Scholars Journal of Arts, Humanities and Social Sciences **ISSN 2347-5374 (Online)**
Sch. J. Arts Humanit. Soc. Sci. 2016; 4(7):828-835 **ISSN 2347-9493 (Print)**

(An International Publisher for Academic and Scientific Resources) DOI: 10.36347/sjahss.2016.v04i07.012

Effects of Stuttering on Social Interaction among Young Adolescents in Kakamega County, Kenya

Okutoyi Joel[1], Kochung J. Edwards[1], Mbagaya V. Catherine[2]
[1]Department of Special Needs Education, Maseno University, P.O Box 333, Maseno, Kenya
[2]Department of Educational Psychology, Maseno University, P.O Box 333, Maseno, Kenya

***Corresponding Author:**
Okutoyi Joel
Email: joelokutoyi@gmail.com

Abstract: Stuttering is a speech disorder characterized by repetitions, prolongations, interjections, hesitations and blocks. The prevalence rate of persons who stutter in the World is 1%. Kenya has an estimated 440, 000 persons who stutter, out of which 16,606 live in Kakamega county. Results from a baseline survey carried out in counties in Wesstern Kenya Region between 2010 and 2013 to find out the distribution of Learners Who Stutter (LWS) indicated that; Kakamega had 138, Vihiga 84, Bungoma 33, and Busia 10. In Kakamega county these learners were enrolled in 20 schools. The same survey showed that LWS are getting less than 250 marks out of possible 500 marks. Research has shown that this low performance is due to stuttering effects such as anxiety, stigma, fear, frustrations and embarrassment to the LWS while speaking. However, the influence of these stuttering effects on social interaction among learners are unknown. The purpose of study was to determine the influence of stuttering effects on social interactions among LWS. Objective of study were to; establish the status of social interactions among LWS and determine influence of stuttering effects on social interactions among LWS. The study employed descriptive survey and correlation research designs. The target population consisted of 84 LWS, 2301 regular learners in class six, seven and eight; 120 teachers and 20 head teachers. Stratified random sampling was used to select 329 regular learners, while saturated sampling was used to select 76 LWS, 108 teachers and 18 head teachers. Data was collected using questionnaire, interview schedule, and observation guide. Face and content validity of instruments was established. Reliability of instruments was established through test-retest method on 10% of study population using Pearson correlation; reliability was accepted at 0.7 and above. Quantitative data was analyzed and presented in percentages and means. Multiple regressions were used to find out effects of stuttering on social interactions among LWS. Qualitative data was transcribed, analyzed and reported in emergent themes and sub-themes. The findings of the study indicated that Effects of stuttering explained 57.8% (R^2 Change= .578) $p<.05$ negative variance in social interactions among LWS. The finding further indicated that LWS had difficulties in social interactions due to effects of stuttering and this may explain their poor performance in class if they cannot interact easily with their peers and teachers. In conclusion, the effects of stuttering negatively influenced social interactions among LWS.
Keywords: effects of stuttering, social interactions, learners who stutter.

BACKGROUND

Social interaction is the ability of two or more people to communicate or acknowledge one another and form relationships. It is important in the formation of relationships, interaction, influencing social roles, status and fostering the wellbeing of one another in the society. Davis, Howell and Cooke [1] carried out a study to establish the socio-dynamic relationships between Children Who Stutter (CWS) and Children Who do not Stutter (CWDS) in England. The study used a sociometric scale to assess social relationships between CWS and CWDS. The peer relationship between 16 CWS and 403 CWDS were examined. Results indicated that CWS were rejected and less popular compared to CWDS. Secondly, CWS were likely to be bullied and to seek help from teachers and other peers. Although the current study bears similarity with Davis *et al* [1] on the interaction between CWS and CWDS, it sought to find out the effects of stuttering on social interactions among LWS themselves. In view of the fact that data on LWS is limited, this study is an important addition on the social interactions of learners who stutter in regular primary schools. Thirdly, the current study used a bigger population of learners who stutter (84 LWS), and a bigger sample size (76 LWS) to establish the effects of stuttering on social interaction, unlike Davis et al who used a smaller population of 16 CWS. The larger population in the present study made the findings more reliable than Davis et al who used a smaller population. Fourth, the present study used a rating scale type of questionnaire, unlike Davis et al who used a sociometric scale. In addition, Davis et al study was a comparative study unlike the present study which was a correlational study on influence of

stuttering effects on social interactions among LWS. Thus, the present study aimed at establishing how stuttering effects influenced social interactions among LWS rather than comparing social dimensions between LWS and regular learners.

In Australia, research findings by Jaan [2] found that stuttering has social consequences for preschoolers aged 3 and 4 years old. This is because some CWS avoid speaking during play as a result of negative peer reaction due to stuttering. For example, peers react with confusion, interrupt, mock, walk away from or ignore the pre-school child who stutters. Jaan's [2] findings focused on preschoolers who stutter while the present study found out the effects of stuttering on social interactions among young adolescents who stutter.

Sorin-peters [14]observed that speaking fluently and effectively to others is a highly valued skill that has many ramifications. Having the ability to speak with fluency and its effect will likely enhance life opportunities, whereas dysfluency and inarticulacy are likely to confer disadvantage. In addition, findings by Langevin and Hagler [3] show that the negative social consequences begin early for WS. For example, in primary schools the children are perceived negatively by their non-stuttering peers, and may be more susceptible to bullying and difficulty in establishing friendship with peers than CWDS [1]. Similarly, Mayo and Mayo [15] suggest that many PWS in the USA view their stuttering as an obstacle to forming relationships and talking to members of the opposite sex.

In the USA, findings by Schneider 16] observed that PWS appear to be stereotyped as quiet, shy, guarded, anxious, and nervous individuals who are nevertheless friendly, intelligent and co-operative. In addition, PWS experience negative consequences in terms of intimate and social relations [4]. Subsequent researchers have found that adolescents who stutter are more likely to be teased or bullied at school [3, 5, 6]. There is also evidence that they are more likely to suffer from anxiety [6, 7].

Gabel *et al* [4] indicated that stuttering profoundly affected individual's interpersonal relationships. In fact, the way in which PWS cope with their communication disorder and develop interpersonal relationships depends strongly on the way listeners who do not stutter react to them.

Many PWS avoid social interaction as much as possible, which may reduce their chances of finding friends romantic partners. It is very reasonable for PWS to avoid both intimate and general relationships, since research shows that the majority of people do not find those who stutter to be acceptable romantic partners or friends (Davis et al, 2006). Davis *et al* [1] focused on social interaction among adult PWS. The present study focused on the effects of stuttering on social interactions among adolescent

Davis, Howell and Cooke [1] carried out a study to establish the sociodynamic relationships between CWS and their non-stuttering classmates in England. The study used a sociometric scale (adapted from Coie, Dodge, and Copptelli, 1982) to assess CWS in classroom groups with fluent peers. The peer relationship between 16 CWS and their 403 CWDS was examined. Results indicated that CWS were rejected more significantly often than their peers. Secondly, CWS were less likely to be popular. When compared to CWDS, the CWS were likely to be bullied and seek help from teachers and non-stuttering peers [1].

Although the current study bears similarity with Davis *et al* [1] on relationships between CWS and CWDS, the present study sought to find out the effects of stuttering on social interactions among adolescent LWS in terms of comparison between social interactions between learners who stutter and regular learners. Secondly, the present study used five point rating scale type of questionnaire and an interview schedule to find out the effects of stuttering on social interaction, unlike Davis *et al* [1] who used a sociometric scale. In addition, in view of the fact that data on LWS is limited; this study is an important addition on social interactions between learners who stutter and regular learners in primary schools.

Beilby, Byrnes, Meagher and Yaruss [8] carried out a study in Australia on the impact of stuttering disorder on the perceived quality of life, with emphasis on the individual's relationship with their partner or spouse. Specifically, the purposes of the study were to investigate what personal experiences and themes exist for both members of a couple of adults who stutter and their fluent life partner when one member of the couple stutters and to examine whether the partners have different experiences with respect to the impact of stuttering on their lives. A mixed method research design was used. Participants (adults who stutter and their fluent life partner) each completed one semi-structured qualitative interview and two questionnaires: the Overall Assessment of Speakers' Experience of Stuttering (OASES), and the Medical Short Form 36 (SF-36). Interviews were analyzed qualitatively and significant themes evaluated. Quantitative results of the OASES and SF-36 were analyzed, and scores correlated to determine the strength of any clinically significant relationships. Results indicated that people who stutter and their fluent partners reported similar experiences in reactions to stuttering and perceived difficulties in communication. However, no relationship was seen between the two groups in terms of the perceived

impact on the quality of life. Qualitative results showed that the participants shared life experiences including reactions to stuttering, treatment undertaken and support. Such findings lend support to a broad-based clinical programme for adults who stutter that includes the fluent partner as an agent of change in their treatment. Findings also support the utilization of qualitative and quantitative research techniques to elucidate relevant psychosocial life themes and experiences for those who live with a stuttering partner.

Beilby *et al*. [8] study was related to the present study with regard to impact of stuttering on relationships. However, the present study found out effects of stuttering on social interactions among LWS, unlike Beilby *et al* [8] who focused on relationships among adult couples. Secondly, the study used mixed method research design; whereas the present study used correlational and descriptive survey design to address the effects of stuttering on social interactions among LWS. Although both studies used questionnaires, the present study in addition used document analysis guide and observation schedule to establish the impact of stuttering on social interactions.

Yaruss and Quesal [9] carried out a study to find out the attitude of partners in dating a PWS at the university. The study population consisted of students who stutter and other regular students at the university. The age range of the selected students was between 18-25 years old. Findings indicated that most respondents indicated they would not date a PWS. In addition, it was found out that stuttering was associated with negative attitudes towards communication, the degree to which PWS are able to participate in the society, and negative responses from listeners. In view of the fact that PWS have a problem with dating partners, the present study found out the effects of stuttering on social interactions of younger LWS. In view of the fact that there is limited literature on social interactions of LWS, the present study will be carried out in primary schools.

Spiller [10] observed that many People Who Stutter (PWS) in England have a self-concept that revolves around their stuttering. PWS may have experienced a number of negative and disapproving reactions to their stuttering. The person may internalize these reactions and begin to believe that stuttering is socially unacceptable behavior and therefore they have no place in the society [10].

Blood and Blood [5] carried out a study in U.S.A to examine the perceived communicative competence, self-esteem, and vulnerability to bullying of 53 adolescents who stutter and 53 adolescents who do not stutter. Adolescents who stutter were at a significantly higher risk of experiencing bullying behavior (43%) than were adolescents who do not stutter (11%). The majority of adolescents who stutter (57%) rated themselves as having poor communicative competence. In contrast, only 13% of the adolescents who do not stutter rated themselves as having poor communicative competence. Seventy-two percent of adolescents who stutter scored within 1 SD from the mean on a standardized measure of self-esteem, which is indicative of positive self-esteem. Students with low self-esteem and poor confidence in their communicative competence were more likely to be victimized by bullies. Blood and Blood (2004) compared communicative competence, self-esteem, and vulnerability to bullying between LWS and learners who do not stutter. The current study goes further to look at the effects of stuttering on social interactions among young adolescents.

In Kenya, former Western province had the highest number of persons with disabilities who experienced severe difficulties (28%) and it also had the highest number of school dropout rates (49%) of children with disabilities [11]. Thus the study was carried in the former Western province. Stuttering is a severe difficulty of speech. According to Kang C[17] the prevalence of persons who stutter, (PWS) is 1% in the World. Kenya is estimated to have a prevalence of 440,000 persons who stutter (PWS). Kakamega County is estimated to have the highest prevalence of PWS in former western province (16,606 PWS). Out of which 4,400 are school going age children who stutter.

According to a baseline survey that was done across Western Kenya Region (2010-2013), Kakamega County had the highest number of Learners who Stutter LWS (138), followed by Vihiga (84), Bungoma (33), and Busia (10) in primary schools. These learners faced a number of challenges as a result of their stuttering condition. Such challenges included; stigma from peers and teachers, rejection, withdrawal from others, inadequate participation in school activities, poor academic performance, and inadequate social interactions. It is based on the results of this baseline survey that Kakamega County was chosen for this study.

Previous studies have revealed that stuttering had effects such as anxiety, stigma, fear, frustrations and embarrassment to the LWS while speaking. It was unknown how these effects of stuttering influenced social interactions among adolescent LWS in Kenya. Therefore, the current study was carried out to determine the effects of stuttering on social interactions among young adolescent learners in regular primary schools in Kakamega County, Kenya.

PURPOSE OF THE STUDY

The purpose of this study was to determine the influence effects of stuttering on social interactions among young adolescent learners in Kakamega County,

Kenya. The objectives to this study were to; Establish the status of social interactions the effects of stuttering on social interactions among young adolescent learners.

RESEARCH METHODOLOGY

The study employed descriptive survey and correlational research designs. The study was carried out in Kakamega County because there were 216 LWS already assessed and placed in regular primary schools from 2003 to 2013.

The target population consisted of 84 LWS, 2301 regular learners in class six, seven and eight; 120 teachers and 20 head teachers. Stratified random sampling was used to select 329 regular learners, while saturated sampling was used to select 76 LWS, 108 teachers and 18 head teachers. Data was collected using questionnaire, interview schedule, and observation guide. Face and content validity of instruments was established. Reliability of instruments was established through test-retest method on 10% of study population using Pearson correlation; reliability was accepted at 0.7 and above. Quantitative data was analyzed and presented in percentages and means. Multiple regressions were used to find out effects of stuttering on social interactions among LWS. Qualitative data was transcribed, analyzed and reported in emergent themes and sub-themes.

RESULTS AND DISCUSSIONS

Data on effects of stuttering on social interactions among LWS was collected using a questionnaire. Learners were asked to respond on how they interact socially while at school in specific situations. They were expected to select from a rating scale ranging from "Not at all" (1) to "Always" (5). In order to find out effects of stuttering on social interactions, multiple regression analysis was carried out. Before analysis, the researcher sought to find out if the basic assumptions for multiple regression analysis had been met. There was no multicollinearity between independent variables of the study. In addition, the data of individual variables had a fairly normal distribution. The data on interaction social status was analaysed and is presented in tables 1 and 2.

Table 1: Social Interaction status as rated by LWS (n = 76 LWS)

Statement	**M**
I am discriminated in play activities	4.26
I withdraw from social activities	3.47
I am rejected by my peers and teachers at school	4.53
I am not liked by other learners during social interactions while at school (R)	4.38
I am bullied during play activities	3.33
LWS feel teacher avoids listening to them during social activities in school	4.05
I am perceived negatively by regular learners	4.67
I do not socialize well with other learners in school (R)	4.59
I avoid speaking in public due to fear of embarrassment	3.38
I do not like play activities involving talking (R)	4.22
Learners who stutter are not friendly (R)	3.89
Teachers perceive learners who stutter as not outgoing (R)	4. 34
I have do not many friends (R)	4.87
I find it difficulty in establishing interpersonal relationships	3.22
Regular learners laugh at me when I talk	4.33
I withdraw from interacting with regular learners during games that require talking.	4.21
Mean social interaction	**4.11**

Key: n- number of learners who stutter, M-Mean, R- Reverse-coded

From the table key indicators of social interaction included: LWS are stigmatized by regular learners and teachers (M = 4.53), regular learners laugh at LWS during socialization (M = 4.33), discrimination of LWS in play activities (M =4.26), learners who stutter fear interacting with regular learners in games that require talking (M = 4.21), teachers avoid listening to LWS during social activities (M = 4.05). Others ratings included: LWS had difficulty establishing interpersonal relationships (M- 3.22); being bullied during play activities (M = 3.33); LWS avoiding speaking in public due to fear of embarrassment (M = 3.38) and LWS were unfriendly (M = 3.89). The mean negative consequences of social interactions status were M = 4.11 as rated by LWS.

To triangulate the findings from LWS on social interactions, regular learners were asked to respond to the same statements on social interactions. Data was collected using a questionnaire ranging; "Always"- 5 points and "Not at all"- 1 point. It was later analyzed using mean and presented in table 2.

Table 2: Social interaction among LWS according to Regular Learners (Regular learners = 329)

Variable	Mean
Learners who stutter are discriminated in play activities	3.94
Learners who stutter are withdrawn during socialization time	3.40
Learners who stutter are stigmatized by other learners and teachers	4.00
Learners who stutter are not liked by regular learners during social activities (R).	3.97
Learners who stutter are bullied during social interactions	3.68
Teachers do not listen to learners who stutter	4.66
Learners who stutter are perceived negatively by non-stuttering learners	3.79
Learners who stutter do not socialize well with other learners in school (R)	4.46
Learners who stutter avoid speaking in public due to fear of embarrassment	4.40
Learners who stutter do not like play activities involving talking (R)	4.01
Learners who stutter are not friendly (R)	3.84
Teachers perceive learners who stutter as not outgoing (R)	3.74
Learners who stutter have few friends who like interacting with them (R)	4.48
Regular learners find it difficult establishing interpersonal relationships with learners who stutter	4.07
Regular learners laugh at learners who stutter while talking	4.88
Regular learners crack jokes and laugh with learners who stutter during break time	3.89
Overall Mean on social interaction	**4.08**

Key: R- Reverse coded

From table 2, indicated that most regular learners perceived effects of stuttering had negative consequences on social interactions among LWS. Regular learners rated mean negative consequences on social interaction (M = 4.08) among LWS. Findings of this study concur with study findings by Davis *et al* [1] who indicated that LWS are rejected by regular learners. In the present study, LWS were discriminated by regular learners in play activities (M = 4.26). According to the current study, the extent to which learners who stutter were discriminated in social activities such as play was large. In addition, the findings of this study concur with Jaan [2] who found that stuttering has a social consequence for preschoolers aged 3 and 4 years old, as some CWS avoided speaking during play activities due to negative peer reaction to stuttering. For example, peers react with confusion, or they interrupt, mock, walk away or ignore what the pre-school stutterer says. In the present study, most LWS reported they had difficulties in social interaction as rated by LWS (M = 4.11) and regular learners (M = 4.08). This implies that stuttering has a number of negative social consequences that affects LWS in a number of social interaction activities. Although it is difficult to make comparisons between the current study and Jaan [2], it is worth noting that the different groups that were the focus of these two studies both experienced social consequences as a result of stuttering. It is therefore likely that the effects of stuttering occur right from childhood through to adolescence.

MULTIPLE REGRESSION ANALYSIS ON EFFECTS OF STUTTERING ON SOCIAL INTERACTIONS

In order to find out the effects of stuttering on social interactions among LWS, multiple regression analysis were run to predict social interactions from the effects of stuttering. Before analysis, the researcher sought to find out if the basic assumptions for multiple regressions had been met. There was no multicollinearity between the independent variables of the study. In addition, the data of individual variables had a fairly normal distribution. In order to find out if stuttering has an effect on social interaction, multiple regression analysis were run to predict social interaction from the effects of stuttering.

The variables of the study were entered in two steps. The first was for control variables, which included the age, socio-economic status and gender of LWS. The second step included the controlled variables and the five effects of stuttering (anxiety, fear, frustrations, stigma and embarrassment to speak among LWS). The model was significant, F (11, 62) = 21.57, P< .01. As indicated in table 3.

Table 3: Model Significance on Effects of Stuttering on Social Interactions

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.287	6	.214	3.052	.011[a]
	Residual	4.707	67	.070		
	Total	5.993	73			
2	Regression	4.752	11	.432	21.571	.000[b]
	Residual	1.242	62	.020		
	Total	5.993	73			

a. Predictors: (Constant), age of the pupil, occupation of the mother, gender of pupil, level of education of mother, occupation of the father, level of education of father
b. Predictors: (Constant), age of the pupil, occupation of the mother, gender of pupil, level of education of mother, occupation of the father, level of education of father, mean of fear, mean of frustrations, Stigmatization, Anxiety to speak, embarrassment while speaking
c. Dependent Variable: mean of social interaction

Results of model summary on effects of stuttering on social interactions among LWS were presented in table 4.

Table 4: Model Summary for Effects of Stuttering on Social Interactions among LWS

Model	R	R^2	Adjusted R^2	Std. Error of Estimate	Change Statistics				
					R^2 Change	F Change	df1	df2	Sig. F Change
1	.463[a]	.215	.144	.26505	.215	3.052	6	67	.011
2	.890[b]	.793	.756	.14151	.578	34.607	5	62	.000

a. Predictors: (Constant), age of the pupil, occupation of the mother, gender of pupil, level of education of mother, occupation of the father, level of education of father
b. Predictors: (Constant), age of the pupil, occupation of the mother, gender of pupil, level of education of mother, occupation of the father, level of education of father, mean of fear, mean of frustrations, mean of Stigma, mean of Anxiety to speak, mean of embarrassment while speaking
c. Dependent Variable: mean of social interaction

Key: R- a measure of correlation between the observed values of the criterion variable and its predicted values.

R^2- indicates proportion of variable in the criterion variable which is accounted for by the model.
Adjusted R^2- indicates number of predictor variables in the model and the number of observations (participants) that the model is based on.

Table 4 shows that all the variables in model 1 accounted for 75.6% (Adjusted R^2 = .756) of the variance before controlling for intervening variables in social interactions of LWS. After controlling for age, socio economic status and gender in model 2, the effects of stuttering accounted for 57.8 % (R^2 Change = .578) of the variance in social interaction of LWS.

Further, the results of model coefficients on effects of stuttering on social interactions were presented in table 5.

Table 5: Model Coefficient on Effects of Stuttering on Social Interactions (n= 76)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.357	.288		11.658	.000
	Gender of pupil	-.104	.054	-.219	-1.938	.057
	Occupation of the father	.051	.020	.302	2.523	.014
	Occupation of the mother	.036	.036	.114	.995	.323
	Level of education of father	-.045	.027	-.212	-1.660	.102
	Level of education of mother	.031	.024	.165	1.274	.207
	Age of the pupil	-.067	.033	-.230	-2.049	.044
2	(Constant)	1.648	.364		4.526	.000
	Gender of pupil	-.033	.031	-.070	-1.085	.282
	Occupation of the father	.020	.012	.121	1.745	.086
	Occupation of the mother	-.011	.020	-.034	-.547	.586
	Level of education of father	-.012	.015	-.057	-.812	.420
	Level of education of mother	.004	.013	.020	.284	.778
	Age of the pupil	-.032	.018	-.109	-1.733	.088
	Stigma	-.092	.038	-.164	-2.403	.019
	Anxiety to speak	-.271	.068	-.323	-3.976	.000
	Embarrassment while speaking	-.071	.029	-.201	-2.439	.018
	Fear to speak	-.293	.077	-.279	-3.792	.000
	Frustrations while speaking	-.073	.025	-.197	-2.880	.005
a. Dependent Variable: mean of social interaction						

Key: beta (β) - standardized regression coefficient.

-it is a measure of how strongly each predictor variable influences the criterion variable.

The results in table 6 indicate that in model 2; all the control variables in the study were not significant in accounting for variation in social interaction among LWS. The main predictors of social interaction were anxiety while speaking, embarrassment while speaking and stigma against LWS. Anxiety had the highest contribution, (β= -0.323, p<.01) followed by fear to speak, (β= -0.279, p<.01). Embarrassment while speaking was the third, (β= -0.201, p<.05) while frustration was the fourth with β= -0.197, p<.01 and finally stigma towards LWS (β= -0.164, p<.05), in that order.

According to Field [12], negative beta-values on stuttering effects implied that for every one unit increase on each stuttering effect resulted to a decrease in social interactions among LWS. It is evident therefore that the five effects of stuttering had a negative influence on social interaction among LWS. Anxiety to speak negatively influenced social interactions to a very large extent, while stigma influenced social interactions to a smaller extent.

In order to triangulate these results, interviews were conducted among teachers and LWS to find out the effects of stuttering on social interactions. One hundred and four teachers (ninety five percent) noted that learners who stutter experience difficulties interaction.

One teacher reported,

Other learners isolate and discriminate LWS from interacting with them because they do not speak well. They even laugh at them when they get stuck on a word while talking during play activities.

In addition, LWS were interviewed on effects of stuttering on social interactions. Ninety three percent (71) of LWS show stutter reported they experience severe negative consequences in social interaction as a result of stuttering.

One LWS said,

I fear interacting with other learners and teachers because they laugh at me, thus I always avoid them.

Another LWS said,

Other learners repeat the way I talk when I repeat and get stuck on words. This makes me feel very bad, embarrassed and avoid talking activities during play.

From these teachers, head teachers and LWS interview schedules revealed that there were effects of stuttering on social interaction among young adolescents who stutter. Effects such as fear and embarrassment and self-stigma negatively influenced social interactions that a

Further triangulation was done by use of an observation schedule to find out the effects of stuttering on social interaction. Learners who stutter were observed during various social interaction activities. The number of times the children interacted with other learners and teachers was rated and analyzed. Each observation scenario took ten to fifteen minutes. Two scenarios were observed: during outside class activities and in class. In the first scenario, LWS were observed outside the classroom. LWS were observed during games, during short break and long break. A few LWS were seen interacting with regular learners during games time. Most of the time LWS were seen alone. In the second scenario, observation was made while LWS were in class during social activities such as talking to desk mates, talking to the teacher and talking to other members of the class. From the observation, most LWS were seen talking to desk mates when they needed some help from them. Rarely were they seen interacting with the teacher and other regular learners while in class. From the observation schedule data, LWS rarely interacted with others in various social activities. This implies that the effects of stuttering have a negative impact on social interactions among LWS.

Findings of this study concur with Jaan [2] who found that stuttering has social consequences for preschoolers aged 3 and 4 years old. This is because; some CWS avoided speaking during play. This is due to negative peer reaction to stuttering. In the present study, all the five effects of stuttering influenced social interactions among LWS. This is because the five effects of stuttering accounted for 57.8 % (R^2 Change = .578) of the variance in social interaction among LWS. It implies that the effects of stuttering have negative social consequences towards LWS. Although it is difficult to make comparisons between the current study and Jaan [2] with regard to social interactions. It is worth noting that effects of stuttering impact on social interactions across different age groups right from childhood to adolescence.

The findings of this study concur with those of other researchers who noted that effects of stuttering impact on social interactions of LWS [4, 5, 6, 13]. In the present study, the five effects of stuttering influenced social interactions among LWS at a significant variance of 57.8% (R-Square Change = .578). In addition, the study concurs with Davis *et al* [1] who observed that CWS were rejected significantly more often than regular learners. Secondly, CWS were less likely to be popular. When compared to CWDS, the CWS were likely to be bullied and seek help from teachers and non-stuttering peers [1]. In the present study, the effects of stuttering explained a large significant variance on social interactions among LWS

at 57.8% (R^2 Change= .578) p<.01. Although the study is closely related to Davis *et al* [1] on the impact of stuttering on social interactions, the negative social consequences LWS face are as a result of the effects of stuttering.

Furthermore, this study agrees with the findings by Mayo and Mayo [15] who found out that those persons who stutter perceive it as an obstacle to forming relationships. In the present study, adolescent LWS reported in the interview they had difficulty in forming relationships with other learners and teachers. It is evident that effects of stuttering have negative consequences on formation of relationships and interactions among young adolescents.

CONCLUSIONS AND RECOMMENDATIONS

Results of the study revealed that the main predictors were anxiety, which had the highest contribution, (β= -0.323, p<.05) followed by fear, (β= -.279, p<.01). Embarrassment while speaking was the third, (β= -.201, p<.05) while frustration was the fourth with β= -.197, p<.01 and finally stigma towards LWS was least rated, (β= -0.164, p<.05). In total, the effects of stuttering accounted for 57.8% (R^2 change= .578, p<.05) of the variance in social interaction among learners who stutter. Therefore it is evident that the five effects of stuttering influenced social interactions among LWS. The five effects of stuttering such as anxiety, fear, frustrations, stigma and embarrassment negatively influenced social interactions among LWS. Anxiety had the highest contribution while stigma had the least contribution

Learners who stutter need to be involved in social interaction activities in school through reducing effects of stuttering on LWS by creation of awareness to general school community about stuttering, involving LWS in social activities both in class and outside the class. Teachers also need to give a talk on stuttering and explain to the learners why it is important to include the LWS in various social activities in the school. Regular learners need to be advised not to tease nor bully LWS during various social activities.

REFERENCES

1. Davis S, Howell P, Cooke F; Sociodynamic Relationships between Children who Stutter and their Non-stuttering Classmates. Journal of Child Psychology and Psychiatry, 2002; 43:939–947.
2. Jaan P; Stuttering has Social Consequences. Canadian Stuttering Association, 2011. Retrieved from http://www.stutter.ca/article/research-article-summary on April 28, 2013 at 3.00 P.M.
3. Langevin M, Hagler P; Development of a Scale to Measure Peer Attitudetoward Children Who Stutter. In Evidence-Based Treatment of Stuttering. Empirical Issues and Clinical Implications (ed. A. K. Bothe), 2004; 139–171.
4. Gabel RM, Blood GW, Tellis GM, Althouse MT; Measuring Role Entrapment of `People who Stutter. Journal of Fluency Disorders, 2004; 29(1): 27–49.
5. Blood GW, Blood IM; Bullying in Adolescents who stutter: Communicative Competence and Self-Esteem. Contemporary Issues in Communication Science and Disorders, 2004; 31:69–79.
6. Blood GW, Blood IM; Preliminary Study of Self-Reported Experience of Physical Aggression and Bullying of Boys who stutter: Relation to Increased Anxiety. Perceptual and Motor Skills; 2007; 104(3): 1060–1066.
7. Craig A, Hancock K, Tran Y; Anxiety Levels in People who Stutter. A Randomized Population Study. Journal of Speech, Language and Hearing Research, 2003; 46(1): 1197–1206.
8. Beilby JM, Byrnes ML, Meagher EL, Yaruss JS; The Impact of Stuttering on Adults who Stutter and their Partners. Elsevier: Journal of Fluency Disorders, 2013; 38 (1):14-29.
9. Yaruss JS; Influence of Fluency Disorders on Quality of Life. Elsevier: Journal of Fluency Disorders, 2010; 35(3), 190–202.
10. Spillers CS; Effects of Stuttering on the Individual, 2011. Retrieved from www.d.umn.edu/cspiller/stutteringpage/effects.htm .
11. Republic of Kenya; National Survey on Persons with Disabilities. Ministry of Planning, National Development and Vision 2030. Nairobi: Government Printers, 2007.
12. Field AP; Research Methods in Psychology: Multiple Regression (3rd Edition). London: Sage. C8057, 2008; 5-11.
13. Langevin T, Marilyn N, Hagler P; Development of a Scale to Measure Peer Attitude toward Children who Stutter." In Evidence-Based Treatment of Stuttering. Empirical Issues and Clinical Implications (ed. A. K. Bothe), 2004; 139–171. Mahwah, NJ: Lawrence Erlbaum Associates.
14. Sorin-Peters R; Viewing couples living with aphasia as adult learners. Implications for promoting quality of life. Aphasiology, 2003; 17:405–416
15. Mayo R, Mayo CM; Would You Date a Person who Stutters? College Students Respond. The Journal of Stuttering Therapy, Advocacy & Research, 2010; 4(145):155.
16. Schneier FR, Wexler KB, Liebowitz MR; Social phobia and stuttering. American Journal of Psychiatry, 1997;154:131.
17. Kang C, Riazuddin S, Mundorff J, Krasnewich D, Friedman P, Mullikin JC, Drayna D; Mutations in the lysosomal enzyme–targeting pathway and persistent stuttering. New England Journal of Medicine. 2010 ;362(8):677-85.