairment. *Journal of Education* 5(11), 58-67.
- Joshua Project, (2021). Deaf in Tanzania [<https://Joshua.project.net/people/groups/19007/TZ>] site visited on 24/09/2021.
- Kathy, J.B (2016). Deafness in Sub-Saharan Africa. *Am Ann Deaf* 148:18–24.
- Kengne, H. R. (2021). The etiology of childhood deafness in Sierra Leone. *Sierra Leone Med Dental Assoc J* 6:31–45.
- Kennedy, M. and Fisher, E. (2011). Models of Disability in the labelling and Attitudinal Discourse in Ghana. *Disability & Society* 17 (7): 769-777.
- Khan, N. B. & Manderson, D.F. (2014). Deafness in Sub-Saharan Africa *American Annals of the Deaf*, 148(1), 18-24.
- King, G. (2006). *Children's Assessment of Participation and Enjoyment (CAPE) and Preferences for Activities of Children (PAC)*. San Antonio, TX: Harcourt Assessment

- Kiyaga, S. & Moore's, F. (2013). Challenges faced by Students with Hearing Impairment in early childhood educational centers in Zimbabwe as
- Lang,H(2013). Qualitative methods for health research. London: Sage Publications Ltd. visited on 19/02/2022.
- MoEST. (2022). *The Persons with Disabilities*. <https://www.tanzania.go.tz>
- Morris, C. (2014). *Ethnography and Education*. Cardiff University, United Kingdom
- Mulrow, W. (2019). Phonological processing, grammar, and sentence comprehension in older and younger generations of Swedish children with cochlear implants. *Autism and Developmental Language Impairments* 2: 1–14.
- Ndei, N. (2008). Academic performance of learners with hearing impairments in inclusive primary school, Kasarani Division Nairobi-Kenya. Dissertation for Award of Degree of Special Education at Kampala International University, Kampala, Uganda.
- O'Shea, J. (2008). Translating from one language to another. [<http://sru.soc.surrey.ac.Uk/SRU31.html>]site visited on 19/05/2022.
- Odom, S. L. (2000). Preschool inclusion: What we know and where we go from here. *Topics in Early Childhood Special Education*, 20, 20–27
- Okyere, D.A. & Addo, M.J. (2019). Deaf Culture in Ghana. In C. Erring, Johnson, (Edited by Smith, R.C. and Snider, B.C), Gallaudet: University Press. .
- Oliver, M. (1996). *Understanding Disability: From Theory to Practice*. New York: Palgrave Macmillan.
- Opoku, (2019). Perceptions and experiences of persons with disabilities on access to education in Buea Municipality, Cameroon. *International Journal of Complement Alternative Medication*. 2:44.
- Oyugi, N. (2020). Action Plan for Inclusive Education of Children and Youth with Disabilities. *South African Journal of Education* 23(2), 135-138.
- Radhika, G. (2015). Convention on Rights of Persons with Disabilities Retrieved from <http://www.com>. Ministry of education, (2016).
- Rahiem M.D. (2021). Remaining Motivated Despite the Limitation. UniversityStudents Learning Propensity during the COVID-19 Pandemic. *Children and Your Services Review*, 120,105802.
- Raine, C. (2013). Cochlear implants in the United Kingdom: awareness and utilization. *Cochlear Implants International*, 14(sup1), S32-S37.

- Schick, E. (2017). Premarital screening and genetic counseling program: studies from an endogamous population. *Int J Appl Basic Med Res* 9:20-6. Doi 10.4103/ijabmr.IJABMR_42_18.
- Stinson, I. (2000). *Inner Lives of Deaf Children: Interviews and Analysis*. Washington DC: Gallaudet University Press.
- Sundeen, A. (2017). *Health Promotion effectiveness, efficiency and equity* (3rd ed.). Cheltenham UK: Nelson Thornes Ltd.
- Tanzania Disability Survey, (2008) National Bureau of Statistics: {<http://www.statssa.gov.za/isi2009/ScientificProgramme/IPMS/1129.pdf> Summary: <http://www.nbs.go.tz/disabilities/summary/disability/results.pdf>}. Site visited 12/05/2022.
- UNESCO, (2016). *Barriers of Inclusive Education for Children with Disability*. *Rays of hope*, 7(4), 16-17.
- UNICEF Report (1999). *The State of The World's Children*. [www.unicef.org/sowc99/UN] site visited on 10/03/2022.
- United Nations. (2015). *The Sustainable Development Goals Report*. United Nations, 72. <https://doi.org/978-92-1-101320-7>
- URT, (2014) *Education and Training Policy ETP*. Dar es Salaam: Ministry of Education and Culture.
- WHO (2021). Deafness [<https://www.who.int/news-room/facts-in-pictures/detail/deafness>] site visited on 24/09/2021.
- World Health Organization & International Telecommunication Union. (2019). *Safe listening devices and systems: a WHO-ITU standard*. World Health Organization. <https://apps.who.int/iris/handle/10665/280085>. License: CC BY-NC-SA 3.0 IGO
- Ziadat, H.A. and Alrhmeleh, A.A (2020). The learning social and economic challenges facing the deaf and hearing-impaired individuals. *Cypriot Journal of Educational Sciences* 15, (5): 976-988.