

# TELEVISION AS A SOURCE OF COVID-19 INFORMATION: A QUALITATIVE INQUIRY INTO THE EXPERIENCES OF THE DEAF DURING THE PANDEMIC

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## Abstract

Coronavirus disease (COVID-19) came as a rude shock to all. Its emergence was sudden and its attendant effects on psycho-social adjustment of all citizens especially among the Deaf were traumatic. Thus, the need to access the required information about the virus became necessary. While information about COVID-19 came from various media sources, television as an audio-visual material remains one of the most reliable sources of COVID-19 to the deaf. However, issues of quality assurance and comprehensibility of televised COVID-19 related information remain a concern among the deaf during the pandemic. Thus, as there is scarcity of research reports on such circumstances among the deaf, this study explores the perceived quality of and comprehensibility of televised sign language interpreted COVID-19 briefing by the Nigerian deaf. The motor theory of sign language perception was used as a theoretical lens in this study. An individualised semi-structured interview was used to gather data that was used to achieve an answer to the research objectives. Thematic content analysis was employed for data analysis. The following themes resulted from the analysis: visibility, incomplete interpretation, Camera handlers'/Television stations' inadequate knowledge of deafness and deaf communication processes and partial comprehension of interpreted COVID-19 briefings. Camera handlers and technical crew must ensure adequately illuminated interpreters space and a contrasting backdrop of picture-in-picture is ensured. Also, SLIs should endeavour to use a transparent face shield or adopt the 1.5m–2.5m physical distancing rule.

**Keywords:** COVID-19, deaf, pandemic, sign language interpreter, television, presidential task force (PTF).

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## 1. Introduction

Despite public health measures, the world witnessed an emergence of the Coronavirus disease in the month of December, 2019 from the province of Wuhan, China. The disease, also known as COVID-19, is a virus that attacks the human respiratory tract. Its symptoms in human body include cough, cold, difficulties in breathing and ultimately pneumonia, bone pain as well as fever with high body temperature [1, 2]. Since the occurrence of COVID-19, about 213 countries and territories have been affected [3]. Unfortunately, millions of people across the globe have been infected with the deadly virus and death rate has been recorded in hundreds of thousands globally [3, 4]. Therefore, based on the rapid infection rate of the virus and associated mortality rate across countries and territories, WHO [2] declared COVID-19 a pandemic.

COVID-19 is no respecter of anyone, irrespective of color, race, gender, educational qualification or socioeconomic status. The effect of COVID-19 is felt across the globe even among persons with disabilities. Either directly or indirectly, persons with special needs were greatly affected with the events, associated with the pandemic. To many of such individuals with special needs (such as those with physical challenges, the deaf ('d' refers to individuals with hearing loss,

while 'D' to individuals who are culturally Deaf) [5]; the Visually impaired/Blind, individual with Autism, intellectual disabilities among others) the sudden shift of social interaction to a mode of physical and social distancing dose not only became a surprise but resulted into an increase of psychological trauma. Especially, persons with sensory disabilities, in particular those who are Deaf in Nigeria seem to be more impacted by the rage of the virus.

Persons who are deaf refer to those set of individuals whose sense of hearing is non-functional to assess and process verbal stimuli [6]. In other words, they have hearing loss significant enough that they could only express themselves or receive information through sign language, in pictures (both moving and still), facial expression, lip reading, print media among other means apart from audio. Currently, there is a staggering data on the population of person who are deaf and or hard of hearing in Nigeria, but Mba [7] had stated that one in every 1000<sup>th</sup> Nigerian are living with hearing loss. In other words, by the implication of Mbas' [7] projection, about 18 to 19 million Nigerians may be living with deafness. In his report, 23.7 % of Nigerians are indicated by Treat [8] as those who may be having hearing impairment. Unfortunately, despite the presence of this group in every Nigerians community, they are marginalized, stigmatised and somewhat excluded from health related discourses [9].

Adequate and required information about COVID-19 in the early parts of year 2020 travelled faster via audio and audio-visual media, regrettably, due to their disabilities, individuals who are deaf in Nigeria and in many part of Africa missed out on many of COVID-19 related information. Regrettably, it was surprising for the deaf, especially in Nigeria, to see sudden changes in peoples' interactions, wearing of facemask and the need for physical distancing among other measures of preventing community transmission of COVID-19 after the index case of the virus was reported in Nigeria. Hence, the sudden trend of the 'new-normal' stirs apprehension among the Nigerian deaf.

### 1. 1. COVID-19 and Nigeria response

The occurrence and effect of COVID-19 around the world had earlier put Nigeria on a stand-by through the Nigerian Centre for Disease Control (NCDC). The NCDC had put together a training workshop for COVID-19 rapid response teams in the country, and a Coronavirus Group was initiated on 28 January 2020 towards preparation of emergence of the deadly virus on Nigerian soil. All apparatuses, set up by the NCDC and government at all levels, were initiated to increase the surveillance and activate their emergency operations for the emergence of COVID-19 in the country [10]. Unfortunately, despite all preparation and measures, put in place to prevent the existence of COVID-19 in Nigeria, the deadly virus was reported on 27 February 2020. The index case of COVID-19 in Nigeria was an Italian who flew in to the country via the Muritala Muhammed International airport, Lagos [11]. Unluckily before being detected, Ebenso and Out [11] stated that the COVID-19 index case had interacted with people within the city and travelled from Lagos state to Ogun State in Southwest, Nigeria where he was found to be positive of COVID-19 after he became ill.

Immediately after the detection and confirmation of the index case, the National Emergency Operations Centre (EOC), comprised of a multi-sectoral response team, was activated. In support of the efforts, made by the NCDC, on 9 March 2020 the Presidential Task Force (PTF) on COVID-19 was inaugurated. The objective of the PTF [12] was among others to "coordinate and oversee Nigeria's multi-sectoral inter-governmental efforts to contain the spread and mitigate the impact of the COVID-19 pandemic in Nigeria". In other to ensure adequate dissemination of required information on COVID-19 to Nigerians, the PTF (Presidential Task Force (PTF) on COVID-19, 2020) effectively made use of all available audio, audio-visual and prints media within the country. Central to this current study among all media, used by the PTF on COVID-19, is the audio-visual media, especially the television.

Television is a household gadget that uses electricity as a power source to project information of various forms in sound and visual presentation as News, Interviews, Drama, Music, Sports, Documentary, and many more. As noted by O'Donnell [13] and Chioma [14], through television programmes social relations are established, educative information is disseminated, socio-cultural discourse and experience is projected in real life and fictions to teeming audience. Therefore, based

on the audio and video outputs of a television, viewers are privileged to watch, perceive, assimilate, interpret, appreciate and accept or reject images and or information, displayed on the television screen. Essentially, television as a medium, through which educative information is disseminated, it is also one of the strategies for developing societal best practices, values and norms [13]. In Nigeria, nearly all households have at least a television set [15] with about seven million households using a pay TV [16]. As noted by McQuail [17]; Patrick and Samson [18], the degree of media dependency and exposure has influenced the attitude of television viewers irrespective of disabilities notwithstanding.

Based on dependency on television and the need to provide access to COVID-19 related information to Nigerians, the activities of PTF through daily briefing of issues, relating to necessary and required COVID-19 information, were first televised via National, States and privately owned television stations on 30 March 2020. Regrettably, PTF daily briefing on COVID-19 was not inclusive at first two weeks of COVID-19 briefings. In other words, Deaf citizens were left out of COVID-19 televised information until after calls for inclusion of sign language interpretation by Disability groups, Deaf Associations, Non-governmental organizations and Sign Language Interpreters (SLIs) for inclusion of Deaf citizens in disseminations of COVID-19 related information, being disseminated by the PTF. Aptly put, the inclusion of sign language interpretation in the televised activities of the PTF was a welcome idea to the deaf communities. Sign language interpretation is processes, by which a trained individual (Sign Language Interpreter) serves as intermediary between the Deaf and others without hearing difficulties. In other words, SLIs serves a conduit of information between those who are deaf and non-deaf counterparts [19].

## 1. 2. Television programmes and sign language interpretation

Basically, SLIs are non-deaf persons who understand, use and switch between sign language and verbal communication modes in an attempt to initiate, establish and advance understanding of concepts, emotions, feelings, ideas and phenomenon between deaf and non-deaf individuals [19, 20]. The process of sign language interpreting involves both mental and physical activities, which include but not limited to lip-reading, use of facial expression, movement and curvature of the hands as well as fingers to represents spoken words. While the pandemic persist, it is expedient for the deaf to have access to televised information on COVID-19 through sign language. Thus, SLIs interpreters were present during COVID-19 briefing, conducted by PTF. The presence of SLIs during the briefing is not peculiar to Nigeria, other African nations, such as Kenya, Ghana and South Africa, among others as well other American, Asian and European countries also had their briefing on COVID-19, interpreted for the Deaf.

Sign language interpretation on televised programmes is not a new phenomenon. Although, the televised sign language interpretation is under-researched, some studies in the last two decades [21]. For example, studies have at different time presented issues, associated with sign language interpretation, in both real-time and pre-recorded televised programmes [22–28]. While extant literature, for instance, Kurz and Mikulasek [23]; Xiao and Feiyan [28] has presented pros and cons of televised sign language interpretation, researched studies on televised sign language interpretation in Nigeria are yet to be established even before the pandemic. However, Kurz and Mikulasek [23] in their study note that having sign language interpretation on television creates additional difficulties and financial strains on media houses. Neves [29] remark that rather than been seen as value added, broadcasters perceive sign language interpreting as additional problems due to use of more resource like camera, lightening and personnel.

Based on the aforementioned challenges, expressed by television houses, the European Broadcasting Union [30], television stations are doing far below expectation as recommended by the United Nations Committee on the Rights of Persons with Disabilities [31] to accommodate persons who are deaf in their programmes. Although Bosch-Baliarda et al. [21]; Sharma and Rao [25] have advocated the need for television stations to improve on information accessibility to the deaf via televised sign language programmes, but the attitude and perception of deaf viewers towards quality of sign language interpretation, SLIs' appearance, picture quality of televised programmes, type and or size of SLIs' frame, colour contrast as well as illumination remain a concern.

Evidences from the studies showed that expectations regarding the quality of sign language interpreting on audio visual media is high [23, 24, 29, 32]. In a 2009 study among some deaf in China, Xiao and Yu [33] found that about 46.3 % were unsatisfied with the quality of SLI on TV. Xiao and Li [28] in a follow-up study among the Chinese deaf noted that incomplete interpretation by Chinese SLIs contribute to Chinese deafs' lack of interest in watching signed televised programmes. In particular, Xiao and Li [28] added that participants in their study were disturbed by lack of or inadequate facial expressions by the interpreter, small picture-in-picture frame of the interpreter, boring contents and lack of sync between signing and pictures as well as speed of interpreting were reasons why the deaf were not interested in televised sign languages programmes. In previous discussions of quality of interpreting on television, colour contrast has being a reoccurring and complex issue [21, 34–36].

According to Chiaro and Nocella [34] and Po'chhacker [35] colour contrast, the backdrop colour, colour of the interpreters' frame and interpreters' clothing are variables that influence quality perception, language and delivery of televised contents. Previous studies have de-emphasised the idea of multi-coloured clothing by SLIs interpreters due to the fact that it prevents deaf viewers from being able to critically discern subtle movements of the interpreters' fingers and hands [23, 27, 28]. Hence, viewer's inability to clearly discern or distinguish signs or finger-spellings due to colour contrast may have detrimental consequences of eye-tracking [27], consistency, logical cohesion and comprehensibility of interpreted discourses. Hybrid Broadcast Broadband for All [37] based on the importance of colour distinguished between bad and good sign language interpreting telecast (**Fig. 1, 2**).



**Fig. 1.** Bad example of Sign Language Interpreter in picture-in-picture



**Fig. 2.** Good example of Sign Language Interpreter in picture-in-picture

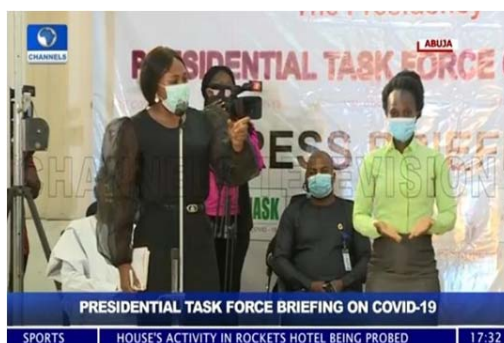
As noted by Po'chhacker [35], HBB4ALL [37] and Sandler [38], interpreters' frame, picture quality, colour contrast, synchronicity, interpreters' dress code, clear view of interpreters' face and expression are top priorities towards viewers' logical cohesion and comprehensibility. Interestingly, studies of Marschark et al. [5]; Wehrmeyer [27] and Jackson et al. [39]; had expressed concerns about comprehension abilities of the deaf audiences when watching a hearing interpreters sign. In fact, Wehrmeyer [27] remarked that a lot of questions are yet to be answered in research studies in terms of comprehensibility of Deaf viewers. Although, incomprehensibility of deaf viewers was

attributed to weak signing skills either on the part of the interpreter [40] or the deaf themselves, high speed of signing [28], lack of education, frail metacognitive and/or metalinguistic processing skills or issues of divided attention [5, 41] and too small size of the interpreter picture [24, 26]. In a South African study, Wehrmeyer [27], concluded that comprehensive abilities of deaf viewers are problematic as many deaf viewers struggles to comprehend hearing SLIs on television.

Inadequate clothing contrast, careless, incorrect or fast signing model, small picture size, interpreting strategies, such as over-condensation or over-simplification, inadequate syntactic constructions, inconsistent or incorrect interpreters' use of facial expression and mouthing, ignorance of deaf discourse norms and limited vocabulary, were identified by Wehrmeyer [27] as factors that influences the deaf television audience. While the aforementioned were advanced in previous studies, it is somewhat disheartening, that research activities in Nigeria are yet to beam searchlights on issues of televised sign language programmes vis-à-vis the perception and attitude of the deaf audience or viewers towards the interpreter and/or quality of interpreted messages as well as the comprehensibility of interpreted televised contents. Thus, this study, in this critical time where information about preventive ways against COVID-19 is essential assessed Deaf viewers' perception of qualities of interpreted COVID-19 messages as being aired during PTF COVID-19 briefings and comprehensibility of such televised interpreted COVID-19 messages.

### 1. 3. Statement of the problem

The detrimental effect of COVID-19 is felt on all including the deaf. While studies are ongoing to determine an effective vaccine against COVID-19, information on status of the virus preventive measures is important for all irrespective of hearing conditions. In Nigeria, while the deaf depend on various means of accessing COVID-19 related information, many Nigerians with deafness depend on televised COVID-19 information, particularly televised COVID-19 related information, presented in sign language during the PTF COVID-19 briefings. Since the start of the PTF COVID-19 televised briefing, the authors of this study observed that various television stations have not sufficiently factored in the deaf because the manner, with which they relay the briefings, not best suits the characteristics of the deaf audiences. In fact, it is appalling, that despite the fact that efficient information dissemination via sign language interpretation is incomplete without mouthing words, sentences or vocabularies being signed, SLIs who interpret during PTF COVID-19 briefing were constantly wearing non-transparent facemasks (Fig. 3) as compared with other nations were COVID-19 briefing were interpreted (Fig. 5, 6). In addition, illumination and interpreters frame (Fig. 3, 4) seems to be a concern for interpreting efficiency and comprehensibility of interpreted messages.



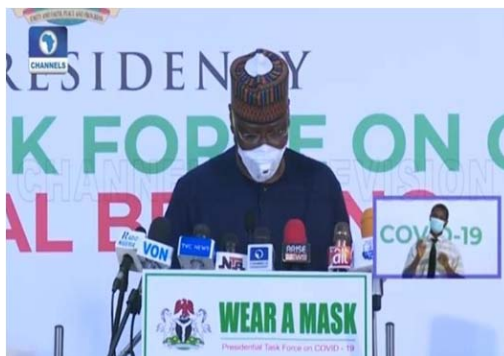
**Fig. 3.** A screengrab of a Nigerian SLI with a non-translucent facemask during PTF COVID-19 briefing

Based on the foregoing, it can be assumed, that the deaf audience who rely heavily on SLIs for required and adequate COVID-19 related information as released by PTF may have waited by their television with little or no useful information about essential messages from source language (the speakers). This is perhaps due in part to insufficient lightings, directed at the SLIs, wearing

of non-transparent facemasks by the SLIs, colour contrast and or picture-in-picture frame of SLIs. Although no studies in Nigeria were found by the authors to have established link(s) between the aforementioned and comprehensibility of the deaf, especially as it relates to COVID-19. Therefore, this current study assessed:

I – deaf persons' perception of quality of sign language interpretation during PTF COVID-19 briefings and,

II – comprehensibility of the deaf audience of interpreted COVID-19 information.



**Fig. 4.** A screengrab of a Nigerian SLI with a non-translucent facemask, placed in a small frame during PTF COVID-19 briefing



**Fig. 5.** A Ghanaian SLI with a transparent face-shield during COVID-19 briefing



**Fig. 6.** A Chinese SLI with a transparent facemask during COVID-19 briefing

#### 1. 4. Theoretical framework

This study is framed by the motor theory of sign language perception, brought forward by Gibet, Marteau and Duarte [42]. The motor theory of sign language perception (MTSLP) is based on the assumption that conceptual and sign language structures are encoded at motor program levels. In other words, sign language production and conceptualization either in a face-to-face or virtual environment is a product of affective, cognitive and psychomotor domains, which work together as a sequence of motor activities to initiate desired sensory (visual, feeling or otherwise) effects. In view of the interconnectedness of the three domains, production of sign language and perception of it are closely knitted [42]. In sign language and sign language interpretation, the

movement of body, that is, motor activities, which Gibet et al. [42] infer to mean articulators, is used to express encoding and decoding signed linguistic information. As a continuum, linguistic cues are expressed by SLIs (SLIs during PTF COVID-19 briefings), which are observed and decoded via sensory cues by the Deaf viewers of televised PTF COVID-19 briefings. The aforementioned 'continuum' was further described by Gibet et al. [42] as 'inversion process' since the one end of the process is about production and perception (sensory observation) of signed linguistic information.

At the production stage, signing space, kinesthetic clues in terms of signing speed and velocity, manipulation of musculo-skeletal system or proprioceptive one (perception of muscles and articulations of speakers' message) and illumination of the signing stage is of importance. On the other hand, the perception stage of the inversion process (decoding stage) involves gesture perception where the deaf uses the sense of sight to extract multi-sensorial cues and linguistic information from a sign language interpreter and simultaneously infer motor activities of the signer into understandable linguistic information, on which the deaf can act upon. Thus while the pandemic continues to ravage almost every countries of the world, the deaf especially those from developing nations, such as Nigeria, requires first hand COVID-19 information, upon which they can understand and obtain useful information on preventive measures against the deadly coronavirus diseases. Although, the social media, especially while the lockdown persists, were filled with various unconfirmed and/or unreliable information about the characteristics and nature of the pandemic but in Nigeria, the PTF COVID-19 briefing on television was no doubt a source of reliable COVID-19 information for all and sundry.

However, attention of both the PTF and media houses (Television stations) towards capturing of sign activities of SLIs, stage lightening colour contrast, SLIs' use of facemask and decoding ability of interpreter messages by deaf viewers remain a concern in this study. Therefore, using the motor theory of sign language perception, this study assessed deaf viewers' perception of qualities of interpreted COVID-19 messages as being aired during PTF COVID-19 briefings and comprehensibility of such televised interpreted COVID-19 messages.

## 2. Method and materials

### 2.1. Study design

This study adopted the qualitative descriptive research design approach based on the interpretivist paradigm. The qualitative research design was adopted and found suitable for this study, which explores deaf viewers' perception of qualities of interpreted COVID-19 messages as being aired during PTF COVID-19 briefings and comprehensibility of such televised interpreted COVID-19 messages. A qualitative research design is suitable for research studies that sought to explore a phenomenon based on aspirations, attitudes, beliefs, motives and values of people in relation to space and social interactions within their social and physical environments [9, 43].

### 2.2. Sample and sampling procedure

Nigeria has six geopolitical zones, out of which we purposively selected the South West geopolitical zones for this study. The Southwest geopolitical zone was purposively selected for based on the robust deaf history, education and concentration of the Deaf in the region. The South West region of Nigeria has six states (Ekiti, Lagos, Ogun, Ondo, Osun and Oyo respectively). A simple random sampling technique using a balloting system was used to sample three (Lagos, Ogun and Oyo) out of the six states for the study. Among the three selected states of the South West Nigeria, four deaf individuals from each state who were members of the Nigeria National Association of the Deaf (NNAD) above the age of 18 were purposively recruited for the study. In other words, a total of 12 individuals (five (5) males and seven (7) females) who are deaf were selected to participate in the study. Participants in this study were recruited through WhatsApp messaging service and face-to-face invitations respectively between 17 June, 2020 and 13 July 2020.

Among the 12 deaf adults who participated in this study, only three participants were between ages 18 to 20 years of age as at the time of data collection. Nine out of the 12 participants were postlingually deaf, while three are prelingual deaf adults. Eight of the study participants had completed tertiary education, while the other four were currently at different stages of their tertia-

ry education in Nigeria. All study participants had hearing parents who are all Yoruba Language speakers from the Southwest Nigeria. Furthermore, from the thematic analysis of the responses of the study participants, three themes (Visibility, Incomplete interpretation, Camera handlers'/Television stations' inadequate knowledge of deafness) emerged on deaf' perception of the qualities of sign language interpretation during PTF COVID-19 briefings.

### 2. 3. Measure and procedure

Data, used in this study, was collected using semi-structured interview questions, designed by the researchers. Two research assistants were recruited for the study. Research assistant A assisted with the video recording of the interviews in a well illuminated environment with little or no interference with noise or distractions, while Research Assistant B was a Sign Language Interpreter who interpreted all English sentences to the deaf through sign language. Research Assistant B was a member of the Association of Sign Language Interpreter in Nigeria (ASLIN) and the Educational Sign Language Interpreters Association in Nigeria (ESLIAN). In accordance with the assertion of Creswell [44], the video recorded interview was conducted as we sought to understand the views and perceptions of participants of qualities of interpreted COVID-19 messages as being aired during PTF COVID-19 briefings and comprehensibility of such televised interpreted COVID-19 messages. In line with the interview guide, procedural checklist and minimising the possibility of compromising the integrity of the data collection process, interview sessions, which lasted for about 28 minutes on the average, were conducted by the same researcher and sign language interpreter with all the 12 participants. Although, the sample size of 12, used in this study, may be considered small but Saini and Shlonsky [45] note that for studies of this nature (qualitative research design) such as sample size is sufficient.

### 2. 4. Ethical consideration

The researchers sought for permission to conduct this study from the Executives of Nigeria National Association of the Deaf (NNAD). Participants of this study were duly informed of the aims of the study in both a printed form, written in English Language, and signed language by Research Assistant B. Participants were then given a printed consent form, written in English Language, which they voluntarily append their signatures. Based on the assurances of confidentiality of information provided and anonymity of study participants, respondents' anonymity is hereby preserved. This study was conducted based on the ethical clearance (UZREC 171110-030), obtained from the University of Zululand from the Research Ethics Committee.

### 2. 5. Data analysis

Research Assistant A and the researchers both accessed the recorded video interviews, while Research Assistant A transcribed and coded it for data analysis. Participants were pseudonymised as 'P1' to 'P12' so as to ensure anonymity, confidentiality and privacy of the participants' identity. The transcribed video interviews were cross validated by the authors of this study and Research Assistant B. The author with the assistance of the Research Assistant B modified and reconstructed the tenses of the interviewees to reflect well-structured grammatical tenses suitable for further analysis. For instance, sentences, signed as "*Mouth covered facemask Interpreters not good for me*" by P4, was reconstructed to mean *I'm not comfortable with the use of facemask by interpreters*. Furthermore, thematic content analysis was used to analyse transcribed interviews. As indicated by Astalin [43], thematic analysis is used to identifying recurring themes in an interview. Thematic analysis used involved iterative reading of data [46]. The iterative process provided an opportunity to identify patterns and themes, emerging from the data, in order to use the themes to describe and address the research questions.

## 3. Result

Findings from the analysis of the responses, provided by the study participants, are carefully presented below:

(I) – Visibility



Participants in this study were disturbed by the stage lighting and the brightness of the stage, on which SLIs stood during the PTF COVID-19 briefings. Participants frowned at the clarity of SLIs' view due to inappropriate backdrop. In support of this assertion, P2 (Male, 33 years old) said:

*Illumination, which beamed on Sign Language Interpreters who interpreted during the PTF COVID-19 briefings, was not good enough. It was not easy for me as a Deaf to really follow all the movement of hands and other interpretations. Even I brightened my television set at all time when I watched the PTF COVID-19 briefings but I discovered that I had to squeeze my eyes almost at all time to clearly see some of what was interpreted.*

Participants believe that COVID-19 related information, given during PTF briefing, is very important for safe living during while the pandemic, raged in Nigeria. They do note that adequate information on COVID-19 for the deaf is somewhat depended on interpreted messages from SLIs, however, stage lightings remained a concern for many of the study participants, particularly those with recommended eye glasses. Based on the foregoing, the assertions of P6 (Female, 29 years old) and P9 (Male, 41 years old) is summarised as:

*...although, I loved to watch interpreted PTF COVID-19 briefings but I struggle to follow the SLIs because the lightings as most times not suitable.*" As you can see, *"I use a recommended eye glass. I most times sit closely to my television set in order for me to clearly see what was interpreted.* (P6; Female, 29 years old)

The ninth participant, P9 (Male, 41 years old) said that:

*Like my friend (referring to P6; Male, 40 years old) who had also complained about clarity of the stage and lightings on the interpreters. I as well had difficulties sometimes to clearly see and follow interpreted COVID-19 messages. At first, I thought my eye glasses was not sharp enough but I later realized that the interpreters' end was not bright enough at least for my eyes.*

#### (II) – Incomplete interpretation

The Deaf largely depends on total communication. That is, a comprehensive communication process that involves sign language, lip reading, dramatization, pantomime and some other approaches SLIs uses to emphasize sourced language for proper and adequate understanding by the deaf audience. Unfortunate, though, SLIs who featured during the PTF COVID-19 briefing used a non-transparent facemask while interpreting (**Fig. 3, 4**), thereby preventing the deaf audience the opportunity of having to lip-read the SLIs in addition to manual communication, used by the interpreters. All participants, interviewed in this study, bemoaned the use of non-transparent facemask by SLIs during the PTF COVID-19 briefings in Nigeria. Largely, participants in this study were not comfortable with the use of non-transparent facemask during sign language interpretation, which some of them referred to as incomplete COVID-19 sign language interpretation. P7 (Female, 33 years old) affirmed that:

*Although, based on the recommendation of using facemask and 1.5-2.0 meters physical distancing in prevention of transmission of the COVID-19, the SLIs should have observed and adopted the physical distancing instead of using facemask. With the facemask, I was unable to follow some of the interpreted COVID-19 information, delivered during the PTF briefing. You know we deaf depend on so many processes of effective sign language interpreting.*

Another participant believed that SLIs who interpreted during the PTF COVID-19 briefing are guilty of their professional knowledge, concerning the use of non-transparent facemask. This is according to P11, who said:

*The interpreters should have used face shield or better still, a transparent face shield, so that we the deaf audience could have adequate understanding of new vocabularies, associated with COVID-19. When I read lips of sign language interpreters, I do have better understanding of interpreted messages. With the use of non-transparent facemask, I believed that those who interpreted during the PTF COVID-19 briefings had giving incomplete sign language interpretations.*

So many Nigerian deaf had to compliment PTF COVID-19 briefings with information from social media, families and friends. This is according to P6 (Female, 29 years old), who said:

*I was happy that since PTF have started to use SLIs for the daily COVID-19 briefing, I thought, I will get all information about the virus, but I was not comfortable with the use of non-transparent facemask by the SLIs. I could not understand some of signs without reading the*

lips of interpreters, but I also used to check for and read COVID-19 related information of social networking sites.

(III) – Camera handlers/Television stations' inadequate knowledge of deafness

Participants of this study believed that Television stations in Nigeria have little or no knowledge on how to incorporate the deaf in their programmes. The deaf who participate in this study were not happy with none dedication of a camera that solely focused on the sign language interpreter and how technical crew of television stations failed to provide a contrast for picture-in-picture frame. P3 (Female, 20 years old), had this to say:

*I notice that the camera men were just moving the camera away from the sign language interpreters anyhow. They have moved the camera to the sign language interpreters only when they feel like. The sign language interpreters are optional for the cameramen. The act alone negates the principle of inclusion. I don't like it. I get lost and I find it difficult to follow the interpreter and messages, being interpreted.*

According to the participants, television stations were not considerate of their deaf viewers. Hence, the deaf audience were forced to be switching from one television station to another. One of the participants, P2 (Male, 33 years old), said:

*We used our social media platform, especially the ASLIN/NNAD (Association of Sign Language Interpreters in Nigeria [ASLIN]/Nigeria National Association of the Deaf [NNAD]) WhatsApp platform, to inform ourselves of the television station, which was clearly showing the interpreters. In other words, none of the deaf viewers had a perfect experience with sign language, interpreted PTF COVID-19 briefing.*

To buttress the assertion of P2 (Male, 33 years old); P9 (Male, 41 years old) showed to the researcher/research assistant conversations of the deaf and SLIs on the ASLIN/NNAD WhatsApp platform (Fig. 7). In addition, P9 (Male, 41 years old) confirms the assertion by saying:

*...due to variation in camera focus and clarity of sign language interpreters, we used the ASLIN/NNAD WhatsApp platform to inform ourselves of any television station that clearly and boldly shows the interpreters. This no doubt affects how we follow what was being interpreted. Directing his speech to the interviewer, P9 further said: You know that if a deaf misses a second of interpreted message, the deaf may miss out of the ongoing discussion.*

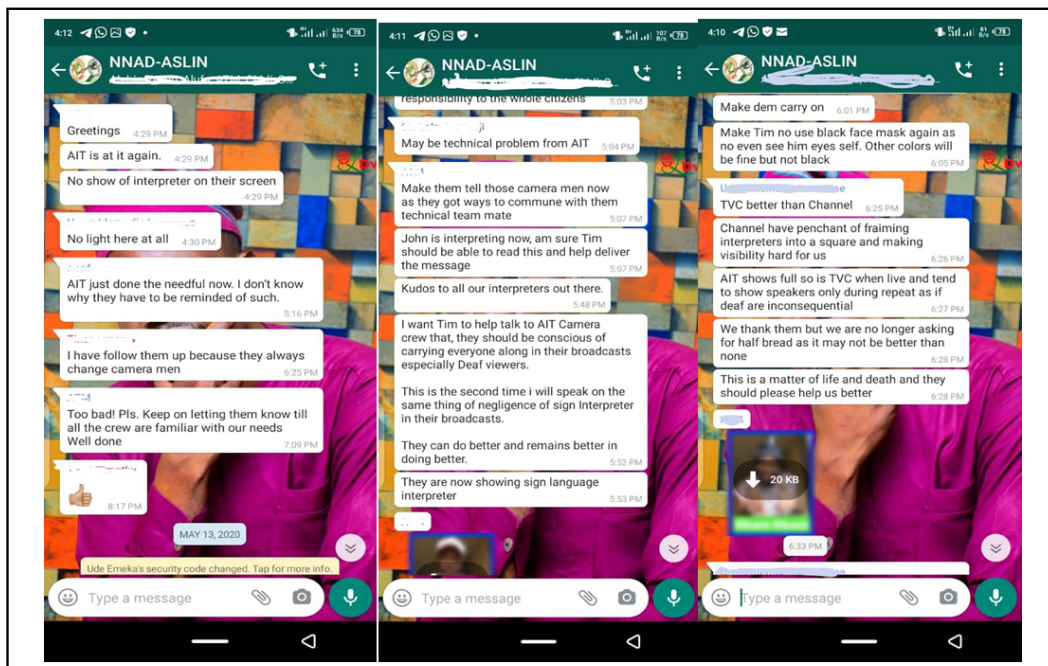


Fig. 7. Screenshots of conversation on the WhatsApp platform of ASLIN/NNAD: AIT is African Independent Television; Channel is Channels Television and; TVC is Television Continental

In response to **research objective two**, which sought to explore the comprehensibility of the deaf audience of interpreted COVID-19 information, one theme, *partial comprehension of interpreted PTF COVID-19 briefings* emerged from the thematically analysed semi-structured interview. Participants expressed their concern about their inability to comprehend interpreted COVID-19 messages. Largely, some of the participants attributed the foregoing to unprofessionalism of the cameramen, small size of the picture-in-picture interpreters' frame and SLIs' use of facemask while interpreting. P8 (Male, 32 years old), had this to say:

*It was somewhat difficult to follow the interpretation during the PTF COVID-19 briefing telecast. Those behind the camera do not actually focus on the interpreter because no provision was made for the interpreter. They (Cameramen) shift their focus away from the interpreters most times, making me to miss what the SLI had previously said.*

A camera is supposed to focus mainly on the SLI for the benefit of deaf viewers but this was not done because the various television stations did not have a plan for the deaf. According to 27-year-old P4, she believes that:

*Television stations across the country (Nigeria) had little or no knowledge of disability inclusion. I get frustrated by the way those behind the camera move away from the interpreters. I get confused and have difficulties in following interpreted messages. In fact, many a times, I don't fully understand what was interpreted by the SLI just because the camera had been taken away from the interpreters to showing the speaker.*

According to the participants, television stations put interpreters in a very small frame with no contrasting backdrop colours. Due to the foregoing participants were not motivated to watch and pay rapt attention to interpreters during the PTF COVID-19 briefings. P7 (Female, 33 years old), confirms the assertion by saying:

*One of the television stations that put the sign language interpreters in picture-in-picture frame did not give a different and contrasting backdrop to the frame. The frame was small, which made it difficult for me to actively follow the interpreter and understand the interpreted messages. In addition to little information I gather from the interpreted PTF briefing, I also searched for COVID-19 related information on Facebook and some online news outlets.*

The use of non-transparent facemask made it very difficult to access adequate information and to adequately comprehend interpreted COVID-19 messages, especially when interpreters were put in picture-in-picture frames. This is according to P11 (Male, 34 year old), who said:

*The use of non-transparent facemask by sign language interpreters during the PTF COVID-19 briefing, the non-use of different backdrop colours for the interpreters and small interpreters' frame, all contributed to why most time I feel reluctant to watch the briefing. Even when I do, I don't usually comprehend in totality what the sign language interpreters were saying. Although, I wouldn't put the whole blame on the interpreters. Television stations in Nigeria are the major cause of incomprehensibility of interpreted COVID-19 messages during the PTF briefings.*

#### 4. Discussion

Coronavirus disease (COVID-19) has no doubt affected a lot of event and life of people without exception across the globe. Irrespective of disability notwithstanding, every one directly or indirectly has been affected with the ravaging pandemic since December 2019 even up till the time when this research was conducted. Specifically, persons with who are deaf in Nigeria were baffled with the sudden changes in the social interaction and lack of adequate information about the sudden changes in physical association and use of facemask, occasioned by the COVID-19 pandemic. While the knowledge of the pandemic in Nigeria came in to the public space on 27 February, 2020 [10, 11], the deaf community in Nigeria were devoid of adequate knowledge of the virus in the country. However, being a novel virus, many deaf were amused of the sudden change in attitude of their hearing counterparts due to physical and social distancing as well as use of facemask. Based on the foregoing, the need to access information on COVID-19 by the deaf because necessary. While many research endeavours, such as Amzat et al. [10]; Ebenso and Otu [11] in Nigeria, and other efforts, made at providing information and solution to the novel virus were in top gear, information, concerning the virus, in Nigeria via sign language was nearly non-existing until the start of the PTF COVID-19 televised briefing.

This study based on its first research objective established that perception of the quality of sign language interpretation during PTF COVID-19 briefing is shaped by visibility, incomplete interpretation, Camera handlers'/Television stations' inadequate knowledge of deafness and deaf communication processes. Thus, based on the three factors, found to influence the perception of the deaf towards sign language interpreting during participants PTF COVID-19 briefings, participants were not motivated to watch televised interpreted PTF COVID-19 briefing. This present finding provides a support for other studies, which had previously raised their concern for deaf audience visibility of SLIs during interpreted televised programmes [27, 28, 34, 35]. In their studies, Chiaro and Nocella [34] as well as Po'chhacker [35] note that colour contrast is a major factor that informs the decision of the deaf audience to watching interpreted televised programmes. Chiaro and Nocella [25] specifically identified backdrop colour in an interpreters' frame (picture-in-picture) as the major determinant of quality sign language interpretation and acceptance by the deaf audience.

Xiao and Li [28] state that un-contrasting interpreters' backdrop will interfere with ability of deaf viewers to critically discern, differentiate or appreciate finger dexterities, hands and lips movement as well as facial expressions as the case may be. In other words, an un-contrasting coloured televised sign language interpreted programme, as identified in this study, grossly hampers the clarity of interpretation. This finding further corresponds with the finding in the study of Wehrmeyer [27]. According to Wehrmeyer [27], consistency, logical cohesion and comprehensibility of interpreted discourses is usually affected when visibility of the interpreter is questioned. In other words, deaf viewers have higher tendencies of missing out on interpreted messages. In support of the 2014 findings of Wehrmeyer [27], this present study found that participants had difficulties to adequately follow interpreted PTF COVID-19 briefing.

Challenges, associated with visibility of SLIs during the PTF COVID-19 briefing due to contrast, as established in this study, prevented the deaf audience from assessing a complete sign language interpretation. Participants' perceived quality of sign language interpretation is linked to stage lighting, use of non-transparent facemask and unprofessionalism of cameramen. This observation is congruence to studies, which had earlier reported some challenges, faced by persons who are deaf when assessing sign language interpretation via the television [24–26, 28]. Kyle and Allsop [24] and Stone [26] noted that the deaf television audience may have difficulties, following sign language interpretation when cameras and illumination, focused on SLIs, are not adequate. Based on the interaction and semi-structured interviews, conducted in this study, participants were not satisfied with the quality of sign language interpretation basically as a result of visibility/clarity of interpreters, lightings and camera focus. This current finding provides support for reports of past studies [28, 29, 31, 32]. Specifically, Xiao and Yu [33]; Xiao and Li [28] stated that the Chinese deaf were not interested at watching signed televised programmes largely because of incomplete interpretations and how camera handlers project the interpreters.

As indicated by Xiao and Li [28] inappropriate facial expressions during sign language interpretation, speed of interpreting, size picture-in-picture frame, contents, colour contrast and or lack of sync between interpreters and source language may influence the perceived quality of interpretation. In this study, professionalism of cameramen/camera handlers were frowned at by the participants. They believed that cameramen were not considerate of deaf viewers. In other words, camera focus on the sign language interpreter was haphazardly done and was not given a priority. In previous studies [21, 23, 29, 35, 36], issues of camera focus on interpreters had been raised. Bosch-Baliarda et al. [21] and Neves [29] in their studies noted that media houses were less concern about the deaf audience. Neves [29] avers that television media houses see sign language interpretation during televised programmes as additional problems, which require more human and material resources. Hence in order to reduce the cost of production, the television station was more comfortable with use of captioning [25] rather than using lived sign language interpretation.

Further exploration based on research objective two on comprehensibility of interpreted COVID-19 information by the deaf participants, obtained during PTF COVID-19 briefing, revealed that the participants had partial comprehension of interpreted PTF COVID-19 briefings. This finding may have been a result of uncoordinated processes through camera handlers or technical crew of television houses who assigned small picture-in-picture frames without adequate contrast, which

should enhance adequate understand and comprehensibility of interpreted PTF COVID-19 briefing. Gibet et al. [42] in their motor theory of sign language perception ascribed adequate comprehension of sign language interpreted information to well-coordinated affective, cognitive and psychomotor activities from both the interpreter and the deaf client. In other words, a cordial interaction of the three domains will foster adequate understanding of interpreted COVID-19 information. The current finding of this study provides a backing for the study of Wehrmeyer [27] as well as Xiao and Li [28] stated that the deaf audience may have difficulties in understanding interpreted messages when there is no colour contrast in terms of interpreters clothing or stage background.

Wehrmeyer [27] in a study on Eye-tracking of sign language interpreted news broadcast was of the view that deaf viewers have difficulties with following subtle movements of the interpreters' fingers and hands and the ability to critically discern interpreted messages. Deaf viewer's inability to clearly discern or distinguish signs or finger-spellings due to colour contrast and unprofessionalism of camera handlers and or technical crew of a television station, eye tracking interpreters' mouth/lips movement, hand movement and facial expression may have detrimental consequences of comprehensibility of sign language interpreted messages [27, 37]. The finding, reported in this study, does not correspond to assertions of [5, 40, 41] who had reported that SLIs' incomprehensibility by the deaf was attributed to interpreters' weak signing skills, high speed of signing [28], frail metacognitive and/or metalinguistic processing skills of SLIs.

**Limitations of the study and prospects for further research.** While the authors of this study believed that this research article has opened a new vista of research inquiry, especially among the deaf in a time of the COVID-19 pandemic, we however acknowledged that he study was not all encompassing. We acknowledged some limitations of this study as the study only engaged a limited number of participants with concentration on a particular group of individuals. Thus, the generalisability of the findings should be carefully done. This current study engaged a qualitative method of inquiry, hence the limited participants. We are of the opinion that the finding of this study may have been more robust if a quantitative approach was employed. Hence, based on the foregoing, it is expedient for future researches on issues of televised interpreted information to expand the context of this current study. Such future studies should incorporate media practitioners as well as members of the society as research participants. A comparative-quantitative research approach may be used in future studies in order to ensure generalisation of findings.

## 5. Conclusion

The COVID-19 pandemic has exposed the strengths, weaknesses, opportunities and threats (SWOT) of every sector in the human population. The impact of exposure on SWOT is visible even among the population of persons with disabilities. However, the impact of COVID-19 seems to be more worrisome among the Nigerian deaf who had difficulties, accessing verbal COVID-19 related information. However, when such COVID-19 information was expressed via sign language during PTF COVID-19 briefing, Nigerian deaf television viewers have expressed dissatisfaction with the process, output and quality of production. The high quality of the sign language interpreted PTF COVID-19 briefing was hampered by SLIs' use of non-transparent face-mask, quality of lighting, size of picture-in-picture as well as backdrop colour contrast. Additionally, this study conclude that deaf viewers did not have adequate understanding of the interpreted PTF COVID-19 briefing due to inadequate understanding of communication needs of deaf viewers and or unprofessionalism of camera handlers and technical crew of various television stations.

Based on the aforementioned, it is expedient for television station to train their camera handlers and technical crew on deafness and deaf communication process. Such training would better inform camera handlers and technical crew on the basic information needs and accessibility of essential interpreted messages. Also, it is important for camera handlers and technical crew of various Nigeria television stations to understand the importance of adequate lighting and contrasting backdrop to the deaf. Thus, camera handlers and technical crew must ensure interpreters' space is well illuminated and a contrasting backdrop of picture-in-picture is provided. Also, instead of using non-transparent facemask, Nigerian SLIs should endeavour to use a transparent face shield or adopt the 1.5m – 2.5m physical distancing rule.

**Conflicts of interest**

The authors declare that they have no conflicts of interest.

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