



THE EARLY EDUCATION AND SUPPORT OF YOUNG DEAF CHILDREN AND THEIR CAREGIVERS IN GHANA

Working paper 1: Education and health
professionals

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1 Introduction

This working paper reports on the first phase of a UK-Ghana collaborative project that examines the early education and support of young deaf children and their caregivers in Ghana. The project is funded by the British Academy's Early Childhood Education Programme, supported through the Global Challenges Research Fund.

The principal aim of this project is to improve opportunities to create quality early childhood care and pre-primary education that enables young deaf children in Ghana progress through early childhood developmentally 'on track' in terms of language, communication, learning, and psychosocial well-being. Early childhood deafness can jeopardize the rights of children to live full and individual lives and impact on those responsible for their growth and well-being (Marschark & Knoors, 2012). Most crucially, deafness in the critical stages of early development compromises the acquisition of a language (sign or spoken) that is shared by family, community, and peers (Moeller et al., 2013). Unattended deafness at this early stage is 'lost time' for early language and communication development that can subsequently compromise social and cognitive growth and impacts on societal participation. Delays in language and literacy development tend to persist into adulthood, impacting on world knowledge, independence, and mental health (Hintermair, 2014; Fellingner et al., 2008).

Little Global Challenges Research Fund has thus far been directed toward understanding the lives of deaf children and their families in low-middle income countries (Störbeck, 2012). The established research into childhood deafness typically focuses on the USA, UK Australia, and Western Europe (Knoors et al. 2019). And yet, the developmental precarities of being deaf in the Global South are significant (Desalew et al., 2020), and the sociocultural understandings of being deaf little explored (for exceptions see Friedner 2017; Kusters, 2015).

It is our hypothesis that early deaf education programming must be informed by a bioecological understanding of the lives of young children and their caregivers (Bronfenbrenner & Morris 2006). This requires a deepening of our knowledge of the social and resource dynamics of cultural contexts in the Global South. The overarching research question for this work is concerned with the sociocultural resource dynamics of the early support and care of deaf children and their caregivers in a low-income context such as Ghana. We aim to identify and

describe the existing precarities and available social and material resources surrounding early support; the intersecting influencing factors; and potential for change and development.

In Ghana, the goal of inclusive and quality education for all is part of the Government reform agenda and a recognised area of need (Wolf et al. 2019). There is a developing infrastructure for coordinated education and health services for deaf and other disabled people. Ghana has a developing Sign Language (GSL) and an active association of the deaf (GNAD) that campaigns to reduce the social isolation and marginalisation of deaf people (Nyst 2012, Opoku et al., 2020). However, the early support of young deaf children and their caregivers is an unmet need (Oppong & Fobi 2019): Ghana has no national newborn hearing screening programme, diagnosis of childhood deafness is typically late (20% of children are not identified until after their fifth birthday), and there is no established cochlear implant programme at this time. There are no early years programmes for deaf children although some schools and hearing-health clinics offer language and communication support to families. The engagement of caregivers is problematic especially in rural areas in Ghana where the incidence of deafness is higher than average.

Through an equitable collaboration with education and hearing-health professionals, and work with caregivers, families, and communities we will develop critical understandings of the social and resource contexts of young deaf children to support the development of early years policy and practice that can be replicated across different urban and rural contexts. To achieve these aims the project team are working with schools for the deaf, rehabilitation centres, deaf communities, and families of deaf children to investigate the contextual and social understandings of childhood deafness, early years development and responsive caregiving. We are gathering knowledge about the proximal relationships among children, families and communities, interaction with education and health environments, deaf communities, and the wider cultural context. We will use these insights to identify contextually sensitive ways of working with the available resources within and beyond the family unit to mitigate the developmental precarities of childhood deafness and translate this knowledge into training and support resources and mentor training for education and health practitioners and caregivers.

1.1 The research team

This research is led by the UK Principal Investigator (University of Leeds) and two Ghanaian Co-Investigators (University of Education, Winneba), who have deaf education and hearing-health, clinical experience. The work across these two institutions and two countries is coordinated by the Project Officer (PO) who is a professionally qualified Ghanaian Sign Language (GSL) interpreter with experience in audio and video transcription in the Ghanaian deaf education context. He has recently achieved his Doctorate from the University of Leeds that examines the role of interpreting in the inclusion of deaf students in tertiary education. The team of three Ghanaian Research Assistants (RAs) are qualified teachers of the deaf with post graduate research experience. Two of the RAs are professionally qualified GSL interpreters, and one is a teacher for deaf children with special educational needs in. During the second year of the project, we recruited three deaf leaders to the project team to advise on, and support, the dissemination and impact work with caregivers, professionals, local communities, and policy makers.

In this first working paper, we report on phase 1 of the data gathering activities that involved interviews with education and hearing-health professionals about their roles and their experience of early support for young deaf children and their caregivers. We asked them about their work with caregivers and invited them to share their views on the opportunities and challenges of early support, to describe approaches that work well, and less well, and to comment on what resources are in place and are needed. Throughout our writing we use the term 'caregiver' as inclusive of all those who provide daily care and support to the child. However, in our reporting of educator and clinician responses we have adjusted to the use of the term 'parents' as and when they do.

2 The participants

Participants were recruited from Southern, Middle and Northern sectors of Ghana. Permission to invite practitioners for interview was sought from three schools for the deaf: Mampong Demonstration School for the Deaf (Southern Sector/Eastern Region), Ashanti School for the Deaf (Middle Sector and Ashanti Region) and Savelugu School for the Deaf (Northern

Sector/Northern Region). Two health facilities also participated - Salvation Army Rehabilitation Centre at Agona Duakwa and the Centre for Hearing and Speech Services at the University of Education, Winneba (both in the Southern Sector/Central Region). These two health facilities are equipped to cater for audiological and health services for diverse categories of individuals and have been actively operating for over 20 years.

Twenty-four (24) participants in total agreed to participate in the study comprising 13 males and 11 females from the two health facilities and three educational settings. Participants included head teachers, service managers, teachers of the deaf, audiologists, clinical technicians, volunteers, national service¹ personnel, support staff, and administrators. Of the nine clinicians that took part in the interviews, six were from the Centre for Hearing and Speech Services of the University of Education Winneba and three were from the Salvation Army Rehabilitation Centre at Agona Duakwa. All the clinician participants were hearing. Of the 15 educators that took part in the interviews, five teachers including the head teacher were from the Demonstration School for the Deaf at Mampong-Akuapem, seven teachers including the head teacher were from the Ashanti School for the Deaf, Jamasi and three teachers including the head teacher were from Savelugu School for the Deaf. All the teachers interviewed were teachers of the deaf from kindergarten one to lower primary. Three of the teachers (one from each school) were deaf. The table below provides an overview of the participants' professional roles and working context.

¹ National Service is a one-year mandatory service for recent graduates of tertiary institutions in Ghana. This service provides graduates with work experience in public and private sectors, as part of their civic responsibilities. They are usually paid a non-taxable allowance at the end of every month as approved by the Ministry of Finance.

Table 1: Health and Education participants

Participant (clinicians and educators)	Health and Education Contexts
Part time audiologist.	Centre for Hearing and Speech Services (CHSS)
Clinical assistant	Centre for Hearing and Speech Services
Audiologist and university lecturer.	Centre for Hearing and Speech Services
Volunteer support staff	Centre for Hearing and Speech Services
Volunteer support staff	Centre for Hearing and Speech Services
National service support staff	Centre for Hearing and Speech Services
Kindergarten (KG ²) 1 teacher ³	Mampong Demonstration School for the Deaf
Assistant head teacher	Mampong Demonstration School for the Deaf
Teacher of the deaf and house parent	Mampong Demonstration School for the Deaf
Teacher of the deaf (KG 2)	Mampong Demonstration School for the Deaf
Deaf teacher ⁴	Mampong Demonstration School for the Deaf
Head teacher	Savelugu School for the Deaf
Teacher of the deaf (KG 2)	Savelugu School for the Deaf
Deaf teacher	Savelugu School for the Deaf
Teacher of the deaf (KG 2).	Ashanti School for the Deaf
Head of KG department and teacher	Ashanti School for the Deaf
Teacher of the deaf	Ashanti School for the Deaf
Teacher of the deaf	Ashanti School for the Deaf
Head teacher	Ashanti School for the Deaf
Teacher and senior house parent	Ashanti School for the Deaf
Deaf teacher	Ashanti School for the Deaf
Administrator	Salvation Army Rehabilitation Centre
Rehabilitation officer and administrator	Salvation Army Rehabilitation Centre
Prosthetist and support staff	Salvation Army Rehabilitation Centre

² In mainstream schools, KG1 serves four-year olds and KG2 serves five-year olds. In schools for the deaf many children of six or seven years are still in KG due to late identification and reporting.

³ Some teachers in schools for the deaf have specialist training, others have graduated from general teacher training

⁴ Deaf adults employed to teach in the schools for the deaf. Most of them have teacher of the deaf training.

3 Methods

Whilst we provide this detailed overview of the different roles of our interview participants in each of these contexts, the direct quotations in this report are not linked to specific institutions and individuals for reasons of confidentiality and safeguarding. We have instead attributed the quotations according to the clinical or educational role. At this stage, such attribution provides a sufficiently informative reference for the thematic analysis.

3.1 Data collection

The original plan for the project was to bring practitioners together for focus group interviews, and to interview managers on a one-to-one basis. This plan was adjusted during the Covid-19 pandemic to take account of national and international travel restrictions, and social distancing requirements. To keep the research team and participants safe, interviews took place on-line, or face-to-face on a one-to-one basis (following all Covid-19 safety protocols). To achieve this, it was necessary to hire conference call facilities and provide additional internet connectivity bundles for the researchers and the participants. In this way, mobile phone calls and WhatsApp messaging could be used for setting up, carrying out and recording the interviews.

Interview dates and times were negotiated, and participants were provided with the project information sheet and consent form via email or WhatsApp as preferred at least three days prior to the interview schedule. On the day of the interview, phone calls and/or text messages were sent to remind participants an hour before the planned call. During the interviews, one RA made the phone conference call, introduced participants and the other RAs. Consent of the participants was taken, verbally and audio recorded. Time was allowed for questioning and clarifications from the participants after which the main interview continued. All the hearing practitioners chose for the interviews to be conducted in English. All interviews were audio recorded and transcribed verbatim by RAs. Each interview lasted between 30 - 60 minutes.

The deaf teachers of the deaf were interviewed after the social distancing measures had been lifted. These practitioners were initially reached through text messages and WhatsApp video calls and asked for their interview preference (face-to-face or on-line). The deaf teachers in the Southern and Middle sectors opted for face-to-face interviews through their respective

Sign Language interpreters and in full compliance with the national safety precautionary measures and protocols to ensure COVID -19 safety. These two interviews were video recorded. The deaf teacher in the Northern sector opted to be interviewed through WhatsApp text messaging.

The RAs created an English gloss of the GSL WhatsApp responses, and this was cross-checked among the Ghanaian interpreter team. The RAs met to come to a consensus on the faithfulness of the transcriptions, and these were further cross-checked by the Co-Is and the PO. The full written interview transcripts were anonymously coded and stored in the Microsoft Teams project folder and then moved to the dedicated, secure project folder on the University of Leeds (UoL) managed server infrastructure.

3.2 Data analysis

We took a bioecological approach to the analysis of the interview data to bring to light the range of influences on early development, care, and support, and to highlight the precarities of the context, and the resources available. This involved a four-stage coding process and the development of a coding handbook. Our coding system was structured around the four nested systems of influence that interrelate to affect early development, care, and support (Bronfenbrenner 2005; Bronfenbrenner & Morris 2006):

- i. *The microsystem*: the day-to-day contexts of children's lives (home, school, community), and the relationships and interactions within that context that involve the child, caregivers, siblings, friends, other carers, and their own characteristics and belief systems.
- ii. *The mesosystem*: the interaction, interplay and processes that take place between the different environments (*microsystems*) surrounding the child such as the interaction between the child's family and other families in the community, communication between home and school, or home and the audiology clinic.
- iii. *The exosystem*: the interaction, interplay and processes that take place between two or more environments that are external to, but indirectly influence the individual. For example, the caregivers' engagement with school and/or clinic, interaction among the

local community, with, for example, the local association of the deaf, the communication between the school and the hospital/clinic.

- iv. *The macrosystem*: the overarching context of a given society including institutional and policy influence, societal infrastructure, ways of life, culture, belief systems and resource dynamics.

The analysis process involved four stages that were completed over a six-month period. During this time, weekly RA and whole team meetings took place on-line to review interview material and develop consensus around the interpretation of participant responses, the assignment of thematic categories, and the identification of main and sub-themes. This process resulted in an analysis code book that could then be used by all team members to further analyse, describe, and report on the interview data.

3.2.1 Analysis stage 1.

The interview transcripts were colour coded according to the four bioecological systems of influence. The RAs individually colour-coded extracts in each of the interview transcripts that relate to influences on the early care, education and support of children who are deaf, and their families. The RAs then met to reach a consensus about the influences that they had identified and collectively ascribed them to the microsystem, the mesosystem, the exosystem, and the macrosystem. The full research team then met and reviewed a sample (six of the 24) of the transcripts to confer on, and agree, the assignment of influences according to the four bioecological systems.

3.2.2 Analysis stage 2

Themes arising from stage 1 were grouped in relation to the four systems of influence. Using the initial colour-coding, the RAs deconstructed the interview transcriptions and grouped key extracts of the transcripts under the four main bioecological categories. The RAs then worked individually to search for recurring topics within these extracts to identify main themes within each of the four categories. Their consensus about the emerging main themes was then reviewed by the whole research team. The extracts were then analysed and discussed by the full team to reach a consensus on the 13 main themes arising from the interview data.

Table 2: Main themes according to the bioecological systems

Bioecological influences on early support	Themes arising from the interview data
The microsystem: Influences on early support at the level of the individual and their day-to-day relations and interactions	<ul style="list-style-type: none"> • Child characteristics • Family and community context and practices • Language and communication • Understandings of deafness
The mesosystem: Direct influences on early support at the level of context such as home, school, clinic, playground, church etc.	<ul style="list-style-type: none"> • Professional training, experience and skills, • Professional resource and strategies • Intervention and support • Parental engagement and expectations
The exosystem: External, indirect but interacting influences on early support at the level of context	<p>Communication and collaboration</p> <ul style="list-style-type: none"> • between schools • between professionals
The macrosystem: Societal and cultural influences on early support including institutional and policy influences	<ul style="list-style-type: none"> • Health and Education Infrastructure • Government policies and implementation • Societal attitudes, beliefs, and understandings

3.2.3 Analysis stage 3

Through further review of the interview extracts, and where there was the need to return to the full transcripts, we undertook a fine-grained breakdown of the main themes to identify subthemes within each system of influence. This was an iterative process that involved small group and whole team meetings to review, discuss and contextualise different interpretations of interview extracts. Sub-themes were identified and agreed, and the coding handbook was completed. The coding handbook was then used by all team members to provide a deep analysis

of the interview data and a framework for interpreting and describing the data in bioecological terms.

3.2.4 Analysis stage 4

The final stage of analysis involved a review and discussion of the risks and opportunities associated with each of the identified influences. This process drew on the deep contextual understanding of the interview data that the Ghana research team brought to the analysis, and our wider understandings of the optimal conditions for early support and development. This enabled us to debate and understand the thematic findings in terms of the precarities and resources that might constrain and/or enable early support in this specific context.

4 The educational context

Interviews took place with practitioners from three schools for the deaf: Demonstration School for the Deaf, Mampong (Southern Sector/Eastern Region), Ashanti School for the Deaf (Middle Sector and Ashanti Region) and Savelugu School for the Deaf (Northern Sector/Northern Region). The schools were able to provide us with some contextual information about the educational setting, the personnel, and the cohorts.

Demonstration School for the Deaf is a residential school that was established in 1967. The school started in Osu in Accra, the capital city of Ghana. The school serves about 400 girls and boys aged between 4 and 18 years with hearing loss profiles ranging from severe to profound and typically come from the Eastern and Greater Accra Regions. The school offers all the academic subject of the Ghanaian basic school curriculum except Ghanaian Languages and French. It has five main departments, Kindergarten (KG), primary, Junior High School (JHS), vocational training centre and the deaf-blind unit. The language of communication in the school is Ghanaian Sign Language. Additionally, a range of other multimodal communication strategies including facial expression, gesture, dramatization, and demonstration are used during teaching. The school has 67 teaching staff and 58 non-teaching staff. The non-teaching staff include kitchen, laundry, maintenance, artisans (usually skilled deaf workers who support vocational skills) and house parents.

Ashanti School for the Deaf is a residential school which has been in existence for about 42 years. The school is in Sekyere South district in Ashanti Region. It has pre-school program, KG, primary, JHS, and post JHS for about 500 students with hearing loss profiles ranging from moderately severe to profound. Students typically come from the Ashanti Region. The post JHS is a vocational training which comprises Kente⁵ weaving, sewing and leather works. The school has an assessment centre and a unit for children who are blind. The school runs the same academic calendar as the Government schools and participates in the same national examination system as mainstream schools for the basic level, and then offers the National Vocational Technical Institute (NVTI) exams at the end of the vocational training. The school has a preschool (3-5 years) where young children come with their caregivers to learn basic sign language and to prepare the child for school. This provides the children with sign language skills to build on in KG. The preschool also admits older deaf children (6 – 13 years) in the case of delayed enrolment.

Savelugu School for the Deaf is a residential school for the deaf comprising 22 non-teaching staff (secretary, bursars, store keepers, cooks, drivers, security men, labourers), 23 regular teaching staff and two NABCO⁶ personal. The school has enrolment of 326 students with hearing loss profiles ranging from moderately severe to profound. The school admits students from the Northern Region of Ghana and the staff are deaf and hearing. The school has KG1, KG2, and primary (or basic 1 to basic 6) and Junior High School (JHS).

All three special schools for the deaf in the study use GSL as the language of instruction for their learners (from kindergarten through senior high). This has been in place since 1995 when the Ghana National Association of the Deaf lobbied the Government and the Ministry of Education to recognise GSL. This expectation is documented in Section 21 of the Persons with Disability Law (Act 715) (2006)

⁵ Kente refers to a Ghanaian textile, made of handwoven cloth, strips of silk and cotton usual worn in high functions and ceremonies

⁶ Nation's Builders Corps, is a Government of Ghana's temporary work programme designed to address graduate unemployment and social problems. These individuals are recruited across all sectors of government institutions and are provided with non-taxable monthly allowances.

'The Minister of Education shall by Legislative Instrument designate in each region public technical, vocational and teacher training institutions which shall include in their curricula special education, such as (a) sign language, and (b) braille writing and reading', (Republic of Ghana, 2006, p.7).

Teachers in the schools are not all specialised in deaf education, although some have special educational needs training. Others come straight from Teacher Training College (now called Colleges of Education) and have completed an introductory course in special education. Most of the support teachers and the non-teaching staff, such as house parents and security, kitchen and maintenance staff are untrained, and many are volunteers. One of the implications of this is that the levels of sign language skills among school staff is low. Trained teachers have basic skills. Teachers who come straight from colleges of education, do not have any formal sign language training although may have learned signed language informally (through the church, the home community, deaf peers, and colleagues). All three schools offer sign language classes for the teachers and non-teaching staff.

5 The clinical context

Interviews took place with practitioners from the Salvation Army Rehabilitation Centre at Agona Duakwa and the Centre for Hearing and Speech Services (CHSS) at the University of Education, Winneba (both in the Southern Sector/Central Region). These two health facilities are equipped to cater for audiological and health services for diverse individuals and both have been actively operating for over 20 years.

At the time of writing, the Winneba Centre for Hearing and Speech Services serves 25 children (10 boys and 15 girls) between the ages of 4 – 17 years with levels of sensorineural hearing loss ranging from mild to profound. The average age of diagnosis among this group is four years. In some cases, levels of deafness information may not be very accurate since equipment that may be used to give precise hearing measurements of the deaf child, such as Auditory Brainstem Response (ABR) Audiometry equipment, is not widely available in Ghana. Pure tone tests (PTA), are most common in Ghana. This test is available at CHSS and this

information is supplemented by a parent questionnaire (LittleEARS). This is an adaptive auditory speech test (AAST), that gives a more precise idea of hearing levels.

The Salvation Army Rehabilitation Centre was established in 1986. The role of the centre is to provide rehabilitation services to children with different physical disabilities, especially cerebral palsy. The centre also facilitates the assessment of young deaf children for school placement and helps with the acquisition of hearing aids for the children. At the time of the study, the centre serves 39 deaf children (up to the age of 18). The centre receives children from the Central, Greater Accra and Eastern Regions of Ghana and provides caregivers of deaf children with counselling services and facilitates parent-to-parent support. The Salvation Army collaborates with various agencies and institutions to provide rehabilitation services, referrals and assessments to young deaf children and their caregivers.

The Salvation Army also collaborates with the Department of Special Education, The University of Education, Winneba (UEW) through the Centre for Hearing and Speech Services (CHSS) to offer hearing screening, assessment and hearing counselling services for young deaf children and their caregivers. Through this collaboration, the Salvation Army receives student interns who are trained in teaching and rehabilitating young deaf children from the UEW on yearly basis to support the children they receive at their centre. In addition to these organisations, the Salvation Army collaborates with the Ghana Health Service, Christian Health Association of Ghana, and refers young deaf children for medical rehabilitation. The District Assemblies within the Agona Swedru (Central Region of Ghana) provide funding support through the Salvation Army to assist young deaf children and their caregivers.

6 The Microsystem: Themes and subthemes emerging from the interviews.

Analysis of the microsystem focused on the influences on early support at the level of the individual and their day-to-day relations and interactions. The main themes arising from the interview data centred on child characteristics, family and community context and practices, language and communication, and understandings of deafness.

6.1 Child characteristics

The participants described their working contexts and talked in general terms about the children that came to the school and/or the clinic in terms of hearing characteristics. They did not discuss individual children but gave us an overview of the school cohorts and clinic client-base.

A general concern of the teachers is that the children come to school without the language and communication skills needed for learning. They talked about their job of education in terms of 'starting from scratch', regardless of the age at which the children come to school. It is not unusual to have a child as old as 13 years starting in kindergarten (instead of the normal 4 – 5 years). It may also be the case that some mothers do not know the exact date of birth of their deaf children so the age stated in the school entry interview may be an estimate provided by a clinician during the initial diagnosis.

They know nothing about sign language, they know nothing, so that is where we start teaching them everything. Due to their disability their age is a little bit higher than at a normal school some maybe at least they have 6, 7 and you even get about 13 years who will be in KG 1. (Educator)

This issue of the late age at which some children arrive in school 'already grown' (sometimes as old as 18 years) and the subsequent learning delay was a shared concern among all the teachers and head teachers. Late diagnosis has implications for early identification and subsequent early intervention of auditory impairments among individuals with educationally significant auditory losses. They talked about this from their perspective, in terms of the difficulties of teaching older children in kindergarten. They emphasised the importance of a child-centered approach, and a focus on the needs of individuals.

We want to help the children no matter where they are coming from (...). We are dealing with children with special needs so if you base your assessment on one type you will not be fair to others. (Educator)

In this context, the teachers talked about their own approaches to differentiating and adapting the curriculum according to the children's needs, despite a lack of material resources and the difficulties of working with the language and literacy curriculum expectations.

You see that the thing is not uniform because the curriculum is not catered for the children (...). Sometimes we have to meet and plan our own way how to go about a certain topic. The curriculum is such that if you are following then your children who are deaf will not benefit from it. (Educator)

The teachers also talked about the difficulties that the deaf children have in learning to socialise at school. Some of these children are subjected to various forms of harassments, teasing and other forms of physical abuse even by close relatives as a result of their deafness (Fobi et al., forthcoming). Teachers reported that they appear not to trust anyone, remain shy or choose to distance themselves from other children.

They won't talk. When their friends are playing, they won't mingle with them. They isolate themselves from the people. (Educator)

Teachers and clinicians specifically mention the presence of additional disabilities. Focusing specifically on learning ability and attention, the teachers refer to additional disabilities as a barrier in terms of teaching and behaviour management. Because of the paucity of tests to diagnose specific disabilities, most of these are labels based on speculation by some of the professionals. Disability is described very much as a child-centred precarity that poses issues for classroom and behaviour management such as keeping children in the classroom or sitting at a desk.

(...) some of them have multiple disabilities and the teaching of the deaf and those who are young is not an easy task. So we've been doing a lot about them, some of them are hyperactive, they cannot sit at a place for a long time. (Educator)

The way in which teachers talk about additional disabilities suggests an underlying taboo and lack of information available to teachers about different learning profiles and behaviour characteristics. One teacher remarked on the difficulty of gathering full information about the children coming into school.

Sometimes, you know our Ghanaian parents when they are coming for the preschool and you ask them their problem or case history or something, sometimes some people hide certain things, thinking if I tell them my child is having this and that maybe they will not admit him/her in the school. So what we do is, sometimes the child will come, you will

identify a behaviour, you will call the parents and ask them please have you noticed this about your child? They will tell you no, I don't know about it. (Educator)

Teachers talk about behaviours that they are not sure how to describe, classify or categorise but nonetheless adapt their teaching to suit the learning and social needs of such children.

Some of them have problems with their sight so maybe the time you were teaching she was following but the time you are aware she didn't get it, if the child is able to role play, you will narrate you bring the child close to you and you narrate the story and if the child is able to dramatize or role play then you see this part is also good, you don't base on chalkboard only. (Educator)

The clinicians also comment on the presence of additional disabilities and specifically mention autism. These remarks are consistent with the national statistics in relation to the co-occurrence of hearing loss with additional disabilities and taking into account the cohorts of the clinics and schools (Yu & King, 2016).

6.2 Family and community context and practices

The interviews with the professionals provided some insights into the children's home lives, and family and community practices. The teachers expressed concern about the deaf children's home lives. Their judgments were based on their knowledge of the home contexts, interactions with caregivers, and their experience of the social and cognitive development of the deaf children/young people on school-entry.

Teachers are concerned that deaf children are not encouraged to take part in the life of the home or engaged in routine activities such as cooking and washing clothes. They see this as constraining the development of the independent living skills of learners.

Some pupils will come to school without knowing how to cook, even the grown-up deaf girls. If the parents come, we tell them to involve them when they are cooking, teach them how to wash their clothes. (Educator)

The teachers talk about the children 'not being allowed' to sweep the compound, wash clothes or cook and describe the hesitancy and lack of confidence of the parents to give their deaf children household chores, or encourage independent self-help skills (such as carrying their own school bags). The teachers are proactive in trying to counter the high level of dependency

fostered in these homes. They are direct in their advice to parents about including their deaf child in family routines.

This small thing, they can wash bowls, they can sweep. But some parents they will not do. They will say I don't know how to tell the child to do this or that. We tell them is not good we have been telling them that they should let the child do some. (Educator)

They also teach the skills in school that are not being fostered in the home.

We have started teaching them cooking because majority of the students when they go home, they don't do anything and their parents too do not call them while they are cooking. So we do it once in a month. If we are preparing something, some will cut onions, some will grind pepper, and some will fan the coal pot. (Educator)

6.2.1 Caring roles

Descriptions of the residential school environment reveal the extent to which teachers and house parents, who take care of the children after classes or when they are not well, play a central caring role in the deaf children's lives. The house parents (usually referred to as house mothers) are regarded as the linchpin in the children's daily lives.

The house mothers have all the contacts of the children on their chalk-box and other things, like if something is wrong or they need other things from them or to remind them that maybe your child is in my class for a whole two term and we have never seen then you have go the house mothers or the senior house master to take it from them. (Educator)

The caring role of the school at times replaces the interest and care from the home environment. One teacher reported that parents sometimes prefer to leave their children in school, during the holidays than bring them back to the homestead.

(...) but some, when they bring the child to the school, that's the end. During vacation, we find it difficult for them to come for the children. (Educator)

Some of the comments by teachers and clinicians suggest that children experience less than loving home environments and go so far as to describe parental disinterest or the inability to engage with their child, neglect, and the use of physical measures to manage behaviour.

Teachers report the difficulties of engaging the parents in the child's school life and learning through, for example, attending PTA meetings, supporting the children to do their schoolwork in the holidays, and not looking after the resources sent home by the schools. Teachers express concern about the general lack of communication at home and the extent to which this sets the children back in terms of their learning.

One clinician talks about a child being beaten at home for not wearing their hearing devices. This clinician remarked on the difficulty of getting involved, monitoring, and intervening in the welfare of children in certain communities suggesting that the social welfare system in Ghana does not have sufficient oversight of children who are vulnerable, or have the power to take action. He advocates for peer (parent-parent) support and mentoring as the most direct and effective way of supporting the children long term.

(...) parents should also be exposed to others in similar situations (...) like a mentor example in the community. (Clinician)

6.2.2 Financial constraints

Educators and clinicians also highlighted the different constraints on the families in terms of their income, their livelihoods, and their own educational experience. The widespread poverty in Ghana is understood to place huge constraints on family's access to education for their children (Amoako, 2019). Family income fluctuates especially for small traders and farmers, and where there are financial difficulties deaf children are often overlooked. Most of the clients visiting CHSS to assess their deaf children are mothers. Few fathers get involved. Many of the mothers are single, unemployed or doing poorly paid jobs, and likely to have other children to take care of. Many fathers leave and divorce due to societal remarks and attitudes toward them because they have a deaf child. Even when philanthropic funds are made available for their education these are sometimes diverted to the needs of other children in the family

I know that the district assembly give them common fund, but it doesn't flow and majority of these parents are single parents, and these children also have other siblings, so when the parents collect the money from the district assemblies, they use some for those who are not special needs children. (Educator)

6.2.3 Education

Several of the interviewees mentioned the educational background of the parents as indicative in terms of their ability to support their children with preschool skills (counting and reading), and recognise progress. The levels of literacy of the parents influences the extent to which they can provide learning support at home.

Some of the parents are illiterate so am not sure that when we give it to them they can do it. After every end of term, we give them the A4 sheet so maybe they can draw, we put it in the assessment book for them to go and assess it in the house but they will bring it back without doing it. (Educator)

Those parents who have had an education are able to engage in the child's learning, and to see and talk about improvement.

Those who are educated will say that oh you did well, my child can count this, when he was at home he did this and that so I have seen that he is improving. (Educator)

Where parents are not educated, they find it more difficult to help their children's learning at home. The teachers tend to direct them to find support in the home or community setting.

6.3 Language and Communication

Discussion of the children and their home lives was very much dominated by issues of language and communication. The precariousness of children's language development presented a central concern for clinicians and educators, but they also spoke of the rich language resources and communicative strategies in the home context. The diversity of languages in the day-to-day lives of the children was mentioned by many of the practitioners. They spoke of the diversity of spoken languages used in the home context.

So we have many different languages (...) Akan, Frafra, some are Bono, Dagomba, and many many languages. (Educator)

(...) most speak Twi, because the Twi is the common language everybody speaks. English, some speak Fante, Ga, Bono and Dagbani. But most speak Twi (Educator)

The teachers also talked about the use of GSL in the schools as the recognised sign language that all the children start with on entry. The school environment is thus a melting pot of different

languages because of the different spoken language backgrounds and different uses of sign language in the homes with parents and siblings.

The second main issue that they identify is the parents' inability to sign with their children. The clinicians and teachers spoke about the difficulties that the parents experience in communicating with their deaf children because they do not know sign language. The teachers commented extensively on the children's lack of access to communication until school entry when sign language teaching begins at a very basic level.

The KG1 teachers will take them through few alphabet and few concepts (...) but their language background is not all that strong. (Educator)

They also commented on the consequences of limited communication at home for children's development and understanding of the world and the extent to which the lack of communication at home constrains the ability to support the child's homework and learning

New students who come here don't know anything including the laws and also unable to sign because their parents did not teach them. (Educator)

At the same time the teachers provide many examples of the multiple ways of communicating that some parents deploy, such as the use of gesture, actions, writing and the development of a home sign language.

(...) some use writing, some by pointing to whatever they want them to know, some use body language. Educator

They suggest that the parents find other ways to communicate, and that children learn language from the opportunities around them

Their parents use the local language in a form of gestures to communicate to them.
(Educator)

(...) the children just pick up the language because they are in their natural environment.
(Clinician)

The teachers and clinicians talked about their communicative responses to the children in terms of the strategies that they use and the way they adapt to the communication needs of the families.

To me most of the clients I have met at the front desk understand the language I know which is mostly Twi and sign language so if when the client comes in, (...) the greeting can tell what language they speak. (Clinician)

6.4 Understandings of deafness

Clinicians and teachers talked about the parents' lack of understanding and knowledge and how this reflects on the treatment of their deaf child. Their comments suggest that parents do not understand the nature of deafness, what it means for their child and that they are not informed in terms of how to look after and communicate with their children.

(...) some of them don't even understand the nature of these deaf children, they themselves don't understand how they behave, how they learn and how they must be treated. (Clinician)

Teachers talk about the reluctance that parents have to talk about their children and their rejection of their deaf child, linked to stigma and frustration.

When they come to PTA we talk to them. Even some have rejected given birth to deaf individuals, they feel shy. (Educator)

They describe how these feelings are manifested in the way in which deaf children are excluded from family and community life and report that parents do not want people to know that their child is deaf, and to have their child compared with hearing contemporaries who are doing well. Behaviours resulting from this fear, shame and embarrassment can be quite extreme.

Some of the parents I let them know that when they going to any place they should take them along when they are going to church, market even some of the parents are ashamed of the children having a deaf child. They lock them up in the house and do not take them along when going outside. (Educator)

Teachers comment on the effects of this exclusion on the children in terms of isolation and self-esteem, feelings of not being loved and the experience of being cut off from communication.

The kid thinks that is you that you don't like them, so we are doing our best, but some of the parent are not helping. (Clinician)

The caring role of the teachers in deaf children's lives is accentuated by these comments that are sometimes critical of parents, sometimes understanding of their predicaments and of the societal pressures but that stress the importance of unconditional love and care.

(...) they shouldn't just conclude and say because he is deaf, because of what he is doing you don't understand you just hate him or something like that. They have to always show love.

(Educator)

7 The Mesosystem: Themes and subthemes emerging from the interviews.

Analysis of influencing factors at the mesosystem level focused on direct influences on early development and support resulting from the interplay and processes that take place between the different environments (microsystems) surrounding the child. This included consideration of interaction between the child's family and other families in the community, communication between home and school, or home and the clinic setting. The main themes arising from the interview data centred on professional training, experience and skills; resources and strategies for intervention and support, and parental engagement and expectations.

7.1 Professional training, experience, and skills

7.1.1 Educators

The training, experience and skills of the education and health practitioners in contact with the children and their families is a key resource. In the schools for the deaf, different experiences of qualifications and training were reported. Teachers in the schools are not all specialised in deaf education, although some have special educational needs and disability training. Others come straight from Teacher Training College and have completed an introduction to special education. Most of the support teachers and the non-teaching staff are untrained, and many are volunteers.

One of the implications of this is that only the teachers who are specialist teachers have basic sign language skills. That said, all of the schools offer sign language classes for the teachers and non-teaching staff. The communication skills of the teachers are seen as a priority.

To be able to deliver your lessons, you have to be conversant in the sign language. (...) therefore every week, we have sign language lessons and that is led by one of the deaf adults whom we have identified to be very good. (Educator)

Beyond the training offered teachers also take responsibility for training themselves and for finding the resources that they need for delivering the curriculum appropriately.

I go to net when I want to write some lesson notes and the topic, I type the topic, when I finish typing I add deaf to it. So they will change it to the deaf level so that I can use that one to write my notes. (...) When I go to net, I download a sign application. Before I will go to class, I have to sit down at night and practice. I use my phone to practice what I am going to teach in a sign form. That one helps me to use the sign properly to teach the children. So there are three ways I use to prepare my lesson concerning the new curriculum. (Educator)

The development of a skilled workforce in the schools is constrained by the reported high turnover of teachers in special schools, and thus an instable teaching workforce. Educators suggested that this is influenced by a general disrespect for special schoolteachers.

Teachers are not motivated to stay (...) they think that there is disrespect for teaching special schools so they will come and stay for only two years when they have acquired the sign language skills. And new set comes in fresh without any skills, then they have to learn the language all over. And that one impedes the progress of the children. (Educator)

7.1.2 Clinicians

The clinicians bring specific skills, expertise, training and resources to the family support network. The senior audiologist that participated in the study has undergraduate (BSC) and specialised postgraduate training (MSC) in deafness and audiology. The audiological clinical assistants have undergraduate training in special education and speech and language therapy. After pre-service training, the clinical assistants continue to be trained in-service about audiological assessment, hearing aid fitting, pre/post hearing aid fitting and guidance and counselling of parents. There are also many people working in the clinics on a volunteer basis. These may be national service personnel or students who are taking courses in basic audiometry, clinical practice, and speech and language therapy, who come for an internship attachment.

Some may have done their four-year undergraduate course in Special Education, or some other course not related to special education. In-service training and sign language tutoring is provided.

The clinicians report that they have the equipment that they use for assessment (audiometers, tympanometry and auto-acoustic emission equipment) as well as resources for ear irrigation and also for play audiometry. They also refer to the use of a parent questionnaire developed by one of the senior clinicians called the littleEARS auditory questionnaire. This is intended for use with caregivers of infants and young children to identify and establish details about their children's hearing loss (Lund, 2018).

The clinicians talked about the flexible ways in which they work with parents and children, according to their needs, communication preferences and experiences, particularly where they are working with children with multiple disabilities. They describe the intensive work that they do working with families with different communication strategies that might involve writing things down for parents and the importance of the training that they give to parents in using the technologies and assistive devices and maintaining and taking care of these resources.

In the clinical environment, sign language is used by all of the professionals and an ability to communicate with deaf people is expected of all employees. As part of their role, they give general advice to parents about communication and in doing so emphasise 'difference' and not 'deficiency'. They emphasise the connection that the use of sign language with their children will give them.

We try to educate the parent on the need to learn the sign language so that he or she can communicate with the child. Because we always tell them that, the child will be very glad if the mum or the dad also sign, because they are also in their own world. So, we always advise them to always draw closer to their children and learn the sign language.

(Clinician)

Sign language is an essential part of their work with the children and the assessment process, and when they cannot use sign or spoken language, they use multimodal approaches.

If the child has started schooling, then we communicate in sign language. If the child is yet to start, then we use these gestures. You know we have some natural gestures, body part movement, yes so we use body languages to communicate with the child. (Clinician)

7.2 Professional resource and strategies

7.2.1 Educators

In terms of teaching practices, a strong and recurring theme was the strategies and approaches teachers described that they used for engaging the children in learning and fostering success in the classroom. The teachers talk about their use of teaching aids such as web materials, pictures, flashcards, counters, realia, writing and drawing materials that they use to make learning more accessible. They also comment on the availability and the affordability of these resources.

We go to the internet to download our syllabus and textbooks from there. We use flash cards. GES⁷ gives us some allowances and we bought card boards, and other things like marker pen, some pencils, exercises books and some teaching aids. They bought some teaching aids for us. (Educator)

Aside from the enhanced use of materials teachers adapt their style and pace to support understanding in the classroom. They describe the ways in which they seek to make difficult concepts and lengthy explanations accessible, including the use of hands-on experience and real life experiences beyond the classroom such as visiting the market, the post-office, church and mosque.

We don't use sign language alone, sometimes we use dramatization and we do use a lot of materials, facial expression and then performing in the classroom you have to use a lot of materials for the kids to get the things clear. If there is the need for field trip, you have to take the kids out so all these things go in the learning process. (Educator)

This includes the use of interpreters and sometimes making television programmes and films accessible.

⁷ Ghana Education Service (GES) is a body under the Ministry of Education that seeks to create an enabling environment in all educational institutions and management positions that will facilitate effective teaching and learning and efficiency in the management for the attainment of the goals of the service.

We use movies. (...) When they are watching the television we make provision for interpreters to explain the activities on the TV. (Educator)

The teachers' responses illustrate their flexible and multimodal approach to communication and the different ways of supporting understanding with the communication skills available to them. As well as focusing on the teaching and use of sign language, the teachers talk about the use of gestures and facial expression to support the children's language, vocabulary, and communication development.

We also use total communication, which includes facial expression, gestures, dramatization demonstration and any other mode to transfer information used in learning. (Educator)

They recognise that sign language alone will not support the children's learning without additional support and explained experiences and describe how they are building on the communication skills that the children already have

We build on their language by basing on the gestures they already know we base on their signs and gestures to build on the accepted language. We do this by pointing at objects severally, sign and they also sign and points after us. (Educator)

The teacher's willingness to differentiate and adopt their teaching approaches is generally underpinned by positive attitudes towards the learners. They communicate an expectation that the children can learn and that, as teachers, they can make a difference. This attitude comes through in the way that they support and encourage the parents of the children to have high expectations of their children.

I have some children in the class who are brilliant, so I tell the parent that this child is brilliant so if you cater for him, he can be better than the hearing children. So I advise parents and give them moral to cater for their wards who are brilliant. And even the others who can't cope with syllabus or the learning, we encourage the parents to look after them so that they can achieve something. (Educator)

An area of concern that recurs in the educator's interviews is the difficulties that they experience in following the same curriculum and learning materials for deaf children that were developed for hearing children. The teachers talk about the difficulties of using the general curriculum

assigned by the Government especially in terms of the emphasise on speaking and listening, the teaching of phonics, literacy and the assessment processes (although deaf students do get more time). They are expected to modify this general curriculum to suit the needs of each deaf child. The skills involved in doing this modification are taught to them during pre-service training as well as during on-the-job and in-service training sessions.

We are using the same books as the regular students (...) they should print it in the sign language form for us, that will be far better for the children, because we are struggling to explain the words or sentences to them. We are using the same books with the regular students. And we are using the same syllables with them which is not fair, we have talked about it several times but still. (Educator)

We use the same curriculum with the regular school given by the Government. Sometimes is very difficult to use the curriculum to teach children so I sometimes I must adjust the topics and use a different method that will suit the children to teach. (Educator)

7.2.2 Clinicians

The work in the clinics is also hampered by lack of resources and a stable workforce. The clinicians talk about outdated and non-functioning basic equipment such as audiometers, tympanometers, Oto Acoustic Emission (OAE) equipment and otoscopes. They also worry about the lack of permanent trained and skilled staff, the inadequacy of in-service training and their reliance on volunteers with limited training. Neither of the centres has a speech and language therapist (SLT).

Currently we do not have a speech therapist, however from time we get volunteers, speech therapist volunteers from Germany and USA who come around to attend to some of the children. (Clinician)

They also comment on the need for more engagement from parents and describe the precarious lives of deaf children in contexts where their deafness is not understood. They see themselves as a vital link in the support system.

Support from parents is difficult, you have few parents who understand and are ready to go all out to and support their kids but for some of them without us the children would have been dumped elsewhere. So that is the challenge. (Clinician)

7.3 Intervention and support

Alongside the encouragement to pupils, the teachers provide specific advice and guidance to the parents by encouraging them to engage in their children's education, learn sign language, and support their children with homework. They also encourage the parents to help children with their schoolwork.

When the term ends, all the parents come to school take their child or their people home. We explain to them that your child, he finds it difficult to write, so when you go home please try to help. (Educator)

They also talk to parents about allowing their children to socialize with other children outside of the school environment, and to involve the children in the home life and chores.

I tell parents when their children come home, allow them to do the things in the house, sweeping, washing their clothes. They should allow them to do it by their selves so that when they grow up, they can do it by themselves not someone will do it for them. Because they are regular, normal people like they the way we are. (Educator)

A major part of this support involves letting parents see what their children can do and encouraging them to valuing their child. They try to help parents to see that their child is not a burden and that having a deaf child is not a punishment or a 'curse'.

We advise them that they also a human being they can do everything that the hearing children can do. Even some deaf children are better than the hearing so when they are going they should take them along. They should take them to church every social gathering they should take them so that they will also feel happy. (Educator)

The teachers also teach the parents sign language and encourage them to learn GSL in their communities to facilitate communication at home.

I also tell parent that, when he finds a teacher who can sign in the community, he should try and pay him so that he can teach the child in the home. (Educator)

7.4 Parent engagement and support

In the educational context teachers and headteachers refer to the use of the Parent Teacher Association (PTA) meetings to encourage parents to communicate with their children and to

specifically teach parents aspects of sign vocabulary that will support the children's learning. These meetings also provide opportunity for parents to mingle with the deaf pupils and become more confident with their interaction. They also use these occasions to educate the parents about their children, and where possible involve other members of the family such as siblings.

We always educate the parent sometime during PTA meeting we always let the parent come as early as possible before the starting of the actual meeting we teach them basic sign language so that when their kids are in vacations, they can communicate with them, that is one. Two when they come to classroom we the teacher tell them how they can communicate with their kids and how they should support their kids especially for them learning at home because sometimes when they go on vacation they will come back forgotten everything thing that they have been thought, so that's the ways we allow the parent to help so we always tell them to get some manual books or something like that especially when they have younger brothers who can learn the language quickly we give them some those are on WhatsApp we send them the sign language manual so that they can learn and be able to teach their kids. (Educator)

The PTA meetings are also an opportunity to foster caring relationships in the home. Many of the teachers expressed concern about the emotional support of deaf children in the home setting and see it as their role to intervene.

We do talk to them like how to take care of them, they shouldn't neglect them, they should take care of them as their hearing children. They should be loved, like whatever they do to the hearing child, they should do same of the deaf child, and whatever they ask for in the house should be provided. (Educator)

However, not all parents are able to attend PTA meetings, and as one teacher pointed out, the gap between meetings is sometimes too long to maintain a continuity of support, and language and communication skills. This teacher pointed out the need for more home-based support.

So some of them after the PTA they learn it and go away so the next time they come they have forgotten, so if those materials are available with them in the houses in their home they can learn them and also help them to communicate with their kids very well. (Educator)

The teachers identify that the continuity of communication with the parents is a problem. There are sometimes chronic financial constraints on the parent's ability to attend PTA meetings or follow up school support. The difficulty of engaging parents in school activities is also explained by their lack of confidence with education in general.

We suggested that they should come but they will not even come. Sometimes we want them to come to class and look at their children's performance, even their books and others. The only thing they want to know is the food that they bring to the children. (...) Those who will come will appreciate the work we are doing there but the others, I don't know whether they are not educated, I don't know. The only time we get with these parents is when we are going on vacation. We hand the report card to the parents and through that we will communicate with them. (Educator)

In such cases teacher-parent interaction is sparse. Teachers try to engage parents with the support resources around them and express some frustration when their support is not taken up.

We encourage the parents to guide their children by giving their books to them to work just to guide them they don't do. I have called several parents to follow up the TV learning on Ghana Learning (GL) television and even that they don't do. They include sign language as well and so the parents only need to guide the children to follow the lessons and do the activities. Since they can't communicate with them, we show samples to them to guide the children as such but they are not helping the children. (Educator)

Teachers often go so far as to take on the role of carer especially where they are concerned about the quality of care in the home setting and have fears about the parents' ability to look after their children. This level of care can extend to financial support or taking on a more official parenting role.

Some of them will say that am a single parent, I don't have money. Sometimes we buy food for some of them, sandals, panties, towels and other. I have even adopted one of the boys, I don't know his mother and his father too is dead. So, I brought that boy to my house and am taking care of him. (Educator)

In the clinical context the engagement with education and learning is also encouraged and the clinicians are often instrumental in getting parents to sending their children to school and start learning sign language. Getting as far as the clinic for a medical information of a hearing loss is recognised as a significant hurdle for parents but once this connection is made clinicians also seek to build parent expectations for their child.

When they gather the courage and bring their children, we are able to show them some students who have climbed the academic ladder and how their parents helped them to succeed. (Educator)

For some parents this will be the first connection with people who know about and understand childhood deafness and who can explain what is possible.

When they are able to get to know that some deaf can also attend school even to the university level they are delighted. Some are willing to learn the sign as well to take the children to schools. (Clinician)

The clinicians talk extensively about counselling and the emotional support that they offer to parents. Their comments underline the emphasis that they give to 'acceptance' and 'hope'. And the importance of having normal expectations for their child.

We tell them they can attain any goal that they want to achieve whatever they want to be life, they can be by going to school. So we always advise the parent they should never do that, they should always provide. This is the time the child needs them most. They should make sure they take the child's education very seriously, with that the child can also get to the highest level. (Clinician)

Where possible clinicians facilitate parent-parent support, and they try to enable parents to meet interns who are deaf. Their advice and support focuses strongly on expectations.

We tell them that all hope is not lost. They can achieve all that they want to achieve in life. Because we admit students who are deaf in the university, University of Education Winneba, we always use them as an example that we are having some students who are deaf, and they have gone through the basic education and climbed to the tertiary level and doing so well. Even some of the parent sometimes meet the students who are deaf

and will be communicating so in seeing them, they will even be happy seeing them.

(Clinician)

The work of educators and clinicians as key actors in the lives of deaf children and their parents is characterised by the different ways in which they seek to mitigate the societal stigma attached to deafness and the subsequent difficulties that parents experience encountering and navigating the educational and clinical contexts. The work of teaching and of audiological support is combined with intervention that focuses on communication, care, confidence, and expectations. Given their role in the daily lives of families and their professional agency they are a crucial connection and potential advocates for deaf children and their caregivers.

8 The exosystem: Themes and subthemes emerging from the interviews.

Analysis of influencing factors at the exo level focused on the interaction, interplay and processes that take place between two or more environments that are external to, but indirectly influence the individual. Examples of influences at this level might include communication between the school and the clinic, interaction between professionals and/or between the local community and the local association of the deaf. The main themes arising from the interview data centred on communication and collaboration between schools, and between the educational and clinical professionals.

8.1 Interaction and collaboration between professionals

The primary connection between the education and hearing-health contexts centres on the assessment and identification of hearing loss that then triggers access to special school. Importantly, because there is no systematic newborn hearing screening in this context the start of the assessment and identification process must be initiated by caregivers. The connection between education and health that is potentially so supportive for caregivers is therefore precarious: Children may not come to the attention of the clinic and school until they are nearing school age.

At the professional level there is a commitment to connect health and education services and good connections between the schools and the clinics. There are outreach services to include children whose families are unable to travel to the clinics. CHSS has a mobile audiology

van that is purposefully designed for hearing screening in remote communities. In these communities there are often several people who otherwise would never have the prospect of getting their hearing assessed.

Links are made between other professionals through the clinic system where audiologists will refer patients out of clinic for example to speech and language therapists, neurologists, counsellors, and ENT surgeons.

Supportive connections also exist between NGOs, schools, and clinics. These relationships facilitate the donation of resources, such as play equipment, and are also important for raising societal awareness of childhood deafness and the educational implications and needs.

(...) the school usually have these benevolent corporate organizations and NGOs. So this school have sponsors like the, American Technical Powers (ATP), they are sponsors of the school, they are individuals, churches, Alumni in schools. So even when you come to the school, there are facilities put up by organizations and churches. (Educator)

8.2 Interaction between schools

Some connections are made between mainstream schools and the schools for the deaf through shared sporting events, drama activities, and festivals. These events are supportive of children's social and communicative development and facilitate interaction between deaf and hearing children.

Sometimes we go there for excursion to interact with the deaf children there. Sometimes we organise games and they also come to Jamasi sometimes for return matches.

Sometimes we organise sports, athletics with them. And even Akuapem Mampong, we went there for excursion to interact with our dear deaf children there. (Educator)

The teachers see these events as an opportunity to raise awareness of deafness beyond the special school network, encourage a wider acceptance of deafness and reduce societal stigma.

(...) what we do is that, we organise games with them to remove stigmatisation.

(Educator)

However, mixing with the local mainstream schools is not always positive. There is some experience of discrimination at such shared events.

Sometimes when we go out with the children, the regular schools make us know that we are not equal to them. (Educator)

As well as connecting with other schools, teachers talked about the ways in which they try to foster interactions with the wider community by making local visits (for example to the market) in order to develop children's understandings of the world and raise wider awareness of deafness beyond the immediate school community.

The collaborations between the special schools through WhatsApp and other platforms is positive. This connection enables teachers to share teaching resources and teaching approaches and ideas.

(...) when we see their programme on the platform, and you have a friend at that particular school, you call them and discuss with them what they are doing there and other things, when they show it to you, you if you don't know anything, he will teach you how to do it. Then you also use them to teach your people. That is the way we communicate. (Educator)

Meeting face-to-face is more problematic. Most of the deaf schools in Ghana are long distances apart and this makes it a challenge to share events and activities. The development of these connections across schools would be beneficial for the development of practice and professional expertise that could open opportunities for more informed and consistent early support. The established connections between health and education professionals is a resource that could be extended to reach and support caregivers at an early stage in their children's lives and facilitate multi-professional and parent-parent early support.

9 The macrosystem: Themes and subthemes emerging from the interviews.

Analysis of influencing factors at the macro level centres on the societal and cultural influences on early support, including institutional and policy influences. This aspect of analysis involves a focus on extant inclusive education policies and the ways that these are enacted in relation to the early years education for deaf children and support for caregivers. This aspect of our data gathering, alongside the interview and observational work, is on-going and involves an examination of i) the current intention and enactment of Government policy in relation to the

experiences of deaf education and health practitioners, deaf adults, and caregivers of deaf children and ii) the possibilities for change and how policy makers and practitioners envisage the future of inclusive education for deaf children in Ghana. Our preliminary insights into the macrosystems that impact on the early support and care of young deaf children and their caregivers relate to the health and education infrastructure, and societal attitudes and beliefs and understandings.

9.1 Health and Education Infrastructure

Our interviews with health and education professionals revealed the extent to which the development of practice is hampered by financial constraints at a national level. Technology, for example, is expensive for families, and many rely on charitable donations.

Unfortunately hearing aids are quite expensive because of that we do not provide them with free hearing aids. However, we are in support with or collaboration with other hearing aids NGOs like STARKY and from time to time they provide some hearing aids (...).

(Clinician)

There is a significant input into the medical context from donations from benefactors (including hearing technologies companies), global organisations such as World Vision, and NGOs such as Rotary who donated a minivan (the HARK) to one centre for outreach testing in rural communities. When donated equipment is broken it is problematic because there is a shortage of hearing aid repairers. Donated equipment is costly to get repaired as items must be sent away and so reliance on this type of external support is clearly is not ideal. However, in the case of the HARK, UEW has been responsible for its routine maintenance since it was donated. Work and charitable intervention is also unreliable and often stalled by local and national restrictions.

I know of some non- governmental organization who comes here every year, but is been a while they came because of Coronavirus and there was one pandemic that came before Ebola and Coronavirus. And because of that they have not been here for some time.

(Clinician)

Schools also rely on donated support for books, teaching equipment and school sanitation. One of the schools relies on a significant amount of external help for fundamental needs such as a reliable water supply.

(...) we have serious challenge with water. So inadequate source of water and then assist with projects for instance, a carpentry shop was given to us by an NGO. This one was given to us by a Catholic church within the community. And then World vision is also helping us with a bore- hole, mechanic –like bore hole that supplies us with water. We also have some NGOs who are into building into sanitation and a British organisation recently built a playing ground for us. (Educator)

One of the schools, that has a missionary history, falls within the remit of the Christian Health Association of Ghana. This means that, in terms of recruitment, the government provides some of the staffing.

The issues of infrastructure are beyond the control of families and professionals and the reliance on benefactors is precarious and perpetuates the marginalised status of special education and audiological intervention for deaf children. Against this backdrop of chronic underfunding, immediate strategies for early support have to build on the professional, community and family resources available. At the same time high level communication and equalities lobbying needs to advocate for sustainable investment in the support and education of deaf children in Ghana.

9.2 Societal attitudes, beliefs, and understandings

Alongside and interconnecting with these issues of infrastructure exist fundamental issues of exclusion and inequality. The impact of social understandings and responses to deafness on the development of early support and educational practices is felt and expressed across all the environments surrounding deaf children. The teachers and clinicians describe how negative societal attitudes to deafness impact on their practice, impede their interactions with caregivers, undermine the confidence and agency of caregivers, and ultimately inhibit responsive caregiving.

The deep-rooted discriminatory prejudices that surface in the interviews, combined with the lack of resources for early identification mitigate against reaching and providing informed support for caregivers at an early stage in their children's lives. Working at the proximal level with families and communities can go some way to overcome this stigma and prejudice but structural and behavioural change is needed for the rights of deaf children to live full and

individual lives to be recognised, and the need for early support to be understood as a development priority.

10 Preliminary conclusions

10.1 Microsystem

The professionals that we interviewed were able to provide some insights into the day-to-day context of deaf children's early lives and the relationships and interactions that influence early care and support. These insights give a professional overview that informed the development of our parent interviews and interactional observational schedules. Analysis at this level suggests that the need for improved early support of deaf children in terms of language, communication, social and cognitive development, and overall school-readiness is pressing. The existing support arrangements fall significantly short of meeting the Early Hearing Detection and Intervention 1-3-6 guidelines (hearing screening by one month, identification of hearing loss by three months, and receiving intervention by six months of age) specified in the guidelines (Moeller et. al., 2013; Yoshinaga-Itano et. al., 2020).

Caregivers make the best use of the resources that they have in their interactions with, and care of their children. They establish multimodal ways of communicating, develop strategies for including their children in their day-to-day lives, and seek to develop their social and cognitive skills and potential for learning. However, their responsive caregiving is inhibited by their own lack of understanding of their child's deafness and communication possibilities, and by societal stigma and pressure. They need professional and peer support as well as contact with deaf adults at a much earlier stage of their child's life (Gale et al., 2021; Hintermair, 2006).

10.1.1 Mesosystem

The established connections around the child and the family are crucial to their early development, care, and wellbeing, and in terms of caregiver's access to sustained support. The professionals that we interviewed mention the support and importance of the local community as an inclusive environment and this is something that we will explore further in our interviews with parents. The connection between school, clinic and the home seems to be difficult to

maintain. There are costs to parents associated with visits to clinics and PTA meetings and some reported reluctance and a lack of confidence to engage with the educational and clinical contexts. The professionals associate this with difficulties that caregivers experience in accepting that their child is deaf and recognise the burden of stigma for parents and how these impacts on their willingness to engage (Opoku et al., 2020).

10.1.2 Exosystem

The educator and clinicians are key actors in the early care and support structure and so their training, preparation and professional practice is important. As professionals, they are less directly influenced, or hampered, by issues of stigma and marginalisation. However, they are frustrated by the way in which societal stigma impedes parental engagement and financial hardship hampers effective intervention and support. Children are typically identified with a hearing loss late (Children with auditory disorders are detected at average 5 years - with some being detected as late as 8 years old, Fobi & Oppong, 2019; Oppong & Fobi, 2019) and, for many, the start of their school career is delayed.

The clinicians have a robust training infrastructure and bring a breadth of understanding about language and communication to their work. However, there is insufficient resource to reach and equip all families, especially in rural areas, with the technology and habilitative support that they need. The educators have very varied training experience in terms of knowledge about deafness, language, communication, and learning. Whilst some informed practice clearly exists, gaps in understanding around bilingual communication and teaching practices were evident. The potential resource in the schools for supporting children and families is formidable as the schools are strong communities where enabling children to grow up in order to contribute to society is a priority. In the clinical and the education contexts continued professional development that supports the links between health and education around children and families is needed. Additionally, we noted current limited scope for the role of deaf adults in the early support networks. This prompted us to investigate this further with a small group of deaf adults with advocacy and educational experience (Graham & Horejes, 2017). (These interviews are reported in working paper #3).

10.1.3 Macrosystem

Responses from the education and health participants in this round of interviews provided some insights into the overarching societal influences on early care and support in terms of institutional and policy influence, societal infrastructure, ways of life, culture, belief systems and resource dynamics. These reflections are to be followed up by our review of policy and practice, and analysis of change possibilities.

Societal marginalisation and stigma, as a constraint on early care and support, is a recurring theme in the interviews. The misconceptions, fears, and prejudices that were described suggest limited understandings of childhood deafness (its causes, the consequences, and the communication possibilities) among the wider population and the fact that deaf people are not very visible in Ghanaian society.

That said, the societal emphasis on community, shared responsibility, and the expectation of leadership from community and family elders also comes through from the interview respondents. This is social resource that could be leveraged for the benefit of deaf children and their families.

The interviews also reveal Ghana as a plurilingual society where there is seemingly a tolerance of the language and culture of different families and communities. On the average, every Ghanaian community is a multilingual environment where children encounter not less than two languages as they grow within these communities (Edu-Buandoh, 2006). In some contexts, some of the children grow up very proficient in about four languages and are able to switch between them to facilitate their communications and interactions with others. Also, due to the communal nature of the Ghanaian communities, every adult who is proficient in these languages can assist the children to make corrections should they make mistakes in their expressions.

Working with people's understandings and ideas brings many opportunities in this context but the interviews also remind us of the constraints of the infrastructure where fundamental issues, such as access to a water supply, risk of disease and lack of connectivity, impinge on the development and dissemination of support communities and practices.

10.2 Next steps

The next actions for this project centre on the analysis of the interviews that we undertook with caregivers (Working paper #2) and with deaf adults (Working paper #3). The interviews with professionals enabled us to identify themes to take through into these interviews in order to examine them in more depth, and they also informed the development of our coding processes. At the same time, we are working with the interactional video data, initially chunking the material according to our analysis criteria and then moving this to the ELAN⁸ platform for a close multimodal analysis of communication strategies.

Alongside the analysis work we are having conversations with key policy and practice stakeholders in Ghana to identify priorities and shared actions to enable the implications of our findings to be put into practice. Later in the project we will also be working with practitioners, deaf leaders and mentors, and with caregivers and through a series of hands-on workshops to develop local community-based support and mentoring networks and explore practical early support strategies.

Our priority is to initiate sustainable change in an ethical way (Morelli et al., 2018). This will involve dissemination and impact work across all the influencing systems identified in the empirical work and a continued focus on the development of the knowledge, skills and experience of the research team.

⁸ ELAN (EUDICO Linguistic Annotator) is an annotation tool for audio and video recordings developed by the Max Planck Institute for Psycholinguistics.

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