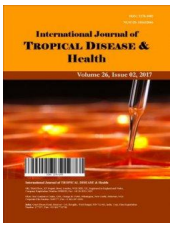

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Systems of Communicating Sexual and Reproductive Health Issues between Hearing Parents and Their Deaf Adolescent Children in Western Kenya

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Authors' contributions

All authors' contributed and participated in the design of the study and throughout data collection. Author JAO drafted the manuscript. Authors HA, BA and CO contributed to editing and review of the manuscript. All authors read and approved the final manuscript.

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ABSTRACT

Background: Deaf adolescent children face greater challenges in accessing information, particularly on sexual and reproductive health (SRH) than those with other forms of disability. Parents therefore represent the first source of information for such children. However, the extent of this and systems of communication used by these parents remain largely unknown. Therefore, it is against this backdrop that we sought to study systems of parents communicating SRH issues to their children.
Methods: A mixed method design was used to collect quantitative and qualitative data on the system of communication used by the sign-language illiterate parents respectively, their

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perceptions on such discussions and the choice of system of communication. A sample size of 384 parent-child pairs was selected using systematic probability sampling for the quantitative component of the study. For the qualitative component, respondents were recruited using a purposive convenience sampling method which though non-representative, allowed the investigator to choose participants best suited for the intended objective. The study was carried out in ten schools; randomly selected from a sample frame comprising of a list of primary and secondary schools for deaf children within the former Nyanza region of western Kenya. Data was collected using anonymized questionnaires and Focus Group Discussions (FGDs).

Results: Majority of the male parents 90 (23.4%) were in the age range of 51-60 years, while most female parents 134 (34.8%) were in the age category of 40-50 years. Nearly 70% (67%) of the children were in the age range of 15-19 years. Overall, use of picture came out as the main mode/format of communication (33%); with females using it more (23%) compared to males 12.3%. Lip-reading (children reading the lips of their parents), was principally used by male parents. 32(8.3%) parents falling within the age group 41-50 and 51-60 years felt that the information they had on SRH was inadequate. More so, in a qualitative interview, most parents were not satisfied that they had provided enough information to their children on matters of SRH due to communication barrier. Some of the emerging themes from the FGDs were: parents lack a proper approach of conveying SRH information to their deaf adolescent children, unresponsiveness/lack of interest by deaf adolescent children, wrong translation of information conveyed and insufficient time with their deaf adolescent children to pass across these messages.

Conclusion: Children with hard hearing are less likely to get adequate information on SRH than their counterparts with no hearing impairment.

Keywords: Deaf children; parents; communication systems.

1. INTRODUCTION

People living with any form of disability are some of the most marginalized and excluded groups in many societies in Africa [1]. In most circumstances, children with disability and their families are deprived of basic resources and services, including limited access to such critical opportunities such as education and healthcare [2]. Additionally, problems facing children with disability are further compounded by stigma and negative attitudes in their daily lives. Surveys indicate that even though people living with disability are a high-risk group with regards to HIV/AIDS infection, they are often neglected in disease prevention campaigns [3,4], largely due to misconceptions about their vulnerabilities and sexuality [5]. Indeed, the fight against risks associated with lack of information on sexual and reproductive health (SRH), including HIV/AIDS, shows that the exclusion of people living with disability such as the deaf is an influential vulnerability factor that slows down prevention measures [6].

It is estimated that deaf persons are up to eight years behind the general population in their level of knowledge of disease prevention and other SRH issues [7] and this reduced level of knowledge is made worse by the fact that they have low self-esteem relative to those with hearing ability [8]. Due to the difficulties encountered in accessing information from formal sources, deaf people often turn to informal sources such as friends and family members for information [9,10]. However, this often has dire consequences when it comes to learning about SRH issues. Studies, for example [9] have reported differences in levels of knowledge on HIV/AIDS between deaf college students and their hearing counterparts. This implies that deaf students are less likely to have accurate knowledge as information from informal sources may be incomplete or inaccurate while hearing students obtain information from teachers, and mainstream media. Although data suggests that deaf people in parts of Africa have limited knowledge about SRH issues [11], little is known about the extent and nature of the problem.

In much of Africa, parents are the first sources of information for their children on a range of issues including SRH, with other sources such as television sets being only occasionally available. Difficulty in communicating with deaf children arises from the fact that most of deaf children have hearing parents who frequently do not have a fully effective means of communicating with them [12]. The Kenyan sign language, for example, is only recognized by a limited number of institutions such as the Kenya Law Courts and a few government schools and churches.

Furthermore, users of sign language have demonstrated a weakness in capturing information on SRH issues, especially in the context of HIV/AIDS and other Sexually Transmitted Infections (STIs). Even workshops organized to discuss SRH issues have failed to interpret complex SRH issues into sign language [13]. Two systems of communication have been employed by different stakeholders to deliver required SRH messages/services to people who are deaf: i) participatory approach in awareness creation, and ii)deaf-friendly testing, counselling, care and treatment [14]. These services would work better for well-equipped institutions, but not for resource-constrained parents in much of rural Africa. This means that systems of communication with deaf persons by those who are not trained in sign language remain unknown. A communication option, mode, modality, or method is the means by which the child and family receive and express language. The choice of a communication modality that facilitates language development and allows the child who is hard of hearing or deaf to readily engage in communication interchanges with family and caregivers is a primary issue throughout childhood [15].

The objective of the current study was therefore to establish the systems of communication between parents and their deaf adolescents on SRH issues. This paper examined the systems/mode of communicating sexual and reproductive health issues between hearing parents and their deaf adolescents.

2. MATERIALS AND METHODS

2.1 Study Design, Area and Population

The study employed a descriptive mixed method design, combining both qualitative and quantitative components. This approach aims at drawing from the strengths and minimize on the weaknesses of both in a single research study. Structured questionnaires were used to collect quantitative data while, a semi-structured focus group discussion guide was used to collect qualitative data in form of focus group discussions (FGDs). The study was carried out in ten schools randomly selected from a sample frame comprising of a list of primary and secondary schools for deaf children within the former Nyanza region of western Kenya. Children selected from these schools were paired up with their parents who became the study participants. Consent was obtained from the parents who assented to divulge information about their deaf adolescent children. Due to confidentiality issues and the need to protect the schools and students concerned, the names of these schools are not provided. The region has a population of about 650,000, with a population of adolescent children, that is, those aged 10 – 24 years [16], who are deaf estimated to be about 10,000.

Additionally, the region has one of the highest HIV/AIDS prevalence rates, at 14% of 1.4 million Kenyans living with the scourge [17]. The study population was made up of paired parent-deaf adolescent children who were attending approved schools for deaf persons in the region. For a parent-student pair to be eligible for inclusion, the pupil/student had to be aged between 10 and 24 years; had to be enrolled in a school, and be in between class VI (year six) and form IV (year twelve); must have lived with the parent(s) and in location of origin for at least the preceding 3 months; the parent had to be the biological parent or be a guardian and sign language illiterate.

2.2 Sample Size and Sampling Techniques

The target population for this study was parents to deaf adolescent children with hearing impairment. To the best of our knowledge, there are no previous studies carried out in Kenya reporting the proportion of parents of children with hearing impairment, therefore we assumed 50%,with a standard normal variate at 5% type 1 error (P<0.05) and 5% precision. Based on this assumption, we calculated a minimum sample size of 384 of paired parents to adolescent children with hearing impairment.

2.2.1 Sampling technique

To generate 384 parents to children with hearing impairment for the quantitative component of the study, class registers provided a sampling frame, and systematic probability was used to select parent-student pairs. The population of the children in the class registers was numbered from 1 to N, a number was randomly selected to represent the starting number e.g. K. Thereafter the K^{th} child after the starting number was picked to participate in the study. The sample size (n) was already determined to be 384. The formula used was K= N/n to give the interval size. For the qualitative component, respondents were recruited using a purposive convenience

sampling method; though it is a non-representative sample, it allowed the investigator to choose participants who were best suited to provide the intended perspective. Ten FGDs consisting of about 8-12 parents of children with hearing impairment were conducted.

2.3 Data Collection

Ten interviewers, fluent in the two national languages, i.e. English and Kiswahili, were recruited to facilitate data collection using a pre-tested anonymized questionnaire. Prior to implementation of the questionnaire, the interviewers were trained on the general objective of the study, detailed content of the questionnaire, the methodology in relation to the study objectives and on how to administer the instrument in a way that maintains confidentiality and privacy of the respondents as well as on how to collect reliable, valid and trustworthy data. Following the training, the questionnaires were pre-tested among a similar population in the region and adjusted accordingly.

Structurally, the questionnaire for the quantitative data had closed and open-ended questions organized within key sections capturing (i) socio-demographic information of the study participants, (ii) system of communication on SRH matters with their deaf adolescent children, and (iii) factors influencing communication between such parents and their children. Similarly, FGDs were used to collect data from the respondents in a bid to verify and authenticate some of the responses received from the questionnaire surveys as is often the case in such surveys [18]. Ten FGDs comprising of 8-12 participants per group were conducted. A semi-structured guide comprising open-ended questions that sought to elicit descriptive and explanatory comments from the participants was used to lead the discussions, which were carried out to saturation.

2.4 Data Analysis

2.4.1 Quantitative data analysis

Quantitative data as obtained from questionnaires were entered into Statistical Package for Social Sciences (SPSS) software version 20 (SPSS Inc. Chicago, USA), cleaned, and coded. For the purposes of this study, the systems of communication were categorized and coded as 1 = picture, 2 = word of mouth (lip-reading), 3 = video, 4 = combination of all these methods. Participant characteristics were presented by use of frequencies and percentages for categorical variables. Format of communication and adequacy of the information passed to the children with hearing impairment was presented in a table by use of frequencies and proportions.

2.4.2 Qualitative data analysis

Analysis of qualitative data was done concurrently with data collection and commenced as soon as the first FGD was completed. This allowed for any adjustments and gave the most reliable and valid data.

A codebook was developed and NVivo 10, a qualitative data analysis program, was used to organise the data and code themes from the transcribed FGDs. Analysis was started by organizing data according to the FGDs with the study participants and then a complete transcription carried out by typing the text files collected during these FGDs. Then from each transcript, identification of key phrases or sentences, which related to the study questions, was done. Thereafter formulation of meanings from these significant phrases and sentences, which finally allowed for common themes to surface, took place. Descriptive summaries and quotes representing the main themes were captured. Quotes were selected on the basis of their clear representation of the themes.

3. RESULTS

3.1 Quantitative

Table 1 presents the characteristics of parents and their children; who participated in the quantitative survey. A total of 384 parents paired to their children participated in the study, of which, 168 (43.7%) were males and 216 (56.1%) were females. The age of parents ranged between 31 and 70 years, with majority 203 (52.8%) falling between 41 and 50 years. Majority of the parents falling within the age group 41-50 were females (34% vs. 66%). Only a few of the parents 13 (3.3%) were below 41 years of age, with almost similar number and proportion 12 (3.1%) being over 60 years old. More than a half of the respondents were married 256 (66.7%), while minority were either single 14 (3.6%) or divorced 12 (3.1%). About a third of the respondents 114 (29.7%) of the respondents were, however, widowed with a significant higher percentage of females than

males reporting being widowed (15.2% vs. 37.0%). Majority of the respondents 308 (73.0%) lived in rural areas, and most of them (69.2%) acknowledged the gravity of the problem of HIV/AIDS in their localities.

Several systems of communication were identified that included: children reading the lips of their parents (lip-reading),parents using pictures to convey their message, use of video and a combination of all these systems to communicate SRH issues to their deaf adolescent children. Overall, there were significant differences among the systems of communication, with word of mouth (lip-reading) being the most used most by males 64 (41.6%), followed by picture 47 (30.5%) and a combination of systems 28 (18.2%) as shown in Table 2.

Noteworthy, audio visual method was only used by males aged between 31 and 40 years old 13 (100%). Conversely, picture was the system used by a significantly higher proportion of female respondents 144 (66.7%), followed by a combination of methods 39 (18.1%) and word of mouth 31 (14.1%), with video similarly being the least used 2 (0.9%).

Table 1. Socio- demographics characteristics of the parents and their children (N=384)

Demographic characteristics of the study			
Factor/Variable		**n**	**%**
Age of parent in years			
	31-40	13	3.4
	41-50	189	49.2
	51-60	171	44.5
	61-70	11	2.9
Sex of parent			
	Male	168	43.8
	Female	216	56.3
Age of child in years			
	10-14	52	13.5
	15-19	255	66.4
	20-24	77	20.1
Sex of the child			
	Male	218	56.8
	Female	166	43.2
Place of resident			
	Urban	102	28.5
	Rural	256	71.5
Format of passing information			
	Lip reading	95	25.7
	Picture	191	51.6
	Audio visual	16	4.3
	Combine	68	18.4
Level of education			
	Primary or less	239	62.2
	Secondary	51	13.3
	Tertiary and above	94	24.5
Marital status			
	Single	14	3.6
	Married	256	66.7
	Separated/Divorced	114	29.7
As a whole, how big is the HIV problem			
	Minimal	95	24.7
	Bad	263	68.5
	Very Bad	26	6.8

Sample sizes fluctuate slightly for some variables due to missing data

Table 2. Format by which parents pass information to their hearing-impaired children

Variable/Factor	Total(N)	Lip reading	Picture	Audio visual	Combination
		n (%)	n (%)	n (%)	n (%)
Age of parent					
31-40	13(3.3)	0(0.0)	0(0.0)	13(100.0)	0(0.0)
41-50	189(51.1)	50(26.5)	130(68.8)	1(0.5)	8(4.2)
51-60	157(42.4)	45(28.7)	61(38.9)	2(1.3)	49(31.2)
61-70	11(3.0)	0(0.0)	0(0.0)	0(0.0)	11(100.0)
Sex of parent					
Male	168(43.7)	64(41.6)	47(30.5)	14(9.1)	29(18.8)
Female	216(56.2)	31(14.4)	144(66.7)	2(0.9)	39(18.1)
Age of child					
10-14	52(14.1)	13(25.0)	26(50.0)	13(25.0)	0(0.0)
15-19	255(68.9)	58(22.7)	155(60.8)	2(0.8)	40(15.7)
20-24	63(17.0)	24(38.1)	10(15.9)	1(1.6)	28(44.4)
Sex of child					
Male	204(55.1)	59(28.9)	101(49.5)	3(1.5)	41(20.1)
Female	166(44.9)	36(21.7)	90(54.2)	13(7.8)	27(16.3)
Marital status					
Married	242(65.4)	66(27.3)	108(44.6)	14(5.8)	54(22.3)
Single	14(3.8)	8(57.1)	3(21.4)	0(0.0)	3(21.4)
Divorced	12(3.2)	4(33.3)	6(50.0)	1(8.3)	1(8.3)
Widowed	102(27.6)	17(16.7)	74(72.5)	1(1.0)	10(9.8)
Level of education					
No Education	27(7.3)	0(0.0)	27(100.0)	0(0.0)	0(0.0)
Primary	212(57.3)	51(24.1)	109(51.4)	14(6.6)	38(17.9)
Secondary	51(13.8)	7(13.7)	25(49.0)	2(3.9)	17(33.3)
Tertiary and Above	80(21.6)	37(46.3)	30(37.5)	0(0.0)	13(16.3)
Place of residence					
Urban	102(29.7)	35(34.3)	45(44.1)	1(1.0)	21(20.6)
Rural	242(70.3)	55(22.7)	137(56.6)	14(5.8)	36(14.9)

3.2 Adequacy of Information Passed to Deaf Adolescent Children

Overall, significantly higher proportions of respondents were not satisfied that they had provided adequate information on SRH issues to their hearing-impaired adolescent children 223 (62.5) (Table 3). Marital status, level of education and format of passing information were significantly associated with reporting adequate information. Married parents were 42% less likely to report passing adequate information to their children compared to the singles (OR= 0.58; 95% CI 0.40, 0.85; p,0.001, while divorced/separated parents were 87% less likely to agree that they report adequate information to their children (OR=0.13; 95% CI 0.7, 0.25; p=0.011. In terms of format of passing information, only parents reporting using lip-reading were 3 times more likely to report passing adequate information to their children (OR= 3.2: 95% CI 2.39, 4.39; p <0.001.

3.3 Qualitative

During the focus group discussions, it emerged that parents were struggling with four major themes when it came to systems of communicating sexual and reproductive health (SRH) issues to their deaf adolescent children. One major theme that emerged was parents admitting that they lacked a proper approach to pass the information they had. Most of them felt "embarrassed" to start gesturing, drawing or showing pictures depicting reproductive anatomy to their children. Parents went ahead to confess that most of the time when they tried to introduce such discussions, their deaf adolescent children lacked interest in the discussions. They were also worried that by discussing such issues like having safer sex, they were giving their deaf adolescent children permission to have sex; wrong interpretation by their children worried them. Parents also lamented on the short time they had with their deaf adolescent children

Table 3. Adequacy of information passed to deaf adolescent children

Variable/Factor	Total (N)	No (n=223)	Yes (n=134)	OR (95% CI)	P-value
		n (%)	n (%)		
Format of passing information					<0.001
Lip reading	92(26.8)	26(28.3)	66(71.7)	3.2 (2.39, 4.39)	
Picture	181(52.8)	141(77.9)	40(22.1)		
Audio visual	8(2.3)	7(87.5)	1(12.5)	0.56 (0.08, 3.62)	
Combine	62(18.1)	35(56.5)	27(43.5)	1.97 (1.32, 2.92)	
Age in years					0.406
<=50 yrs	187(52.4)	113(60.4)	74(39.6)		
>50 yrs	170(47.6)	110(64.7)	60(35.3)	1.13 (0.86, 1.48)	
Sex of parent					0.348
Male	146(40.9)	87(59.6)	59(40.4)		
Female	211(59.1)	136(64.5)	75(35.5)	0.87 (0.67, 1.15)	
Marital status of the parent					
Married					<0.001
Single	6(1.7)	1(16.7)	5(83.3)		
Married	237(66.4)	121(51.1)	116(48.9)	0.58 (0.40, 0.85)	
Separated/Divorced	114(31.9)	101(88.6)	13(11.4)	0.13, 0.7, 0.25)	
Highest level of education attained					0.011
Primary or less	225(63.0)	158(70.2)	67(29.8)		
Secondary	51(14.3)	37(72.5)	14(27.5)	0.92 (0.56, 1.50)	
Tertiary and above	81(22.7)	28(34.6)	53(65.4)	2.19 (1.70, 2.83)	
Place of residence					0.179
Urban	98(29.6)	68(69.4)	30(30.6)		
Rural	233(70.4)	143(61.4)	90(38.6)	1.26 (0.89, 1.77)	
Sex of child					0.068
Male	204(57.1)	119(58.3)	85(41.7)		
Female	153(42.9)	104(68.0)	49(32.0)	1.26 0.89, 1.77)	

during school holidays. They said that during such holidays, the children were often busy with other competing interests like socializing with their friends, playing games or visiting relatives. A parent expressively shared that *"our children don't want to sit down and talk to us; they find that "boring", they prefer doing other "interesting" things that don't always include us".*

3.3.1 Lack of proper approach by parents to communicate SRH issues to their deaf adolescent children

The parents agreed that their children with hearing impairment are equally sexually active as their non-deaf counterparts. They unanimously agreed that their hearing impaired children were at an increased risk of contracting HIV and/or other sexually transmitted diseases if they practiced irresponsible sexual behaviour. A parent said ...."*Hearing impaired children are at a greater risk because of their communication problem. This is because parents of hearing-impaired children lack appropriate language mechanism of discussing SRH related matters with their hearing impaired children"*. The parents confessed that discussing such topics with their children was not easy and they didn't know the most appropriate method to use in communicating SRH issues. The discussions further revealed that most of the parents, that participated, had difficulties in communicating issues of SRH to their children. A parent said....."*I yearn to explain or talk about HIV and other sexually transmitted diseases prevention to my child but my major problem is the correct sign language to use*". "*Another parent said "I use crude and natural signs to explain to my daughter especially on the issue of pregnancy*."

3.3.2 Wrong interpretation of parents' message by deaf adolescent children

It emerged that the discussions majorly focused on advising especially girl children with hearing

impairment to avoid teenage pregnancy, abstinence and waiting till the right time/age; advising the children to avoid bad company, discussing with the children on the causes, spread and effects of HIV/AIDS and other STIs. An emerging issue was that majority of the parents had not talked to their children on other reproductive issues like ;delayed sexual debut, practicing safer sex, having one faithful partner etc because they feared that the deaf adolescent children would go out with freedom to have sex. A parent said, "*I don't want to think that my child is having sex, therefore I will not discuss condom use with her because it will be like I have given her keys to have sex freely".*

3.3.3 Lack of interest/unresponsiveness of deaf adolescent children to SRH communication by their parents

Most parents lamented that even if they tried communicating with their deaf adolescent children, most of the time, their children were uninterested in their discussions. They said that they tried using different approaches and settings for example including the children's favourite relatives in the discussion or going out to a serene environment but still the children would either brush them off or completely refuse to be withdrawn in the discussions. One mother had this to say, *"I called his uncle, whom he is very close to and we had a sitting but my son was adamant that he didn't want to discuss such issues with me, what do I do now?".*

3.3.4 Time limitations for passing SRH messages by parents to their deaf adolescent children

During the group discussions, parents were of the opinion that since these children were in boarding schools, school holidays provided insufficient time to allow for proper discussions. This they said was because during the holidays, their deaf adolescent children wanted to do many activities with their peers or relatives and often felt impatient when put down to talk. One father had this to say, *"My son likes football, most of the time he is on holiday he goes for football practice so we don't really get enough time to talk about SRH issues".*

4. DISCUSSION

4.1 Communicating Matters of Sexual and Reproductive Health to Deaf Children

The most salient fact of deafness is that it renders spoken language inaccessible in the normal fashion. According to Morres and Marschark , the fact that over 90% of deaf children are born to hearing parents [19,20], has far reaching implications for many aspects of development including language acquisition, familial and social relationships, and access to information and education.

Communicating matters of sexual and reproductive health issues with a hearing impaired child, in the context of parent-child relationship, is extremely challenging. Our findings reveal that whereas majority of the respondents admitted to discussing sexual and reproductive issues with their deaf adolescent children, most of them observed that the information passed to them is inadequate. Some parents/guardians acknowledged not knowing sign language and resorting to use of crude/natural means to communicate. Therefore, due to this, sexual and reproductive health issues remain a big threat to this population. This finding was corroborated during Focus Group Discussions (FGDs), where most participants agreed that HIV/AIDS, other sexually transmitted infections (STIs), teenage pregnancies and unplanned abortions are such a big concern to the deaf children than their counterparts who are not deaf. Koester observed [21] that for hearing parents of deaf children, parent-child communication becomes a central issue because parents must actively learn how to communicate with their children rather than rely on the intuitive communication strategies [22].

A study on parenting stress among parents of deaf and hearing children found that communication and behaviour problem mediate the relation between hearing status and parenting stress [23]. Our study findings conform to those Mprah Wisdom conducted in Ghana in (2013), which aimed to provide insights into factors that influence the acquisition, accessibility, and utilization of Sexual and Reproductive Health (SRH) information and services by deaf people; who communicate using Ghanian Sign Language to communicate (GSL) [24]. The findings of this study indicated that when accessing SRH information and services in Ghana, deaf people encounter numerous barriers; such as problems with communication, ignorance about deafness, negative attitudes, and services that are not customized to their needs.

In particular, adolescents with hearing impairment face severe challenges, because it is

often difficult for parents, educators, and counsellors to discuss SRH issues with them, since they are perceived to be sexually inactive [25]. Consequently, many of these young people are not familiar with basic physiological changes their bodies are undergoing, cannot describe what is happening to them and are therefore vulnerable to SRH problems and sexual exploitation [26,27]. Information on the SRH status of deaf people suggest that they are more likely to face difficulties in accessing common sources of information than their hearing counterparts [5,26,28-30]. Deaf people are less likely to access media such as television and radio [30]. They also encounter communication barriers in the healthcare system because healthcare providers typically cannot communicate with deaf people. Healthcare providers often underestimate the difficulties of speech reading and overestimate deaf people's ability to understand written notes [31].

4.2 Mode of Communicating Sexual and Reproductive Health Issues

Parent-child communication plays a central role in social growth, as it does in other domains of development. Research shows that over 90% of deaf children, however, have hearing parents who frequently do not have a fully effective means of communicating with them [32].

Our findings indicated that parents with children hard of hearing in this setting use different modes of communication, with word of mouth (lip-reading) being used the most, followed by pictures. These results underscore the importance of word of mouth as a system of communicating SRH issues to the adolescent youth, especially by the male parents. A sizable number of parents also used a combination of the systems. Early research observed that parents struggle to communicate with their hearing impaired children, hence some parents end up using gestures, facial expressions, pointing, touching and other manual signs that are not recognised in trying to communicate with their children. In addition, some parents or guardians use speech and speech reading as a mode of communication. According to Mbaluka et al. [33] study on parents' mode of communication with their hearing-impaired children in Gweru urban in Zimbabwe, majority of parents/guardians use total communication mode when communicating with their deaf adolescent children. Total communication philosophy combines the aspects of listening, speech reading, signing and finger spelling. Only 10% of parents use oral-ism as a mode of communication [33].

It has been reported that there is a general lack of knowledge and skills especially on SRH among parents [34], therefore it is critical that these parents have the right information to convey and are equipped with the requisite communication skills and ability to deliver such information. There is, therefore, a need to target these parents in education campaigns and through specific programs, as a means to delivering the requisite SRH issues to the deaf adolescent youth since parent-child communication plays a central role in social-emotional development of deaf children, as it does in their other domains of development [12].

Pursuant to this, there are inherent differences in the deaf adolescent children's lip-reading abilities [35]. Therefore, there is need to complement these efforts with training of the deaf children from their early years of development in lip-reading that needs to be language and context specific in order to improve effectiveness of word of mouth as a communication tool, not only by the parents of these children but by all who are charged with the responsibility of conveying such messages to such an audience. Improved interactions through communication would also help address the fact that deaf children tend to display more language, attention, and behavioural difficulties, and spend less time communicating with their parents than normally hearing children [36].

5. CONCLUSIONS

Deaf people face greater access problems than people with other forms of disability, because mainstream sources of information are inaccessible to them. They are less likely than hearing people to obtain information from formal sources such as health professionals and television broadcasts. Whereas majority of the respondents admitted to discussing sexual and reproductive issues with their adolescent deaf children, most of them observed that the information passed to them is inadequate, not in terms of content but in terms of limited communication modes. Some parents/guardians acknowledged not knowing sign language and resorting to use of crude/natural means

to communicate. The system/format of communicating SRH issues to properly classify the children differed by sex, with word of mouth being used mainly by male parents, followed by picture and a combination of systems.

The results showed that older parents were more likely to use a combination of methods compared to younger parents, implying both experience and improved access to different methods of communication. Overall, these results in addition to identifying the various systems used by respondents and determinants of their choices, underscore the need to improve access of the parents to the right information for conveyance to their deaf adolescent children. SRH issues remain a major issue among deaf adolescent children with hearing impairment.

CONSENT

As per international standard, written consent of parents of participants has been collected and preserved by the author(s).

ETHICAL APPROVAL

Ethical approval to conduct the study was obtained.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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