Challenges of Inclusion of Primary School Pupils with Hearing Impairment in Physical Activities in Tanzania

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Abstract

Pupils with hearing impairment are not adequately included in physical activities in primary school globally but more so in the global South. This study was conducted in a selected primary school in Tanzania. It is a qualitative study that employed an embedded single case design to gain in-depth understanding of the study. The study was guided by Bronfenbrenner system theory (1979). The sample comprised thirty eight purposively selected participants. Data were collected through interview, documentary review, and observation schedule methods. The data were thematically analysed. Findings revealed specific and general challenges such as lack of sign language skills used during physical activity, poor aesthetic attributes, inaccessible physical activity facilities and equipment, stigmatization, unsafe play facilities and lack of physical activity programme. The results revealed that the school was insufficiently equipped for inclusion. Based on the findings of this study, it is recommended that to solve the revealed challenges schools should provide a conducive environment for inclusion of pupils with hearing impairment in physical activities.

***Keywords*:** *deaf, hearing impairment, inclusion, school environment*

Introduction

Inclusion of pupils with disability in physical activity refers to a range of modifications in content, approaches, structures and strategies to cover all children (UNESCO, 2005). The most common type of disability reported in Tanzania was difficulty in seeing, walking, hearing, remembering, self-care, and albinism (National Bureau of Statistics, 2014). The severity of a hearing impairment is measured using decibels (dB) categorized into *mild* hearing impairment with minimum sound that can be heard between 25 and 40 dB, *moderate* (40 and 70 dB), *severe* (70 and 95 dB) and *profound* hearing impairment where the minimum sound heard is 95 dB and over (World Health Organization, 2012). Hearing loss can be caused by a number of factors including; heredity (genetics), ageing, loud sound exposure, diseases

and infections, trauma (accidents), or ototoxic drugs (drugs and chemicals that are poisonous to auditory structures (Sohal, Moshy, Owibingire & Shuaibu, 2020). In this study the profound hearing impairment / Deaf pupils was investigated.

The World Health Organization (2018) declared that all pupils regardless of ability are supposed to be involved in physical activities 60 minutes or more on daily basis. Regular involvement in physical activities improves pupils' physiological and physical health (Ness, et al., 2007). Participation in physical activities also increases self-esteem, and reduces anxiety and stress (Barboza, Ramos, Abreu & Castro, 2019). According to the USA Center for Disease Control and Prevention (CDC, 2011) developing an overall physically active lifestyle at an early age may decrease one's chances of developing health-related problems.

In case of pupils with hearing impairment, physical activity also has other benefits, on social inclusion such as building friendships and enhancing social skills (Barboza et al., 2019). The inclusion of pupils with hearing impairment could address their balance deficit (Ebrahimi, Movallali, Jamshidi, Rahgozar & Haghgoo, 2017) with modified strategies for instruction of the activities and communication (Barboza et al., 2019) to make every pupil with hearing impairment enjoy the benefits associated with physical activity.

Schools are an important environment for promoting quality physical activities (Hills, Dengel & Lubans, 2015). Inclusion of pupils with hearing impairment in physical activity was affected by everything in their surrounding environment through interactions in each system as Bronfenbrenner's (1979) theory stipulated. The school has the potential to influence the physical activity behaviours of pupils through various opportunities that occur during recess periods and classroom physical activity breaks (Beets et al., 2016). Baquet, Aucouturier, Gamelin, and Berthoin (2018) study demonstrated that playground markings intervention had a positive effect on moderate and vigorous physical activity (MVPA).

Schools can help pupils with hearing impairment (Asogwa et al., 2020) meet health recommendations by creating an inclusive culture for physical activity health behaviour. Asogwa et al. ascertain that through sustained school engagement, hearing impaired students could overcome their postural deficiencies as they would have a greater opportunity to participate in healthy and planned physical activities during physical education classes. Therefore, school is essential for providing opportunity for physical activities for primary school pupils to be physically active throughout the school day. Studies have shown factors such as accessibility of facilities, opportunity for activity, weather, safety, and aesthetic attributes influence physical activity behaviour (Maddison et al., 2009). These factors require modification to fit the needs of pupils with hearing impairment.

Despite the importance of schools in providing the avenues for pupils to participate in physical activities, in Tanzania, there has been paucity of studies concerning challenges that hinder the inclusion of pupils with hearing impairment in physical activities. Schools may pose challenges that hinder the inclusion of pupils with hearing impairment. This raised the question, what challenges hinder the inclusion of pupils with hearing impairment in primary school? Why is the sign language skill insufficient? Why are the teachers and fellow pupils unable to communicate in sign language? What has the school done or will do to improve the situation? This study aimed at exploring the challenges that hinder the inclusion of pupils with hearing impairment in physical activities.

Research Methodology

This study was guided by interpretivism paradigm due to the nature of inclusion in physical activity as both implicit knowledge and a personal construct. The study utilised qualitative research approach informed by embedded single case study design (Yin, 2018). The data were collected from multiple sources of instruments such as interview, observation schedule and documentary review. The researcher collected in-depth and detailed information on challenges that hindered pupils with hearing impairment to participate in physical activities.

Study Area

The study was carried out in one inclusive primary school located in Dar es Salaam region, Tanzania. This school was established in 1992, later on a hearing impairment unit was started in 2004 with 38(15 boys, 23 girls) pupils with hearing impairment after being shifted from Lutherani Evangelical Church; handled with two special education teachers employed by the Comprehensive Community Based Rehabilitation Tanzania (CCBRT). During data collection the school had 71(33 boys, 38 girls) pupils with hearing impairment, 710(353 boys, 357 girls) hearing pupils. The school had 13(4 Males, 9 Female) teachers trained in Tanzania Sign Language with the following qualifications; 4(1 Male, 3 Female) certificates, 3(2 Male, 1 Female) diploma, and 6(1 Male, 5 Female) bachelor degree from Special Education Colleges in Tanzania. The school had one football court and limited physical activity equipment.

Participants

The participants were 38. They comprised 22 (9 girls & 13 boys) pupils with hearing impairment, the head teacher, the head of special education unit; the district special education officer, the district culture and sports education officer, 4 physical education teachers and 8 parents of pupils with hearing impairment. The selected pupils with hearing impairment were in grade five and six. They were selected because they had acquired Tanzania Sign Language for communication during

physical activity in primary school. The participants filled a consent form and the pupils with hearing impairment assented to participate in the study because they were minors. The participants were represented by a combination of English alphabet capital letters as follows; head teacher (HT), head of special needs education unit (HSNET), physical education teachers (PET1, PET2, PET3, & PET4), district special education officer (DSEO), district culture and sports education officer (DCSEO), parents (P1, P2 ... P8), and pupils with hearing impairment (PP1, PP2...PP22).

Data Collection

Data were collected through face-to-face interviews, document analysis, and observation schedule. Face-to-face interviews were conducted to all participants. Two sign language interpreters with a profession in hearing impairment used to sign and interpret the conversations between the researcher and pupils with hearing impairment. The time for each interview session lasted between 20 minutes to 60 minutes. The researcher audio and video taped the interviewed to capture sign language of the pupils with hearing impairment and the sign language interpreter at the same time to capture the challenges facing the inclusion of pupils with hearing impairment in physical activity in primary schools.

Observation schedule was based on physical activity outdoor facilities, physical activity equipment, and physical activity practice in school. During physical activity practices, the researcher identified the main features in the playing session in relation to the research questions. The researcher also observed the kind of instructional strategies that the teachers used, how the pupils with hearing impairment were included and determined the teacher's knowledge of the particular physical activity. After the recording process, the recorded video clips were stored in a compact disk. Interview with the teacher and the pupils with hearing impairment were conducted by the help of an interview guide.

> Furthermore, documents such as education policy, disability policy, and physical education school timetable, were analysed to examine the aspect of the inclusion of pupils with hearing impairment in physical activities.

Data Analysis

This study used thematic analysis procedures to analyse data that allowed for identifying, analysing and reporting patterns (themes) within data as they emerged (Yin, 2018) from the participants' perspectives during investigation through six steps of thematic analysis strategies (Creswell, 2009). Thematic analysis also allowed cross-case analysis and comparison of data from different case studies. Themes and sub-themes were extracted from participants' responses during the interview sessions, observation, and documents analysis. The emerging themes

were grouped into general and specific challenges that faced the inclusion of the pupils with hearing impairment in physical activities in schools.

First, the researcher transcribed raw data, read and re-read the raw data to obtain meaning or the initial idea from the participants. The collected data in the form of field notes were coded and organized into themes according to the sources (interviews, observation, and documents analysis). The second step involved conceptualising the required responses to the main question of the study to remain focused on the main themes. The third step involved creating codes by assigning those features that were used to identify and categorise the themes from the raw data into chunks or segments of text before bringing meaning to information. In the fourth step, the researcher established patterns among themes. The fifth step focused on descriptions and representation of themes, and in the sixth step the researcher extracted meaning driven from the themes based on her interpretations.

The two main themes emerged were specific and general challenges of inclusion in physical activities. The sub-themes were communication barrier to sign language used during physical activity, stigmatization, and poor aesthetics attributes, inaccessible physical activity and equipment for inclusion in physical activity, unsafe play facilities, and lack of physical activity programmes for inclusion of pupils with hearing impairment.

Findings and Discussion

The studied primary school revealed the significant challenges that hindered the inclusion of pupils with hearing impairment in physical activities. The identified challenges were specific and general barriers to pupils with hearing impairment. The specific barriers were physical education, teachers' lack of communication skills on instruction for curriculum modification or accommodation for inclusion, and stigmatization of the pupils with hearing impairment in physical activity. These findings are presented and discussed in relation to the previous studies in the area of inclusion of pupils with hearing impairment in physical activity in primary schools.

Specific Barriers for Inclusion of Pupils with Hearing Impairment in Physical Activity

Interviews with pupils with hearing impairment and physical education teachers revealed communication barriers and stigmatization of pupils with hearing impairment during physical activities. The two specific barriers can be explored as follows:

Communication Barrier: Sign Language used during Physical Activity

The title suggests that sign language is used during the physical activity, and sign language is the communication barrier. Findings from an interview with one of the pupils with hearing impairment revealed that there was sign language barrier between pupils with hearing impairment and other pupils and teachers without disabilities. The finding implies that during participation in physical activity there was communication break down due to lack of sign language skills. The findings suggest that without sign language skills amongst hearing pupils, the inclusion of pupils with hearing impairment could be difficult due to communication barriers. The interviewed pupil said that:

> I like to play with hearing pupils, but we fail to communicate. Other pupils, who have no hearing impairment do not understand sign language. So, when I use sign language to them they cannot get the message. Likewise, when they tell me about anything, I cannot understand them (PP_1).

The physical education teacher (PE) confirmed the communication barrier, due to insufficient sign language skills for physical activity tactics, which posed communication barriers with pupils with hearing impairment during physical activity. The PE teacher had this to say:

> At this school, majority of teachers and pupils lack sign language skills. This makes it hard to communicate between pupils and teachers and among pupils themselves. So, during Physical Education classes, pupils with hearing impairment do not actively participate, they just remain passive observers. (PET_1).

Also, the physical education (PE) teacher revealed the strategy that could help to ensure the inclusion of pupils with hearing impairment in physical activity in primary school. The physical education teacher had this to suggest:

> I think sign language for sports skills must be taught in this school. This will help to ensure that all pupils interact during physical activity and even during classroom instruction (PET_1).

The claim above indicates that there was a lack of sign language skills among hearing pupils and teachers in school. The findings suggest insufficient sign language skill limited communication during in physical activities. Consequently, physical education (PE) teachers failed to find solutions to the problem and to include the pupils with hearing impairment in a physical activity at school.

In the same vein, parents of the pupils with hearing impairment revealed that they were unable to communicate with pupils with hearing impairment because they had no knowledge of sign language to support their children. The finding indicated that parents of pupils with hearing impairment depended on the use of sign language interpreters to communicate with children with hearing impairment. Furthermore, the finding implies that communication barriers hindered the parents of pupils with hearing impairment to support the pupils with hearing impairment to participate in physical activities. One of the parents of pupils with hearing impairment commented:

> I am the mother of one of the pupils with hearing impairment. But, up to this time, I don't know the sign language exactly in order to support my child even during her participation in plays. I only depend on the assistance of sign language teacher and interpreter (P_2).

Furthermore, parents of pupils with hearing impairment revealed that pupils with hearing impairment were separated from hearing pupils in small groups among themselves and communicated using sign language during playing football. This implies that communication barrier led pupils with hearing impairment to be separated from pupils without hearing impairment. Such division was contrary to the aims of inclusion, which requires that all children regardless of their ability or disability participate together in physical activities. One of the parents of pupils with hearing impairment claimed:

> Pupils with hearing impairment understand each other when they communicate amongst themselves. But, they cannot understand instructions or explanation from hearing pupils, unless sign language is used so, what we do is to divide pupils; those with hearing impairment are grouped among themselves and those without hearing impairment also form their own groups. (P_1).

Also, the findings revealed the approach they used to include some of the pupils with hearing impairment in physical activities in a particular primary school. This implies that pupils with hearing impairment were taught and trained separate from the hearing pupils, then in some sessions they included some of the pupils in physical activities. One of the participants explained:

> To include the pupils with hearing impairment, first they require their physical activity lessons separately because of sign language issues; even though, later we included some of them. For instance, in football game we selected some pupils with hearing impairment and some hearing pupils to play together at the football pitch. This is how we included them. (HT).

These findings suggest that teachers and other hearing pupils should be trained for sign language skills to acquire knowledge on how to include pupils with hearing impairment in physical activity in primary school. One of the participants responded:

> The challenge for schools with pupils with hearing impairment is that there are few pupils with hearing impairment, therefore, in team games they are included with hearing pupils; to manage them becomes a problem during physical activities unless there are people with sign language knowledge to communicate…Sign language because if you are sports professional and you don't know the sign language it is a problem (HT).

The findings mean that when the communication barrier is solved, inclusion of pupils with hearing disability in physical activities will be real and every pupil will enjoy their rights to play and will have equal opportunity to physical activities (UNESCO, 1994). One of the participants suggested that:

> It's better for the school to introduce a programme for sign language to all teachers first, then all pupils and parents, because we usually lose instructions and support for these pupils with hearing impairment when at home or out from us teachers. The programme will be conducted for two hours within two working days. I think this will help (HT).

Generally, this study shows that insufficient sign language skills caused communication barrier to be one of the big challenges for inclusion of pupils with hearing impairment in physical activities. Teachers and fellow pupils were unable to communicate with pupils with hearing impairment because of lack of sign language skills. The sign language skills for proper communication require physical activity teachers to create sign language training programmes for others, like pupils with hearing impairment, other teachers, parents, head teachers, developers of physical activity instructional materials and educational policy makers to interact within and between the schools for its success for inclusion in physical activity.

These findings are in line with those of Barboza et al (2019) who declared the challenges need to be overcome by adapting physical education for deaf students. Lieberman (2011) described that communication between hearing and deaf people remains a major problem until more hearing people learn sign language. Martin, Shapiro, and Prokesova (2013) noted that children with hearing impairment may experience less time outside as a result of few friends who know sign language. Also, proper inclusion of pupils with hearing impairment relies on training on sign language to all (Remmel & Peters, 2009). Kurková, Válková and Scheetz (2011) suggested that if adaptations to communication (especially sign language) are made in these integrated settings, the ability of deaf athletes to participate in

physical activities settings will increase. This calls for the need to train parents, teachers and pupils on sign language.

Stigmatization of the Pupils with Disability in Physical Education

Findings from observation indicated that pupils with hearing impairment were playing amongst themselves in small groups without interacting with other pupils. Also, the respondents commented that pupils with hearing impairment struggled to interact with hearing peers during physical activities. One of the participants claimed:

> Pupils with hearing impairment experience a lot of stigmatization from their fellow students, who have no disability. Other pupils (without hearing impairment) perceive pupils with hearing impairment negatively. Some label them as stubborn pupils and as such they avoid interacting with them (PET_2).

Findings from physical education teachers imply that pupils with hearing impairment faced hard time from their counterparts, who had no disability. This indicates that pupils with hearing impairment were stigmatised, thus hindering their inclusion in physical activity with their fellow students, who had no disability. This was further illustrated with another PE teacher, who said:

> Usually pupils with hearing impairment are offensive and rude towards other pupils (without hearing impairment) during physical activities. This leads them to be avoided with hearing peers. That's why deaf pupils play alone (PET_1).

This study revealed that some teachers and pupils without hearing impairment had negative perception of pupils with hearing impairment. They perceived them as stubborn, rude and arrogant. The study from Kurková (2009) described the fears felt by pupils with hearing loss regarding misunderstanding in communication, delayed reactions when beginning a new activity and the fears surrounding the potential for breaking hearing aids when participating in contact sports in physical education classes. Also, Tsou, Li, Eichengreen, Frijns and Rieffe (2021) cautioned that deaf and hard of hearing children in less linguistically accessible environments may not have adequate knowledge for appropriately expressing negative emotions socially. The schools should address and avoid stigmatizing the pupils with hearing impairment through including them in physical activities.

General Barriers for Inclusion in Physical Activity

Interview and observation data provided detailed information on the challenges that hindered the inclusion of pupils in physical activity in schools. The participants

and physical activity playground explored four general barriers to inclusion in physical activity in schools. These are poor aesthetic attributes, inaccessible physical activity facilities and equipment, unsafe play facilities, and lack of physical activity programmes.

Poor Aesthetic Attributes for Inclusion in Physical Activity

The school environment includes the physical environment, instructional environment, student well-being, and discipline practices. Aesthetic attributes provide the school environment with appropriate design; play facilities and equipment for inclusion of pupils with hearing impairment. Observations of the sports facilities, equipment and supplies revealed the damaged balls. Also, the pupils with hearing impairment revealed the physical activity facilities and equipment used in school were not suitable for physical activities sessions. One of the participants claimed:

> The school lacks sport equipment and supplies such as balls and shoes. The balls are few and those few available are damaged. So, this makes it difficult for us to participate in physical activities during recess (PP_{11}).

Also, it was observed the presence of the damaged balls limited the opportunity for inclusion in football games. The schools should ensure availability of sport facilities, equipment and supplies. Furthermore, pupils were observed playing with their school uniforms. One of the pupils said:

> The school has neither balls nor jerseys, but the teacher teaches us while wearing school uniforms. So, at times we fail to participate in physical activities because we fear we may make our uniforms dirty (PP_{9}).

This study disclosed that the school lacked aesthetic attributes, it was observed that the football court was accessible but not clearly marked and signed for inclusion of pupils with hearing impairment to visually alert users. The finding implies that the physical activity environment was not aesthetic for the pupils to develop interests to participate in physical activities. The findings suggest that lack of aesthetic attributes discouraged pupils with hearing impairment to participate in physical activities. The playground provides a unique setting for children to engage in the play process; whether be it a traditional, an adventure or creative playground. The previous study realized that aesthetic attributes can be connected with all the aspects that make physical activity attractive, interesting and worthwhile (Tainio, 2019) including the sports equipment, facilities and attires. WHO (2018) dictates school environment to ensure physical activity design is consistent with the principles of safe, universal, age-friendly and equitable access with a priority being to reduce inequalities. Designed playgrounds are significantly safer because the

notorious unsafe features are excluded and full attention is paid to the installation of adequate safety surfaces. In some aspects of school buildings, their layout and furniture may influence children's physical activity and pedagogical approaches (Tainio, 2019). The physical activity environment in schools was not promising specifically and generally for inclusion due to a number of explored challenges (Kazungu, 2016). Bantham, Ross, Sebastião and Hall (2021) argued that access to facilities attractiveness of one's neighborhood plays an important role in whether or not people engage in physical activity.

Inaccessible Physical Activity Facilities & Equipment for Inclusion

Physical activity facilities and equipment are important in facilitating pupils' participation in physical activity in school. The findings indicated that there was one football court, which was destroyed with rain erosion and consisted of heaps of soil scattered. Therefore, it was not only unsuitable for pupils with hearing impairment but also to other pupils. This limited the pupils to participate in physical activity at school. In case of pupils with hearing impairment, the pitch had no marking, signs, posters, and other relevant graphic instructions for their inclusion in physical activities. This finding calls for the renovation of the physical activity facility and necessary design for pupils with hearing impairment. The above finding was supported by one parent, who reported the same that the football ground was not used for sports because it was damaged and full of holes:

> It has taken a long time without renovating the only pitch the school has. For more than three years now, the school football ground was destroyed by rain and measures to maintain it have not been taken. So, we advised the school management not to allow pupils with special needs to use that pitch as it can endanger them (P_3).

The findings portray that the physical activity environment was inaccessible and unsafe for conducting any physical activities. Because of this, it limited pupils with hearing impairment to participate in sports. The presence of holes and ditches in the playground could cause injury to pupils.

Another participant also lamented on the quality of sports facilities as he claimed:

> There is a serious problem regarding the quality of playgrounds and equipment. The pitches are always full of mud and holes during rainy season and during dry season the holes remain unturned. Moreover, there is no specific equipment to help pupils with disabilities such as those with hearing impairment. So, in most cases, pupils with hearing impairment just watch their fellow pupils with no disability playing (P_8).

The interview quotes above imply that there is a need to renovate the physical activity facilities and equipment. The available facilities in school are not user friendly for pupils with hearing impairment, other hearing pupils, and physical education (PE) teaching in general. The sports supplies such as flags, and playground sound proof were not designed to carter for the needs of pupils with hearing impairment. These findings are in agreement with the study conducted in Tanzania by Kazungu (2016) who disclosed that lack of enough and quality facilities and equipment in schools hamper the implementation of physical activity programmes in schools. With emphasis, Park, Zachary, Gittelsohn, Quinn, and Surkan (2020) revealed that levels of physical activity were strongly limited by a lack of recreational facilities in the neighborhood. Bantham et al (2021) argued that access to facilities (e.g., recreation/ fitness centres, parks) of one's neighborhood plays an important role in whether or not people use such spaces to engage in physical activity. Barboza et al (2019) concluded that the challenges facing pupils with hearing impairment need to be overcome. The finding calls for the school management to ensure that the playgrounds are marked, warning signs are indicated, and sign language symbols, pictures and posters are posted. This study suggests the school management to develop construction, renovation, and maintenance plan for physical activity facility and equipment that carter for inclusion of all pupils in school.

Unsafe Play Facilities for Inclusion in Physical Activity

Physical activity facilities are supposed to be secure to avoid interruptions from people in the community, which can likely endanger the pupils during physical activity session. However, it was observed that the physical activity facility was neither marked nor fenced. The findings imply that pupils with hearing impairment were prone to be injured as the sports facilities were unsafe for them to participate in physical activities. The sports facilities were not protected and there were no warning signs to prevent unwanted people from crossing. This gave opportunity for public use such as motor cyclists. Therefore, unsafe sports facility hindered the inclusion of pupils with hearing impairment in physical activities. The motor cyclists known as *boda-boda* were observed crossing in the sports facility that alert to endanger pupils with hearing impairment and damage the sports facility.

Unsafe play facilities limited inclusion in physical activities for both pupils with hearing impairment and other pupils in the studied primary school. Mabagala (2016) recommended on parents, the community, primary schools and society as a whole to create a conducive and safe environment for children to play in, which will help to develop their full potential in the context of Tanzania. Park et al (2020) revealed that levels of physical activity were strongly limited by neighborhood insecurity; they suggested that in an underserved neighborhood, individual barriers to physical activity were amplified by neighborhood-level factors like crime, socio-

economic inequalities. Bantham et al (2021) argued that access to facilities safety in one's neighborhood plays an important role in whether or not people engage in physical activity. Mabagala (2016) contended that an inclusive school should be safe and be built with collaborations of parents. The barriers that rose from interview, observation and documents analysis should be addressed to improve physical activity facilities and equipment management and its complications.

Lack of Physical Activity Programmes for Inclusion

In order for the pupils with hearing impairment to participate effectively in physical activities, the school management should have programmes that carter for the needs of all pupils. However, this study revealed that the surveyed school lacked a comprehensive programme of physical activity for inclusion of pupils with hearing impairment. This was reported by a physical education teacher, who had this to say:

> Inclusion is still a challenge. The school programmes are not inclusive. Although the school is inclusive, in practice the needs of pupils with disability including those with hearing impairment are not cared for. So, in many school activities children with hearing impairment remain observers, they don't get involved because the school programmes are not user friendly for them (PET_4).

Also, the primary school education curriculum revealed having two physical activity lessons to be conducted in the classroom; as well as outdoor activities which involved physical activity. This study implies that the school programme did not entail specific activities for pupils with hearing impairment. One of the documents indicated:

> The division of lessons in the classroom involved optional lessons, and out-of-class activities, which involve... sports and games. (Tanzania Institute of Education, 2019, pp. 19 & 20; DR-STT)

The study revealed that pupils with hearing impairment were participating in physical activities, despite having some challenges of having the proper football pitch used for football games and other sports activities at the selected primary school. One of the participants responded:

> Classes I and II, and III, and IV have a play time on Fridays. Teachers used to take them to the field; they compete with themselves and others. Some of them may be running, who is the first, the second; but there are also those playing football games although we are having challenges with the field (HT).

The findings call for supports from parents and teachers to empower the pupils with hearing impairment in physical activities. One of the participants suggested that:

> Teachers and parent should be front line to support and empower the pupils with hearing impairment in physical activities the same as how they support these pupils in other subjects, hence collaborations are needed for empowering these pupils with hearing impairment in the issues of physical activities (P1).

The study revealed the poor collaborations amongst parents, physical education teachers and the school physical activity programmes. This kept a boundary and restrictions of the inclusion during UMITASHUMTA competition seasons. The study calls for the school management to develop physical activities programme in order to carter for the needs of all children including those with hearing impairment. One of the participants claimed that:

> That's why pupils with hearing impairment lost their participation during UMITASHUMTA at the district level because the physical education teacher had no funding to accommodate to the rest of the competitions. Since the physical education teacher from the school was unable to be with our pupils with hearing impairment, they failed to communicate with other hearing physical education teachers in the camps because of lack of sign language skills. As a result, they ended at the district level back home (HT)

Bronfenbrenner's ecological system (1979) theory emphasizes the importance of interactions and interconnection between the system levels. The requirements for inclusion depend on the school management in collaboration with education policy directives (macrosystem) to allow physical activity programmes in schools through fulfilment of adapted physical activity teachers programmes to be effective (exosystem), and to upgrade physical education teachers for inclusive physical activities. This study revealed the lack of clear interaction between pupils with hearing impairment and others without hearing impairment.

Insufficient physical activity program in the studied primary school was identified. In this study, it was observed that the studied inclusive school had no specific programme designed to help pupils with hearing impairment to participate in physical activities. The findings concur with Chakraborty (2018) who opined that regular physical education programme cannot be sufficient to ensure that hearing impaired students are physically fit and have the fundamental motor skills required in participation in and enjoying various sports activities. Park et al (2020) realised that despite socio-economic inequalities within neighborhoods, participants showed resilience and made efforts to overcome social-environmental barriers to physical

activities. They also applied various coping strategies and received social support.

Conclusions and Recommendations

Based on the findings of this study, it can be concluded that in the context of Tanzania, inclusion in physical activity encounters general and specific challenges that hinder pupils with hearing impairment to participate and enjoy the benefits of inclusion. The findings revealed that challenges that existed at the studied school limited the inclusion of pupils with hearing impairment in physical activity. It is crucial to consider the accessibility of inclusion of pupils with hearing impairment in physical activity in primary schools.

To improve the inclusion of pupils with hearing impairment in physical activity in primary school, interactions amongst pupils with hearing impairment, physical education teachers, school management leaders and their parents is of paramount importance. Curriculum and education policy makers should realize the presence of specific and general physical activity challenges explored and consider them when improving the policies. This paper suggests that schools should allow open interaction between pupils with hearing impairment and different people in and outside the school environment. Also, a similar study should be conducted with a focus on physical activity intervention for pupils with hearing impairment in early childhood.

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