Factors Associated with Depression and Poor Academic Performance among the Deaf and Hard of Hearing Adolescents in Selected Public primary Schools in Nairobi County, Kenya.

Stellah Osoro Kerongo, Ph.D. Candidate in Clinical Psychology; Alice Munene, Psy.D; & Mary Mogute, Ph.D., Daystar University.

Abstract

According to World Health Organization (2012), depression is regarded as a common mental disorder. Moreover, depression symptoms are often linked with substantial comorbid impairments that negatively affect academic performance of Deaf and Hard of Hearing (DHH) adolescents (Sommers, 2014). This paper examined factors associated with depression and poor academic performance among DHH adolescents in selected public primary schools in Nairobi County, Kenya. The 64 participants aged 14-20 were recruited for the study using Socio-Demographic Questionnaire (SDQ) and Beck Depression Inventory (BDI-II). The Logit Linear regression analysis revealed the main factors contributing to participants' academic performance as the mode of communication used (β = -.010 (p=0.014), frequency of participants' caregiver assistance in doing homework (β= -0.153 (p=0.054), giving extra homework (β=0.005 (p=0.007) and those with whom participants shared their problems (β=0.111 (p=0.050). Further, the study findings revealed that there was association between predictive factors and academic performance; caregivers attending school organised meetings (p=0.034), encouraging participants to always work hard (p=0.034), caregivers being role models to participants (p=0.052) and participants being taught life skills by caregivers (p=0.006). In addition, the findings also indicated that the mode of communication used, how often caregivers assisted DHH adolescents in doing homework and giving of extra homework were predictive factors of DHH adolescents' depression at p=0.01, p=0.005 and p=0.001, respectively. This study concluded that poor academic performance was associated with depression.

Key words: adolescents, depression, deaf and hard of hearing, hearing impairment, academic performance.

Introduction and Background

According to WHO (2017), millions of people across the world continue living with the adverse impacts of depression. This is more pronounced in the Deaf and Hard of Hearing (DHH) due to

unaddressed hearing loss, communication breakdown and lack of access to education and health care services. Depression represents one of the most prevalent psychiatric disorders affecting around 340 million people worldwide (Sommers, 2014). Furthermore, the relationship between hearing impairment and depression is thought to be bidirectional (Li et al., 2014). In addition, the provision of education as a social welfare service serves as an effort to ensure that the DHH adolescents do not feel limited in terms of privileges and opportunities to become productive in the society and prevent developing of maladaptive behaviors (Agyire-Tettey et al., 2017).

According to Brown and Cornes (2015), 90-95% of DHH are born to hearing parents. This exposes DHH adolescents to depression and poor academic performance due to communication breakdown and feelings of rejection. Further, the same study revealed that 40% of their depression was from internal problems while 37% was external. Existing research suggests that DHH adolescents are more vulnerable to depression and poor academic perfomance than their hearing counterparts (Fellinger et al., 2015). For example, the overall prevalence rates of mental health problems have been documented to range between 19% and 77%, higher than those found among youth in the general population (Stancliffe et al., 2015).

As stated by Ohre, Volden, Falkum, and Tetzchner (2016), DHH adolescents were found to be two to four times more likely than hearing youth to exhibit internalizing problems which mostly expose them to depression and affect their academic performance. Similarly, another study documented that approximately 26% of DHH adolescents met criteria for a clinical diagnosis interview derived from the Diagnostic Interview Schedule for Children (Fellinger et al., 2015). Further, it was noted that DHH adolescents who met the criteria had poor academic performance due to diminished concentration and loss of interest in learning, largely because depression has serious consequences on DHH adolescents (Berry, 2017). Consequently, this leads to disruption of social life, familial functioning and poor school performance of DHH adolescents.

A study conducted in Nigeria by Ameye, Adeyemo, Eziyi, Amusa, Ogunniyi, and Otoghile (2015) among a cohort of 50 DHH adolescents attending a special school revealed that social isolation was a major source of worry for 70% of the respondents and close to 40% admitted to be angry mainly because of societal attitude towards them. Academic underachievement was found to be at 44%. The study concluded that DHH adolescents were faced with adverse

economic and pyshocosocial consequences, which were the main causes of their depression and academic underperformance.

Methodology

This study recruited 64 DHH adolescents that were screened using the researcher generated Socio Demographic Questionnaires (SDQs) and Beck Depression Inventory (BDI-II). The SDQs included the following variables: age, gender, class performance, religion, caregivers' employment status, family economic status, family setup, marital status of parents, who they stay with and who is responsible for school visits, fees payments, doing homework and the mode of communication used at the family level. On the other hand, BDI-II instrument is a 21-item self-reporting inventory that measures severity of depression. Items 1-13 assess psychological symptoms while 14-21 assesses physical symptoms. The instrument assesses mood, pessimism, sense of failure, self-dissatisfaction, guilt, self-dislike, punishment, self-acquisition, suicidal ideas, crying, irritability, fatigue, loss of libido and insomnia. BDI-II is a relevant psychometric instrument showing high reliability and capacity to discriminate between depressed and non-depressed subjects. The internal consistency is described to be 0.9 and test retest reliability ranges from 0.73-0.96 (Wang & Gorenstein, 2013). The total score of 0–13 was considered to be of minimal range while 14–19 was mild, 20–28 was moderate, and 29–63 was severe depression.

Results

Table 1: Distribution of Severity of Depression and the Socio-Demographic Characteristics

Variables	Total %	Depression Scores			Chi-Square Test		
		Borderline	Moderate	Severe	X^2	df	Sig.
Participant's Age							
14-16	54(84.4)	1 (1.6)	18 (28.1)	35(54.7)	.325	1	.850
17-19	10(15.6)	0 (0.0)	4 (6.3)	6 (9.4)			
Participant's Gender							
Male	24(38.7)	0 (0.0)	7 (11.3)	17(27.4)	1.130	1	.568
Female	38(61.3)	1 (1.6)	14 (22.6)	23(37.1)			
Participant's Class of Study							
Class One	2 (3.2)	0 (0.0)	2 (3.2)	0 (0.0)	19.804	7	.136
Class Two	5 (8.1)	1 (1.6)	2 (3.2)	2 (3.2)			
Class Three	16(25.8)	0 (0.0)	4 (6.5)	12(19.4)			
Class Four	13(21.0)	0 (0.0)	4 (6.5)	9 (14.5)			
Class Five	3 (4.5)	0 (0.0)	1 (1.6)	2 (3.2)			
Class Six	1 (1.6)	0 (0.0)	0 (0.0)	1 (1.6)			
Class Seven	12(19.4)	0 (0.0)	3 (4.8)	9 (14.5)			
Class Eight	10(16.1)	0 (0.0)	5 (8.1)	5 (8.1)			
The Caregiver the Participant Lives with							
Both Parents	35(55.6)	1 (1.6)	13 (20.6)	21(33.3)	3.919	4	.864
Father alone	3 (4.8)	0 (0.0)	0 (0.0)	3 (4.8)			
Mother alone	19(30.2)	0 (0.0)	7 (11.1)	12(19.0)			
Grandparents	2 (3.2)	0 (0.0)	0 (0.0)	2 (3.2)			
Guardian	4 (6.3)	0 (0.0)	1 (1.6)	3 (4.8)			
Participant's Parent's' Marital Status							
Married	41(65.1)	1 (1.6)	13 (20.6)	27(42.9)	2.133	4	.977
Single	7 (11.1)	0 (0.0)	2 (3.2)	5 (7.9)			
Separated	9 (14.3)	0 (0.0)	3 (4.8)	6 (9.5)			

Divorced	3 (4.8)	0 (0.0)	2 (3.2)	1 (1.6)		
I don't know	3 (4.8)	0 (0.0)	1 (1.6)	2 (3.2)		
Participant's Father's Occupational Status						
Not working	12(19.4)	0 (0.0)	3 (4.8)	9 (14.5)	2.818	2	.589
Employed	29(46.8)	0 (0.0)	9 (14.5)	20(32.3)		
Business	21(33.9)	1 (1.6)	8 (12.9)	12(19.4)		
Participant's Mother's Occupational Status						
Not working	11(17.7)	1 (1.6)	2 (3.2)	8 (12.9)	6.263	2	.180
Employed	29(46.8)	0 (0.0)	12 (19.4)	17(27.4)		
Business	22(35.5)	0 (0.0)	7 (11.3)	15(24.2)		
Father's Level of Education						
University	9 (14.5)	0 (0.0)	3 (4.8)	6 (9.7)	5.030	5	.889
College	14(22.6)	1 (1.6)	5 (8.1)	8 (12.9)		
Secondary	7 (11.3)	0 (0.0)	3 (4.8)	4 (6.5)		
Primary	2 (3.2)	0 (0.0)	0 (0.0)	2 (3.2)		
Did not attend school	4 (6.5)	0 (0.0)	1 (1.6)	3 (4.8)		
I don't know	26(41.9)	0 (0.0)	9 (14.5)	17(27.4)		
Mother's Level of Education						
University	11(17.7)	0 (0.0)	2 (3.2)	9 (14.3)	6.925	5	.733
College	10(15.9)	0 (0.0)	5 (7.9)	5 (7.9)		
Secondary	13(20.6)	1 (1.6)	4 (6.3)	8 (12.7)		
Primary	3 (4.8)	0 (0.0)	1 (1.6)	2 (3.2)		
Did not attend school	5 (7.9)	0 (0.0)	1 (1.6)	4 (6.3)		
I don't know	21(33.3)	0 (0.0)	8 (12.7)	13(20.6)		

Table 1 presents the distribution of severity of depression in relation to the socio-demographic characteristics. The respondents' scores on depression were classified into borderline, moderate and severe using DBI-II. The distribution of variables was as indicated in Table 1.

Table 2: Distribution of Socio-Demographic Characteristics and Participant's Academic Performance

Variables	Total %	Participant's Academic Performance			Chi-Square Test		
		E = Poor	D, D- = Weak	C, C+, C-, D+ = Average	X^2	Df	Sig.
Participant's Age							
14-16	54 (84.4)	8(12.5)	41(64.1)	5 (7.8)	1.08	1	.58
17-19	10 (15.6)	2 (3.1)	8 (12.5)	0 (0.0)	9		0
Participant's Gender							
Male	24 (38.7)	5 (8.1)	18(29.0)	1 (1.6)	1.27	1	.52
Female	38 (61.3)	5 (8.1)	29(46.8)	4 (6.5)	8		8
Participant's Class of Study							
Class One	2 (3.2)	0 (0.0)	2 (3.2)	0 (0.0)	16.9	7	.26
Class Two	5 (8.1)	0 (0.0)	3 (4.8)	2 (3.2)	12		1
Class Three	16 (25.8)	4 (6.5)	12(19.4)	0 (0.0)			
Class Four	13 (21.0)	4 (6.5)	9 (14.5)	0 (0.0)			
Class Five	3 (4.5)	0 (0.0)	2 (3.2)	1 (1.6)			
Class Six	1 (1.6)	0 (0.0)	1 (1.6)	0 (0.0)			
Class Seven	12 (19.4)	1 (1.6)	10(16.1)	1 (1.6)			
Class Eight	10 (16.1)	1 (1.6)	8 (12.9)	1 (1.6)			
The Caregiver the Participant Lives with							
Both Parents	35 (55.6)	6 (9.5)	25(39.7)	4 (6.3)	7.72	4	.46
Father alone	3 (4.8)	1 (1.6)	2 (3.2)	0 (0.0)	7		1
Mother alone	19 (30.2)	2 (3.2)	17(27.0)	0 (0.0)			
Grandparen	2 (3.2)	1 (1.6)	1 (1.6)	0 (0.0)			
	4 (6.3)	0 (0.0)	3 (4.8)	1 (1.6)			

ts

Guardian

Participant's Parent's Marital Status

Married	41 (65.1)	9(14.3)	28(44.4)	4 (6.3)	8.56	4	.38
Single	7 (11.1)	0 (0.0)	7 (11.1)	0 (0.0)	9		0
Separated	9 (14.3)	1 (1.6)	8 (12.7)	0 (0.0)			
Divorced	3 (4.8)	0 (0.0)	3 (4.8)	0 (0.0)			
I don't know	3 (4.8)	0 (0.0)	2 (3.2)	1 (1.6)			

Participant's Father's Occupational Status

Not working	12 (19.4)	1 (1.6)	10(16.1)	1 (1.6)	2.62	2	.62
Employed	29 (46.8)	7(11.3)	20(32.3)	2 (3.2)	1		3
Business	21 (33.9)	2 (3.2)	17(27.4)	2 (3.2)			

Participant's Mother's Occupational Status

Not working	11 (17.7)	3 (4.8)	6 (9.7)	2 (3.2)	4.13	2	.38
Employed	29 (46.8)	3 (4.8)	24(38.7)	2 (3.2)	6		8
Business	22 (35.5)	4 (6.5)	17(27.4)	1 (1.6)			

Father's Level of Education

University	9 (14.5)	1 (1.6)	6 (9.7)	2 (3.2)	12.0	5	.28
College	14 (22.6)	3 (4.8)	10(16.1)	1 (1.6)	21		4
Secondary	7 (11.3)	3 (4.8)	4 (6.5)	0 (0.0)			
Primary	2 (3.2)	1 (1.6)	1 (1.6)	0 (0.0)			
Did not attend school	4 (6.5)	1)1.8)	3 (4.8)	0 (0.0)			
I don't know	26 (41.9)	1 (1.6)	23(37.1)	2 (3.2)			

Mother's Level of Education

University	11 (17.7)	2 (3.2)	8 (12.7)	1 (1.6)	4.28	5	.93
College	10 (15.9)	1 (1.6)	8 (12.7)	1 (1.6)	2		4
Secondary	13 (20.6)	2 (3.2)	10(15.9)	1 (1.6)			
Primary	3 (4.8)	1 (1.6)	2 (3.2)	0 (0.0)			
Did not	5 (7.9)	2 (3.2)	3 (4.8)	0 (0.0)			
attend	21 (33.3)	2 (3.2)	17(27.0)	2 (3.2)			
school							
I don't							
know							

Table 2 shows the distribution of socio-demographic characteristics and participants' academic performance. As revealed in Table 2, frequency of the weak grade on academic performance was noted to be high across all socio-demographic factors as opposed to other grades.

Table 3: Logit Log Linear Regression Analysis Evaluating Factors that Lead to Poor Academic Performance

Model	Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
	B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1 (Constant)	.963	.292		3.293	.002	.376	1.550
How participant communicates with caregiver	.001	.061	.003	.022	.982	-.121	.124
How mode of communication contributes to participant's academic performance	-.010	.060	-.025	-.159	.014*	-.129	.110
Who caters for participant at school?	-.052	.061	-.122	-.858	.395	-.175	.070
Participant's opinion on who encourages he/she to have good performance	.019	.057	.049	.335	.739	-.096	.134
Who assists the participant in private studies at home	.079	.067	.185	1.188	.240	-.055	.214
How often does participant's caregiver assist in doing homework at home?	-.153	.078	-.352	-1.966	.054*	-.310	.003
Does he/she give extra school work at home?	.005	.176	.005	.029	.007*	-.348	.358
Who goes to school to meet the teacher regarding the participant's school performance and overall discipline?	.003	.035	.014	.100	.921	-.067	.073

The person the participant shares problem with	.111	.055	.276	2.009	.050*	.000	.221

a. Dependent Variable: Marks the participant attained in the last exam

Table 3 presents logit log linear regression to evaluate factors that led to poor academic performance. Logit log linear regression is a statistical method for analysing a data set in which there are one or more independent variables that determine an outcome variable. How the mode of communication contributed to participant's academic performance was statistically noted to be a factor contributing to participants' academic performance β = -.010 (p=0.014). Likewise, the regression analysis showed that the variable: "How often does participant's caregiver assist in doing homework at home?" was found to be statistically a factor contributing to academic performance β=-0.153 (p=0.054). Further, the analysis indicated that; "Does she/he give extra school work at home?" was statistically a factor contributing to academic performance β=0.005 (p=0.007). Additionally, the person the participant shared their problems with was statistically found to be a factor contributing to participants' academic performance β=0.111 (p=0.050).

Table 4: ANOVA Analysis Testing the Association of Predictive Factors and Academic Performance

		Sum of Squares	df	Mean Square	F	Sig.
My caregiver attends all school organized parents' meetings	Between Groups	6.421	2	3.210	3.595	.034*
	Within Groups	53.579	60	.893		
	Total	60.000	62			
When I need assistance in any school work, my caregiver helps promptly	Between Groups	.989	2	.494	.731	.486
	Within Groups	40.567	60	.676		
	Total	41.556	62			
My caregiver always encourages me to work hard in school	Between Groups	7.192	2	3.596	3.492	.037*
	Within Groups	59.726	58	1.030		
	Total	66.918	60			
My caregiver attends sign language seminars organized by the school	Between Groups	2.366	2	1.183	1.161	.320
	Within Groups	60.102	59	1.019		
	Total	62.468	61			
My caregiver visits teachers uninvited and demands to know my academic progress	Between Groups	2.278	2	1.139	1.533	.224
	Within Groups	44.579	60	.743		
	Total	46.857	62			
My caregiver is my role model	Between Groups	5.805	2	2.902	3.055	.052*
	Groups					

	Within Groups	55.113	58	.950		
	Total	60.918	60			
When I am faced with challenges, my caregiver helps me to feel better	Between Groups	3.489	2	1.744	1.686	.194
	Within Groups	62.067	60	1.034		
	Total	65.556	62			
My caregiver always teaches me on how to be positive in life	Between Groups	5.194	2	2.597	2.595	.083
	Within Groups	58.052	58	1.001		
	Total	63.246	60			
My caregiver teaches me life skills	Between Groups	8.681	2	4.341	5.609	.006*
	Within Groups	45.657	59	.774		
	Total	54.339	61			

Table 4 presents the ANOVA analysis testing the association of predictive factors and academic performance. The study assumed that the mean of the variables as indicated in Table 4.9 was not equal to the means of academic performance of the participants at baseline. Hence, the variables were not predictive factors of academic performance. For instance, "My caregiver attends all school organized parents' meetings" was tested using ANOVA to determine whether the mean of participants whose caregiver attended all school organized parents' meetings was equal to the mean of academic performance among participants. The results revealed existence of a significant relationship (p=0.034) between participants' academic performance mean and caregiver who attended all school organized parents' meetings. This can be interpreted to mean that if caregiver could attend all schools' organized meetings, the participants' academic performance could significantly improve.

Another variable that was tested by ANOVA was to assess whether the mean of participants whose caregiver always encouraged them to work hard in school was equal to the mean of academic performance among the participants. The results showed a significant association between the mean of participants whose caregiver always encouraged them to work hard in school and their academic performance (p=0.037). This signified that the caregivers' constant encouragement to participants to work hard in school could improve their academic performance. On the same note, "My caregiver is my role model" was tested to check whether the mean of participants whose caregiver was a role model was equal to the mean of academic performance among the participants. The finding indicated that there was a significant association between the mean of participants whose caregivers were their role models, implying that the participants' academic performance would improve if caregivers assumed role modelling responsibility (p=0.052). Another variable, "My caregiver teaches me life skills" was tested to determine if the mean of participants whose caregivers taught them life skills was equal to the mean of the academic performance among the participants. The result indicated that there was a significant association between participants whose caregivers taught them life skills and their academic performance (p=0.006). This denotes that if caregivers taught participants life skills, their academic performance would significantly improve.

Table 5. Difference in Means of Participant's Scores on Depression and Predictive Factors

		Sum of Squares	df	Mean Square	F	Sig.
How often does participant's caregiver assist in doing homework at home?	Between Groups	12.643	2	6.322	5.907	.005*
	Within Groups	64.214	60	1.070		
	Total	76.857	62			
How participant communicates with caregiver	Between Groups	3.288	2	1.644	1.196	.309
	Within Groups	82.458	60	1.374		
	Total	85.746	62			
How mode of communication contributes to participant's depression	Between Groups	13.918	2	6.959	4.744	.012*
	Within Groups	88.019	60	1.467		
	Total	101.937	62			
Participant's opinion on who encourages he/she to have good performance	Between Groups	.013	2	.007	.004	.996
	Within Groups	95.733	60	1.596		
	Total	95.746	62			
Who assists the participant in private studies at home	Between Groups	6.808	2	3.404	2.813	.068
	Within Groups	72.620	60	1.210		
	Total	79.429	62			
Does he/she give extra school work at home?	Between Groups	2.703	2	1.352	7.407	.001*
	Within Groups	10.948	60	.182		
	Total	13.651	62			
Who goes to school to meet the teacher regarding the participant's school performance and overall discipline?	Between Groups	.880	2	.440	.116	.891
	Within Groups	227.343	60	3.789		
	Total	228.222	62			

The person the participant shares problem with	Between Groups	5.356	2	2.678	1.889	.160
	Within Groups	85.057	60	1.418		
	Total	90.413	62			
Who caters for participant at school?	Between Groups	.022	2	.011	.009	.992
	Within Groups	78.962	60	1.316		
	Total	78.984	62			

Table 5 presents the ANOVA analysis showing relationships in the means of participants' scores on depression and predictive factors. This study assumed that there was no significant difference in the means of participants' depression and the variables presented in Table 5. For instance, the variable; "How often does participant's caregiver assist in doing homework at home?" was tested and the results showed that there was a significant relationship (p=0.005) between the means of participants whose caregivers often assisted participants in doing homework and depression. This implies that there was a significant association between participants who often received assistance from their caregivers and depression. Further, the analysis revealed that the mode of communication as a contributory factor was statistically correlated with depression (p=0.012). Similarly, the variable of caregivers giving extra school work at home and depression was tested and ANOVA analysis showed that there was a significant association (p=0.001) between depression and getting additional engagement from caregivers while at home.

Discussion

The findings of this study indicated that the mode of communication used by caregivers was a factor contributing to participants' academic performance β = -.010 (p=0.014). It appeared as if the extent to which DHH adolescents interacted with others, the accommodations and the support provided to them helped them to express themselves, reduce depression and improve academic performance. Additionally, communication barriers could make it difficult for DHH adolescents to participate appropriately in class which could lead to exclusion (Brice & Strauss, 2016). A study conducted by Marschark et al., (2015) indicated that communication affected academic achievement in Comprehension, Maths, Social Studies and Science at 13%, 13%, 13% and 15% respectively. These findings corroborate the findings of a study by Brice and Strauss (2016) in

which parents and teachers who were not using sign language as a mode of communication were restricting DHH adolescents' cognitive development and precipitating poor academic performance. Similarly, these results support a recent study by Terlektsi et al., (2020) which noted that 77% of DHH adolescents reported being bullied because of communication difficulties and this affected their academic performance. The same study revealed that 43% of DHH adolescents found it hard to make new friends and did not feel confident to speak because of communication breakdown and this contributed negatively to their academic performance.

Further, this study sought to find out how often participants' caregivers assisted them in doing homework. The finding revealed a statistical risk factor to academic performance β=-0.153 (p=0.054). The finding agrees with a study done by Alegre de la Rosa and Angulo (2019) where 67.24% participants were helped by their fathers to do homework and this reinforced their academic performance. The finding is also in line with Duarte et al., (2016) which revealed that caregivers helped DHH adolescents in doing homework and this increased their communication and academic performance at 22% (p=0.02). Similarly, Wanjiru (2014) noted that 60% of DHH adolescents whose parents were consistently involved in their learning process portrayed significant benefits in their behaviors which reduced depressive symptoms and increased academic performance. In addition, 39% of DHH adolescents were assisted in doing homework by the parents and this improved their academic performance. A similar study by Akellot and Bangirana (2019) however noted that assisting DHH adolescents in doing homework was not associated with their academic performance (p=0.46).

In addition, the finding indicates that being given extra work at home was statistically a contributing factor to academic performance β=0.005 (p=0.007). This can be interpreted to mean that through assisting DHH adolescents do homework and giving them extra homework, strong ties between the DHH and their caregivers is enhanced. This could positively reinforce their self-esteem and instil confidence in them, thus promoting healthy child-parent relationship. Consequently, this could create a good environment for DHH to ask questions and share their feelings, which in turn could motivate them to work harder in school and post good academic results.

Additionally, the caregiver whom participants shared their problems with was statistically found to be a contributing factor to participants' academic performance $\beta=0.111$ (p=0.050). This corroborates with a study that found out that DHH adolescents who shared and interacted with their parents displayed better mental flexibility and cognitive control as well as more creative thinking and problem solving skills extended to social and academic settings (Napoli et al., 2015). However, Brice and Strauss (2016) noted that DHH adolescents found themselves in a unique acculturative situation distinct from other adolescents. This is because 95% of DHH adolescents were born to hearing parents who had limited knowledge of a sign language.

The findings of this study are in agreement with a study conducted in Australia which revealed that language used at home was a significant predictor of depression among mental health problems (Brown & Cornes, 2015). Similarly, a study by Marschark et al., (2015) concurred with this study when they observed that in communication in hearing families, fathers were the most vulnerable. In approximately 50% of cases, it was the mother who was the main signer and in 50% of occasions it was a sibling, but rarely the father which caused a lot of loneliness and stress to DHH adolescents and limited family sharing.

Further, Kushalnagar et al. (2017) revealed that difficulties understanding basic communication with parents increased the odds of depression. This finding concurs with a study conducted by Kushalnagar et al., (2017) which revealed that the mothers' communication with male DHH was associated with depression. Further, the study revealed that approximately 27% reported that they had communication difficulties. A similar study conducted by Wambui (2015) found that communication barrier both at home and school was the main reason associated with poor academic performance. This implies that greater attention is needed to promote healthy communication between DHH adolescents and their caregivers. This is likely to reduce the emergence of depression at a later time in their lives.

In addition, a study by Jaiyeola and Adeyemo (2018) found out that the majority of DHH adolescents had parents with typical hearing levels and about 80% of parents were unable to communicate, which created a gap for depression vulnerability and direct effect on their quality of life. This affirms an association between mode of communication and depression. Also,

there is evidence to show that DHH adolescents were at high risk of psychsocial stress such as low self-esteem and empathy after controlling language ability (Netten et al., 2015).

Statistically significant associations were found between participant's academic performance and attendance of school's organized meetings p=0.034. This finding corroborates with a study by Wong et al., (2018) which noted that 61.15% of study participants agreed that their fathers attended school meetings and this resulted in good academic performance. Another factor which was found to be statistically associated with academic performance was encouraging participants to work hard in school (p=0.037). Caregivers who were role models and taught participants life skills contributed to improved academic performance at (p=0.052) and (p=0.006), respectively. This finding concurs with a study conducted by Wong et al., (2018) which revealed that parents who taught their DHH adolescents life skills became their role models. Consequently, this strengthened their problem-solving skills and decision making which could be related to successful transition from elementary to high school.

Additionally, adolescence is a challenging transitional period for many young people including the DHH adolescents (Wong et al., 2017). They go through many changes: physical, cognitive, emotional and social development of their lives during this stage. These changes lead to unnecessary stress, anger issues and low self-esteem resulting in low academic performance and maladaptive behaviours in school and at home. Similarly, adolescence is a period of experimenting, experiencing, and expanding in growth and development (Brice & Strauss, 2016). Therefore, adolescents need help and guidance in decision making, problem solving, critical thinking, developing interpersonal skills, self-awareness, empathy, coping with stress and managing emotions. According to Ramakrishna et al., (2016) teaching of life skills promotes healthy behaviour and mental well-being. Life skills fulfill an important role in developing communication skills, interpersonal skills and problem-solving skills as these are critical in shaping individuals' personalities.

Further, this study concurs with Scarinci et al., (2018) who noted that caregivers' values and beliefs on language development, life and social skills on the unity of the family promote positive deviation in school. This was reinforced by a study which affirmed that caregivers always discussed with their DHH adolescents on how to have a normal life that influenced their

decisions and academic performance (Crowe et al., 2014). Similarly, Guardino and Cannon (2016) argued that family support and attributes contribute to DHH adolescents' social and academic development. This was contrary to a study conducted by Wong et al. (2017) which stated that DHH adolescents'academic performance depends on other related factors such as other disabilities.

Another contradiction on life skills was noted in a study by Ramakrishna et al., (2016) that it is the role of educators to teach life skills along with other subjects at primary and high schools. Further, the study noted that life skills fulfill an important role in developing communication, interpersonal and problem solving skills as they shape individuals' personalities. The same views were echoed by Adibsereshki et al., (2015) who stated that school is the only place where DHH adolescents learn life skills and ways of being in the world.

Conclusion

This study has established that factors associated with DHH adolescents' depression and academic performance centered on caregivers' services at home. The Logit Linear regression analysis revealed that the main factors contributing to participants' academic performance were the mode of communication used the frequency at which caregivers assisted their DHH adolescents in doing homework, giving extra homework, and the person with whom participants shared their problems. Further, the study found out that there was an association between predictive factors and academic performance, notably caregivers attending school organised meetings (p=0.034), encouraging participants to always work hard (p=0.034), caregivers being role models to participants (p=0.052) and participants being taught life skills by caregivers (p=0.006). Equally, this study revealed that the mode of communication used, the frequency at which caregivers assisted DHH adolescents in doing homework and giving of extra homework were predictive factors to DHH adolescents' depression. This study concluded that poor academic performance was a factor which could lead to depression. Thus, early diagnosis and management of depression could lead to reduction in symptoms of depression. This in return could improve the academic performance for DHH adolescents.

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