

Assessment of Non-Communicable Diseases Awareness Among Pupils with Hearing Impairment at Munali High School in Lusaka, Zambia

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Abstract Among the neglected population in NCD awareness is the population of people with hearing impairment or deaf. Little effort is made to ensure that people who are deaf are covered in these NCDs awareness programs. Hence this study aimed at assessing the NCDs awareness among people who are deaf in Zambia, particularly assessing the knowledge of NCDs risk factors, diagnosis and treatment. The study utilized a phenomenological study type with were 10 participants who were purposively sampled. 5 males and 5 females were chosen, 2 from Grade ten, 4 from Grade eleven and 4 from Grade twelve. These were chosen because of their ability to adequately read and understand English language. The study highlighted that among the many factors, the major factors were identified as; lack of communication between the health personnel and the deaf person (pupil), attitude (stigma) of the health personnel towards the person who are deaf (pupil), lack of health education in the school curriculum and lack of specific information on NCDs. Other identified factors were lack of regular health campaign within the school premises, lack of health materials on NCDs and poor organization of physical education. Some issues such as lack of communication between the health personnel and them, the attitude of the health personnel, lack of health education in the school curriculum and lack of specific information on NCDs were found to be the major cause of low awareness among the target group.

Keywords: Deaf, hearing impairment, Non communicable Diseases, Awareness, Pupils

1. Research Background

According to WHO, hypertension is a condition in which the blood vessels have persistently raised pressure. Hypertension can lead to a heart attack, an enlargement of the heart and eventually heart failure; it can also lead to kidney failure, blindness, and cognitive impairment. Most people with hypertension have no symptoms at all, many people with high blood pressure are not aware of their disease, and do not have access to treatments that could control their blood pressure and significantly reduce their risk of death and disability from heart disease and stroke. Complications from NCDs accounted for 38

million deaths worldwide in the year 2012. LMICs have the highest prevalence of raised blood pressure. In the WHO African region, more than 30% of adults in many countries are estimated to have high blood pressure and this proportion is increasing.

A study conducted in UK by Alan et al (2012) concluded that people who are deaf have poorer health than the general population. The study revealed that the adults who are deaf in the UK occupy poorer socioeconomic positions, have poorer literacy and have limited access to communicate through speech thus they have poor access to healthcare, lack awareness, underdiagnosed and undertreated of chronic conditions such as NCDs. It also highlighted that there are few data in the UK or worldwide concerning the health status of the deaf.

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Published online at <http://IJDS.ub.ac.id/>

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In 2000, a study in Zambia indicated that among the population, 47,745 people were either deaf or had hearing impairment. The latest statistics show that the Zambian population in 2018 was 17,609,178 and 136,000 were deaf or had hearing impairment. Deafness or hearing impairment affects many people in Zambia, it is important to assess the NCDs awareness among this population because hypertension is the largest cause of ill-health, premature mortality and disability in Zambia. Communication barriers in Zambian health care are a serious impediment for the deaf, affecting their access to health care. (Mulenga et al, 2016)

It is estimated that by 2025 over 1.5 billion people worldwide will have NCDs with two-thirds of people with NCDs living in economically developing countries with weak health systems. The complications of NCDs causes 9.4 million deaths each year, this is more than all the deaths from infectious diseases combined. 45% of these deaths are from heart diseases and 51% due to stroke. It is also estimated that 40% of deaths in people with diabetes are caused by increased high blood pressure and unawareness or lack of diagnosis. (Daniel et al, 2017)

Among the neglected population in NCD awareness is the population of people with hearing impairment or deaf. Little effort is made to ensure that people who are deaf are covered in these NCDs awareness programs. Schools such as Munali High School and Zambia Institute of Special Education where there is a number of people who are deaf are not included in such programs thus NCDs awareness among this minority group continues to be low countrywide. Most NCDs programs are delivered to communities in audio through community campaigns and radio programs thus limiting access to the deaf. People who are deaf with good sight and sense of feeling are not included in health workshops and seminars for NCDs; therefore, the awareness among the deaf community continues to be low in the country. Yet the deaf community can be reached through their organization Zambia National Association of the Deaf (ZNAD) headquartered in Kanyama residential area of Lusaka. Literate youths who are deaf can be educated and included in hypertension awareness campaigns to become NCDs ambassadors among the deaf population.

There is limited data available that indicates the awareness level of NCDs among people who are deaf in Zambia. Therefore, this research is important because it is aimed at increasing the knowledge in the public health field concerning NCDs awareness among the population of people who are deaf.

Therefore, the aim of this study is to assess the NCDs awareness among people who are deaf in Zambia, particularly assessing the knowledge of NCDs risk factors, diagnosis and treatment. In this paper, the word deaf or hearing impairment refers to people who were born with hearing disability or lost hearing ability during the early stage of life (5 years and below) and their first language is sign language.

2. Method

2.1 Research approach

This study involves a personal interaction with pupils with hearing disability to assess the awareness on Non-Communicable Diseases. Thus, this study was a qualitative study in nature which involved collecting data using questionnaires and an in-depth interview with the help of a trained sign language interpreter. The study utilized a phenomenological study type. Hence, the study aimed at providing some understanding of the existing knowledge, attitudes and practices of pupils who are deaf at Munali High School pertaining to NCDs awareness. The research location chosen for this study was Munali High School. This school consists of a large number of literate people with hearing disability and able-bodied people. This location was chosen because it consists of literate pupils who are deaf who are likely to read English language and understand the purpose of the study.

2.2 Sample size

The sample size for this study were 10 participants in order to increase the rigour of the study. Cormack (2000) revealed that for qualitative studies, a small sample should be used because of the in-depth nature of the study and the analysis of the data required. Creswell (2013) highlighted that in a phenomenological study design, the sample size range from 3 – 10 individuals. This study took into account the use of purposive sampling. This was achieved through purposively selecting the pupils in

order to increase the validity and reliability of the study and reduce biasness. This study included 10 participants, 5 males and 5 females, 2 from Grade ten, 4 from Grade eleven and 4 from Grade twelve. These were chosen by their ability to adequately read and understand English language.

2.3 Data collection techniques

The data collection techniques that was used in this study included; Questionnaire and in-depth interviews. Questionnaires will be provided to participants to be completed and in-depth interviews were conducted with the help of a sign language interpreter for clarification. The data was analysed through hand-coding the data, writing memos during the interviews that included a narrative in the final report. The winnow approach was used where there was focus on some of the data and disregarding some parts of it. The data was separated in themes as according to participants' responses and focusing on the common responses and basis of the research. Data was aggregated into a small number of themes, into five or seven themes (Creswell, 2013).

3. Results

This chapter presents an overview of the results from the thematic analysis interviews and questionnaires which attempted to answer the three specific objectives of the study; (1) To assess the awareness level of NCDs among the pupils who are deaf at Munali High School, (2) To explore the factors that affects the awareness level of NCDs among the pupils who are deaf and (3) To assess how many pupils who are deaf are reached by the current NCDs awareness programs.

The pupils were randomly selected by the researcher. The participants were given questionnaires to complete and the researcher conducted interviews with the help of a trained professional sign language interpreter for clarification on the research questions which the participants answered freely.

3.1 Emerging Themes from The Interview

Four themes were highlighted from the interviews following the three specific objectives of this study which are;

1. Lack of communication with the health personnel
2. Attitude/stigma of the health personnel
3. Lack of health education in the school curriculum
4. Lack of information on NCDs

3.2 The Prevalence of NCDS Awareness Among the Pupils

Munali high school has 80 pupils with hearing impairment/deaf as per term one, 2020. Among the 80 pupils, 33(41.45%) were females and 47(58.75%) were males. The study only included 10 participants and among these participants, seven were males and three were females. One participant was in grade 10, four were in grade 11 and five in grade 12 respectively. Responses from the participants highlighted that many pupils at high school level have little or no awareness of NCDs. Among the 10 participants of the study, seven of the participants had no or little information on NCDs after completing the questionnaires and follow-up interviews, thus 70% of the sample size had no or little information on NCDs.

Figure 1.0. Illustrates by sex how many amongst the participants of the study knew about NCD'S through the health systems current awareness programs on NCD'S.

Table 1. Participant based on Gender

Source of information on NCD'S	Number of Males	Number of Females
Health personnel	5	1
Social media	1	0
Print media	1	1
Other	0	1

Source: Researcher, 2019

3.3 Issues Related to Lack of Awareness of NCDS Among the Pupils Who are Deaf

The study found that there is a lot of factors that affect the level of awareness among the pupils who are deaf at Munali High School. The study highlighted that among the many factors, the major factors were identified as; lack of communication between the health personnel and the deaf person (pupil), attitude (stigma) of

the health personnel towards the person who are deaf (pupil), lack of health education in the school curriculum and lack of specific information on NCDs. Other identified factors were lack of regular health campaign within the school premises, lack of health materials on NCDs and poor organization of physical education.

Lack of communication between the health personnel and the pupils

The study indicated that pupils with hearing impairment do not get information on NCDs and it is very challenging to communicate effectively with the health personnel. Participant E stated:

“...in many occasions that I am not escorted by anyone from home who can sign, I write on the paper for the health provider to read or ask questions, and it is very time consuming and not so accurate ...”

Many clinics in Lusaka that the pupils had visited for other health related issues, had no trained sign language interpreters thus they experienced ineffective communication. The health personnel would have a hard time trying to explain to the pupil who are deaf what NCDs are or how to prevent them from developing. This is a similar finding by Chiluba et al (2019) in the study conducted in Kapiri Mposhi on health literacy of the deaf. The study concluded that misunderstanding arose about expression of pain because the healthcare providers know little to nothing about the major role that facial expressions play in deaf community.

Participant A also stated:

“... NCDs can come from poor hygiene such as not washing hands after using the toilet and lack of physical exercise...”

This indicated that participant had no precise information on NCDs because the participant could not differentiate between Communicable Diseases and Non-Communicable Disease. This was very common among many participants and mainly because the health personnel couldn't manage to make distinctive difference between the two types of diseases. This was similar with participant E who stated:

“...you can develop Blood Pressure by not playing football and running, and you can get TB if you don't take medicine...”

Attitude (stigma) of the health personnel towards the person who is deaf

In many Zambian settings, hearing impairment is believed to be curse or people who are deaf are not treated the same as the general public. Children born with any disability do not enjoy the rights as the whole bodied children in the communities, the participants explained how they experienced stigma at least once from the health personnel during a visit to a health facility. Participant J stated:

“...I didn't understand what the nurse was trying to explain to me, so I kept on asking until she called her colleague to attend to me because I was stubborn...”

A good attitude is one of the important values of a healthcare provider should possess. A good attitude facilitates communication because the patient is provided a feeling of being accepted and being treated as an equal. This is very important to individuals who are deaf because they need extra care as compared to the general public. A negative attitude often results in poor communication and is perceived as rejection. The participants alluded to healthcare providers not maintaining eye contact as being rude when they were attending to them. Participants D and I stated:

“...the doctor kept on looking elsewhere when I tried to show him what was wrong with me...”

“...the nurse sent me back home to get anyone who can sign before I could finish writing on the paper to explain...”

The attitude of the health personnel inhibits the health information shared to the people in the deaf community. The health personnel do not walk an extra mile in trying to explain some of the most common diagnosis such as blood pressure results or body mass index of an individual who is deaf as it is perceived as hard and unnecessary. This results in limited access to NCDs information that is shared to the people who are deaf thus the level of awareness continues being low among the group of interest. Participant B stated:

“...the doctor told me not to be eating a lot of potato chips(fries) without telling me why not...”

The study found that discrimination in form of stigma have a negative impact on the health of the people. This is in accordance with the findings by Anne et al (2019) that health stigma is a well-documented barrier to health seeking behaviour, engagement in care and adherence to treatment across a range of health conditions globally.

Lack of health education in the school curriculum

The current school curriculum does not consist of health education that is aimed at educating the pupils on health matters. The only health education that the pupils get during their high school level is Physical Education which is conducted on Fridays. This is usually poorly conducted because the class teacher during 40 minutes takes the pupils to the school playground where they are asked to run, play soccer, netball and volley. Those pupils who cannot do play or have interest in any of the named sports are left out and they usually go the dormitories to sleep or do other activities like washing. Participant C and F stated:

“...Friday last period is the best day I have to do my laundry because most of my friends would be at the ground...”

“...I don't like any of the sports on Friday so I just stay in the classroom to study...”

The interviews reviewed that physical education (PE) is ineffective because there are no health talks conducted during this period. The class teacher only takes the pupils to the ground to play and those who can't do any of the games are allowed to watch and cheer for their peers.

Participant A also stated:

“...The older pupils (especially those in grade 12) do not allow us to play soccer until they are tired or the period elapses...”

Most of the participants highlighted that Physical Education was viewed as not very Important as compared to other theoretical subjects that the pupils are taking. Many participants viewed the physical education period as free period to do other things either school related or not, this is because they were unaware of the benefits in participating in physical exercises.

Lack of specific information on NCDs

Many participants when asked about NCDs, in their responses they indicated that they had no or little information because many of them when asked to mention any NCDs they mentioned other Communicable Diseases such as cholera and Tuberculosis (TB). This indicated that they couldn't differentiate between the two types of diseases. The study found that there is no specific information on NCDs on the school premises such as brochures or posters. Participant G stated:

“...there are posters of HIV/AIDS posters on the notice board but I've never seen any poster of BP...”

Participant I also stated:

“...we usually have drama plays about Gender Based Violence and Drug abuse...”

The study found that the school has never had health campaign or talk solely based on NCDs despite the alarming numbers of NCDs cases in the country, and the deaf community is not any exceptional to this emerging problem.

3.4 How Many Pupils Who are Deaf are Reached by The Current NCDs Awareness Programs?

The study found that many pupils at Munali High School had little or no information on NCDs. The study concluded that out the sample size of 10 participants, only three participants provided adequate information on what NCDs are, how they develop and some precautions that an individual can take to avoid developing some of the NCDs such as High Blood Pressure. Participant G stated:

“...you cannot get BP from your friend and you can avoid BP by playing soccer and eating less oil in food ...”

The majority of the participants did not know the difference between NCDs and Communicable Diseases. During the interviews, most of the participants when asked to list any NCDs they knew, they mentioned one or two Communicable Diseases such as cholera and Tuberculosis simply because they are the most talked about diseases either on print media or by health personnel.

It was also found that the participants that had were aware of the NCDs, two of them was through a healthcare provider during the regular

medical check-ups and regular diagnosis from the clinic. One participant narrated how the nurse took time to explain what NCDs are because the participant was obese during the medical checkup for the hearing aid. The participant further elaborated that the nurse explained to the participant's mother how the participant could lose some weight. Another participant stated that a nurse from the local clinic made a presentation on hypertension, how it develops, its effects and how to manage or reduce the risk of developing it. The other participant stated that he read about the common NCDs such as High Blood Pressure, Cancer and Road accidents on social media (Facebook).

The study found that most participants got information about NCDs from health personnel, this also included those who had little information. The other participants also mentioned other sources such as print media and Community Health Workers. The health personnel were found to be the common bridge between the pupils who are deaf and the information on NCDs. Though the information was inadequate thus most of the participants had limited information on the subject matter.

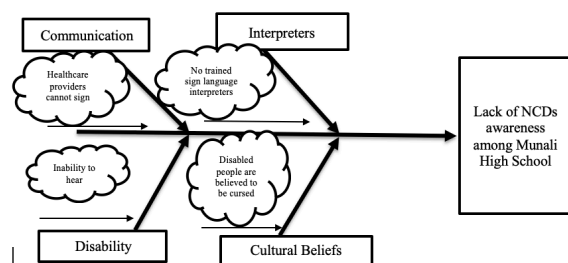


Fig 1. Fishbone Analysis of lack NCDs awareness among pupils who are deaf at Munali high school.

4. Discussion

This chapter provides the discussion based on the findings with key objectives of this study namely; (1) To assess the awareness level of NCDs among the pupils are deaf at Munali High School, (2) To explore the factors that affects the awareness level of NCDs among the pupils who are deaf and (3) To assess how many pupils are deaf are reached by the current NCDs awareness programs.

4.1 The Prevalence of NCDs Awareness Among the Pupil Who Are Deaf S at Munali High School

There is high prevalence of NCDs unawareness among the pupils who are deaf at Munali High School. The results indicated that among the pupils that participated in the study, more than 50% of the sample had little or information on NCDs. The sample provided valid conclusion that most of the pupils who are deaf at Munali High School had little or no information on NCDs. The pupils that had some information on the subject matter narrated that there was no follow up or update on the information that they had on the current issues surrounding the NCDs. This is in line with the study conducted by Chiluba et al. (2019) who found that people with hearing impairment are not familiar with health information because of communication barrier between them and the health care providers.

The study also concurs with Smith et al. (2012) that the population of people who are deaf do not receive adequate education about topics such as safety, mental health, alcohol, drugs, and sex education about balanced meals and nutritional treatment of health issues is again hampered by communication barriers. Erroneous knowledge on subjects such as nutrition and high-risk behaviors is propagated among the pupils who are deaf without access to the factual sources.

The awareness level was lower among the pupils whose residence was in rural areas and only depended on the government health facilities as the only bridge between them and their health needs. Meghan et al. (2016) in her study highlighted that disabled people are 3 times more likely to report being denied medical care and they are 4 times more likely to report receiving substandard care.

4.2 Issues Related to Lack of Awareness of NCDs Among the Pupils Who are Deaf

Lack of communication between the health personnel and the pupils

The major issue that is related to lack of NCDs awareness among the pupils at Munali High School is communication barrier that exists between the health personnel. The pupils

found it hard to ask health personnel about NCDs because the healthcare providers in most clinics in Zambia are not trained in sign language. Communication is a common problem between the healthcare providers and the individuals who are deaf, the health personnel without the health of a trained sign interpreter, cannot explain in detail some of the regular and necessary diagnosis results such as Blood Pressure reading and Body Mass Index (BMI). Lack of information in accessible formats, such as sign language, the staff at the front desk without training or skill of sign language to communicate with persons who are deaf at the entry point to primary medical care (Arne et al, 2016).

Furthermore, Arne et al. (2016) went on to say that lack of proper monitoring, no punishment or reward systems and absence of focal point for any complaints are some key problems faced by disabled persons. This is in view with the findings of this study that the pupils who are deaf were not provided with any comment box to rate their experience at any given health facility they visited to express some of their sentiments concerning the quality of the services they received. The pupils, especially those whose residence was in rural areas, expressed less information as compared to their colleagues from urban areas. This is in common conclusion as WHO (2011) in a report on people living with disability, both physical or mental, that disabled people living in poor set ups are more exposed to NCDs than those living in urban areas. Though the two conclusions contradict with the conclusion by Daniel et al (2017) who reviewed that mobile phone-based health interventions for non-communicable diseases management in Sub Saharan Africa has increased the level of awareness of NCDs among the individuals who are deaf, because two-thirds of the deaf community own a smart phone.

Attitude (stigma) of the health personnel towards the persons who are deaf

This study reviewed that many participants of the study experienced some form of stigma by the health personnel at least once during their visit to a health facility. individuals who are deaf are treated as outcasts and they do not feel like part of the general public. At the health facilities, they are usually treated last or not at all when they do not have a

sign language interpreter. The individuals who are deaf are usually labeled as “stubborn” by the health personnel because of their inability to grasp information at pace as the general public. The health personnel in many Zambian settings believe that associating with people who are physically disabled and have a deaf impairment, one increases his/her chances of having a child with the same condition. Therefore, many health personnel avoid to treat or attend to individuals who are deaf which results in this target population missing out on important health information such as NCDs.

Health stigma is a well-documented barrier to health seeking behaviour, engagement in care and adherence to treatment across a range of health conditions globally (Arne, 2019, Chiluba et al.,2019). This stigma is coupled with political marginalisation as well as discrimination and inequitable access to health services experienced by person who are disabled person resulting in poorer health outcomes. The study found that participants who experienced stigma preferred not to visit the health facilities unless the health condition was critical or had someone from home who can sign to escort them to the health facility.

The poor healthcare provider-patient ratio in many health facilities results in the health staff being overwhelmed by the number of patients they attend to in a day. Health personnel try to be as quick and thorough as possible in ensuring that they provide to the patients the services they all need. This usually results in many of the health care providing having a negative attitude and this is severe in the case of individuals who are deaf trying to access health care or information. The good attitude by a healthcare provider facility an environment that can enable a person who are deaf to take their time in expressing themselves and ask necessary questions that can help them have a healthy life. The study found that many participants did not know the amount of salt an individual should consume in a day, this information is very vital and should be provided by the health personnel during the clinical visit by any individual, including the deaf.

Chiluba et al stated that the health care providers who did not pay attention to the patient’s who are deaf facial expressions were perceived as impolite and thus the individual who are deaf would not continue with the

efforts of communicating. A bad attitude is associated with a feeling of being rejected, impeding communication. Therefore, negative attitude (stigma) is related to why there is low NCDs awareness among the pupils who are deaf from Munali High School.

Lack of health education in the school curriculum

Health education is very important to school-going children because it allows them to improve their nutrition and learning capability. School-going children need health education which is necessary to their lives, of good quality and effective in its approach. The aim of health education in primary and secondary education level is to increase health awareness, knowledge and behavior among the school-going children. This is used and delivered to the pupils by teachers as physical education and it is not examinable at the end of each school term.

The results from the study suggest that Physical Education is inefficient in providing the necessary health information that should be provided to the deaf pupils at Munali High School. Physical education is the most common mode that is used to educate the pupils about health, the study highlighted that this subject is poorly conducted and pupils do not take keen interest because it is not examinable. Many pupils shun from participating in the activities that take place during the physical education period.

The pupils use this time to study for other examinable subjects, do other activities that are not school or just go to the dormitories to sleep. The activities at the school playground are not usually coordinated by a teacher, thus younger pupils are denied an opportunity to take part in activities like soccer by older pupils. Some participants brought to light some of other issues that made them not take part of the activities, one of them being that there is a limited number of activities that take place and the participants do not like any of the activities that take place.

A study by Justin (2017) on implementation of physical education in secondary schools in Zambia concurs with results of this study that physical education is not given the same weight as the other subjects that the pupils take. Therefore, this subject

despite being important to the pupils in physical growth and development, it is dying a natural death in many schools including Munali High School.

Lack of specific information on NCDs

A study by Severin et al (2019) on primary NCD prevention and communication barrier of sign language users concluded that people who are deaf only search for NCDs information if they are affected or if someone in their close social environment had been diagnosed by any of the NCDs. This is contradicting to the finding of this study because during the interviews the participants showed interest in knowing more about NCDs, how one can develop them, their effects and their management. They asked for clarity on the difference between communicable and non-communicable diseases, one of the participants stated that there are no posters or brochures on NCDs awareness around the school premises like the HIV/AIDS posters around the school and on the notice board for them to be reading and know more about the subject matter.

The school had never invited some health personnel to talk and educate the pupils about NCDs and their effects in one's life. This largely contributed to the low level of NCDs awareness among the pupils who are deaf. The study also found that the school only sensitized the pupils on communicable diseases such as Sexually Transmitted Diseases, HIV/AIDS, Cholera etc. through the school drama club plays. Many participants confused NCDs with communicable disease such as cholera because there are posters of cholera prevention methods on almost all the school notice boards. The other issue that emerged from the study is that there are no words that describe distinctively the NCDs in the sign language vocabulary, this makes it hard for the pupils who are deaf to fully understand what some of the NCDs are such as diabetes.

1. Conclusion

From the results and discussion, it was concluded that the students who are deaf at Munali High School had little or no knowledge concerning NCDs therefore, the awareness level was very low. Some issues such as lack of communication between the health personnel and them, the attitude of the health personnel, lack of health education in the school

curriculum and lack of specific information on NCDs were found to be the major cause of low awareness among the target group. However, some efforts were made to ensure the pupils have some of the basic information on NCDs such as making physical education mandatory for every student to take part in physical activities at the school playground every Friday afternoon. The common source of information for the pupils who are deaf was health personnel or visits to a health facility. It was also highlighted how other sources such as print media and social media contributed to educating the pupils who are deaf on the subject matter.

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