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Effects Of Velopharyngeal Insufficiency On Quality Of Life Of Adults With Repaired Cleft Palate In Kenyatta National Hospital, Nairobi, Kenya

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Abstract: The purpose of this study was to evaluate the effects of Velopharyngeal Insufficiency (VPI) on quality of life of adults with repaired cleft palate. Cleft palate is one of the most prevalent birth defects around the world. The study evaluated the effect of VPI on the quality of life among adults with repaired cleft palate in order to; to establish the effect of VPI on functional ability. The study targeted adults, both males and females with repaired cleft palate at Kenyatta Hospital, Nairobi City County. The study adopted a case study research design. 22 adults with repaired cleft palate, 2 maxillofacial surgeons and 1 speech and language therapist were purposively sampled for the study. The researcher used stratified random sampling to avoid gender bias. The pilot study was carried out at Kijabe Hospital to ensure that different subjects are involved other than those in the actual study. The data was collected using questionnaires, and review of patients' clinical notes in the maxillofacial clinic at Kenyatta National Hospital. The data was analyzed with the use of Statistical Package for Social Sciences version 21 for quantitative data. Categorical data was summarized using frequency tables and proportions. The findings showed that in assessing VPI severity and functional ability, there was a statistically significant association between VPI severity and air coming out of the nose when the respondents talk. There was also a significant association between VPI severity and perception of own speech being different from others, there was significant association between VPI severity and trouble to understand others when they cannot see their face. The results show that most of the persons with VPI after cleft palate repair had challenges of air coming out of the nose and speech difficulties. The level of accessibility of speech therapists is still very low. The study recommends that improving personal belief and self-identify among persons with VPI after cleft palate repair would be essential in improving on how they perceive many things such as functional ability. Also, ensuring that speech therapy services are available for all patients is important in improving functional ability among persons with VPI after cleft palate repair.

Keywords: Velopharyngeal Insufficiency, Cleft Palate,functional ability

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I. INTRODUCTION

1.1Background of the study

A separation of the anatomical parts of the mouth has been defined as a cleft. According to Kummer (2013), cleft palate refers to an opening in the roof of the mouth (hard and soft) such that the two sides making up the palate fail to join as the baby develops in the uterus (Kummer, 2013).

During speech production, the soft palate gets elevated and touches the back of the throat thereby closing off the oral from the nasal cavity enabling sound from the mouth to come out as opposed from the nose. In production of nasal sounds, the soft palate stays down so that sound can travel out of the nose (Sitzman, 2014).

Partial closure of the velopharynx during speech results to velopharyngeal insufficiency, a disorder that comes as a result of inadequate closing of the soft palate onto the pharyngeal wall during speech [13].

There is structural alteration of the soft palate as well as the pharyngeal walls where there is not enough tissue for a complete closure of the pharyngeal sphincter during production of oral sounds. This disorder allows air to escape from the nose during speech resulting to hyper nasal speech that is unintelligible. VPI is mostly caused by history of repaired or unrepaired cleft palate. The percentage of patients with residual VPI following cleft palate repair varies from centre to centre but in general it is estimated that 10%-20% of patients with cleft palate will present with VPI residual post palatal repair[3].

Quality of Life (QOL) refers to "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns" (World Health Organization, [WHO] QQL, 1994). Quality of life seeks to obtain patients total health related experience by evaluating broad domains such as emotional, physical, functional, and spiritual wellbeing.

The prevalence of OFCs is dependent on geographic origin, race, ethnicity and socioeconomic background which may vary from 1/500 to 1/2500 births, and it has been noted that Asians have the highest risk (14/10,000 births), which is followed by whites (10/10,000 births) and the African Americans (4/10,000 births) (D'Antonio&Nagarajan, 2003).

In the United States, at least 1 in 700 babies are born with cleft lip (with or without cleft palate) annually, making it the fourth most prevalent birth defect in the country. Clefts are prevalent among Latino and Asian children Followed by those of the Native American descent. Regionally, there has been a reported incidence of clefts of 0.7 per 1,000 live births (lip and/or palate) in Malawi. Prevalence of OFCs amongst different populations in Africa vary widely and is 0.3 in every 1,000 births as recorded in Nigeria and 1.65 per 1,000 births in Kenya. Among a group of Sudanese hospital newborns in Khartoum, the prevalence was 0.9 per 1,000 live births (Suleiman et al, 2005). [12] conducted a study in Ghana amongst the Wudoaba communities and revealed a prevalence of 5 per 1,000 people. Globally, according to the [5], in the United States, 6500 children are born with orofacial clefts each year. The affected individuals suffer various health complications such as difficulties in speech and feeding and physical health problems.

A Sri Lankan study conducted by [7] that evaluated speech of 18 patients that had undergone palate repair found that late repair severely impairs speech production, and that postoperative surgery improved it. There was minimal improvement in speech articulation among patients who underwent surgery alone in the absence of speech therapy.

In the African context, according to Adetayo, Ford, Martin (2012) pointed that visiting surgical teams contributing to cleft care need to make provisions in addressing the socioeconomic at the institutional level (physician) and individual level (patient), financial and infrastructural barriers, and also by placing their focus on patient education. The authors also allude that partnership by these teams with other practitioners in the African region can be done in a more dynamic, effectual and valuable manner in the promotion of cleft care. In Kenya, according to [14], unrepaired cleft palate is common among the adults in developing countries due to deficient medical services, social and cultural influences, poverty and lack of awareness, fear of some parents/caregivers' surgical operations for children. In developed countries this is different because they do routine surgical treatment with on-going orthodontia, speech and other therapies which is very successful in ameliorating these anomalies.

Surgical repair and rehabilitation care for adults with repaired cleft palate is more complicated with compromised outcomes, with majority of patients having psychosocial problems such as; not being acceptable by peers, some may drop out of school or they may not have attended school due to speech problems, teasing of these patients is common and they are unhappy due to inability to communicate properly, they isolate themselves, and mostly interact with only family members [11].

Cleft palate surgical repair only restores anatomic continuity. Patients continue to exhibit compensatory mis-articulations post palatal repair. Therefore, speech therapy is very vital after cleft palate repair to deal with compensatory speech habits to enhance quality of life of these adults [3].

1.2Statement of the problem

Less attention has been given to persons with cleft palate. [1] identified that this is a special group of handicapped persons whose personal tragedy and problems may well indeed be equal or often exceed those with other body afflictions. These afflictions are usually not of the physical nature but that of the social one, as the visible defect has a psychological effect on the individual to what it means to them and to others.

Majority of patients with cleft palate will have psychosocial problems like lowered self-esteem affecting their rehabilitation and development thus affecting their quality of life. The incidence of psychological problems may be higher than what literature suggest, and it is imperative that part of the reconstructive surgery team includes a psychiatrist as part of the panel, as it is important and essential for such cases to be identified so as to enhance patient's outcomes after surgery and other interventions such as rehabilitation.

Unfortunately, the existing multispecialty care of these patients has been aimed towards physical rehabilitation while neglecting psychological aspects of care. In our Kenyan context, cleft palate repair is usually done by charity organizations, e.g. operation smile and smile train. After a week of surgical exercise, patients are left to heal without putting into consideration the role of speech therapy to deal with VPI and compensatory speech errors. Also, in our context, cleft palate repair is viewed as a cosmetic procedure.

Actual or perceived negative response from outsiders adversely affects self-image, and it has been of great challenge in documenting the common psychosocial factors associated with cleft palate which leave many

questions unanswered; thus, this study evaluated the impact of velopharyngeal insufficiency on the quality of life of adults with repaired cleft palate.

1.3Objectives of the study

The objective of the study was to establish the effect of VPI on functional ability of patients with repaired palate at Kenyatta National Hospital.

1.4 Significance of the study

It is critical to patient care to document reported outcomes of cleft palate treatment. Traditionally, outcomes have concentrated more on measurable attributes such photographs, anatomic structure measurements, as well as morbidity and mortality whose importance is unchallenged, but have also left out many unanswered questions. Studies that would include but not limited to speech, self-image, quality of life as well as aesthetics would provide more in outcomes assessments. This study may benefit the multidisciplinary team, i.e., maxillofacial surgeons, plastic surgeons, orthodontists, in understanding the relevance of quality of life for patients undergoing treatment at the facility, and how they can incorporate it as part of treatment. This can lead to creation of better protocols in terms of management and care for patients in adopting coping strategies with their social life. The study may be useful to various stakeholders in the ministry of health by providing a framework to deal with cleft palate and adopt better treatment strategies for persons who have undergone cleft palate repair. The study findings may also be useful for those interested in pursuing this area on the quality of life for such patients by serving as a reference point.

II. METHODOLOGY

2.1 Area of study

The study was conducted at Kenyatta National Hospital, Nairobi City County. Kenyatta National Hospital is the largest referral Hospital in East and South of Sahara. Being the largest referral Hospital, it has the largest number of adult patients with cleft palate having been referred from all over the country for treatment, hence the researcher was able to get adequate sample from the population of those with cleft palate.

2.2Research design

The study used a case study design which employed both the quantitative and qualitative approaches [6]. The researcher sought to analyze the variables applicable to the issue under study. Case study was used because it provides a detailed investigation of individuals (Polit&Hungler, 1983). The study gives an account of the effects of VPI on the quality of life of adults with repaired cleft palate at Kenyatta Hospital, Nairobi City County.

2.3Population and Sampling design

This study targeted 220 adults both males and females with repaired cleft palate at Kenyatta National Hospital Nairobi City County, 2 Maxillofacial Surgeons and 1 Speech and Language Therapist. This was achieved by reviewing their clinical notes in the maxillofacial clinic and face to face interviews during scheduled review appointment.

The researcher used purposive sampling to choose adults, both male and female with repaired cleft palate. In purposive sampling, the researcher decided the cases to be included in the study based on their judgment. The sample size comprised of 22 adults (both male and female) with repaired cleft palate. The sample size was 10% of a population of 220 adults with repaired cleft palate. Census technique was used to select a sample size of 2 maxillofacial surgeons and 1 speech and language therapist.

2.4 Data collection

The researcher collected primary data using questionnaires and review of patients' clinical notes at the maxillofacial clinic at Kenyatta National Hospital for patients with cleft palate repair in order to obtain in-depth information. According to studies, adults with repaired cleft palate suffer.

The questionnaire procedure is preferred since saves time as, the researcher was not required to be present when the respondents are filling, and the researcher did not need to train interviewers. The questionnaires consisted of list of questions relating to study objectives. The researcher also reviewed patients' clinical notes in the maxillofacial clinic at Kenyatta National Hospital to obtain in depth information about these patients postoperatively.

Interview guide was used for Maxillofacial Surgeons and Speech and Language Therapist responded based on the methods or ways used to improve quality of life of patients post cleft palate repair. The interviews consisted of structured question guides designed to review the required information.

2.5 Data analysis

Data analysis refers to the procedural organization and manipulation of data to unmask trends in a given set of observations and offer a ground to draw conclusions [6]. The collected data were coded and analyzed according to stated objectives and research questions. The quantitative data was analyzed using Statistics Package for Social Sciences Version 24 (SPSS V. 24) and summarized as frequencies and proportions. Where applicable, appropriate graphs, charts, and tables were used to illustrate patterns and show trends. The qualitative data was then subjected to content analysis with the use of Atlas/Ti and summarized into themes and presented in prose.

III. DATA ANALYSIS AND DISCUSSIONS

3.1 General and Demographic Information

3.1.1 Questionnaire and interview return rate

Questionnaires were distributed to adults (both male and female) with repaired cleft palate in Kenyatta National Hospital, Nairobi Kenya. A total of 24 questionnaires were issued to understand the effect of VPI severity on functional ability and social interaction. A total of 22 fully filled questionnaires were returned indicating a 92% response rate which is appropriate in providing an understanding on research problem. The rate of return is summarized in table 3.1

Table 3.1: Response rate

Gender of Respondents	Frequency	Percentage
Total Questionnaires	24	100%
Returned Questionnaires	22	92%

From Table 3.1, it is evident that there was a smaller sample population from which the researcher could select from giving only a sample size of 24 participants. This is attributed to the sensitive nature of the issue as well as very few individuals with cleft palate seeking healthcare to correct the condition. However regardless of the small sample size, the data obtained was enough to help in making inferences based on the research questions investigated in the study. Two interviews were conducted to help understand the level of accessibility/availability of speech therapy and counselling services for patients with repaired palate.

3.1.2 Demographic characteristics of respondents

In terms of age, nine of the respondents were aged between 26 and 35 years. Out of 22 respondents 12 had tertiary education, 11 of the respondents were single while there was equal number of male and female. The figures below provide a summary of the respondent's demographic characteristics.

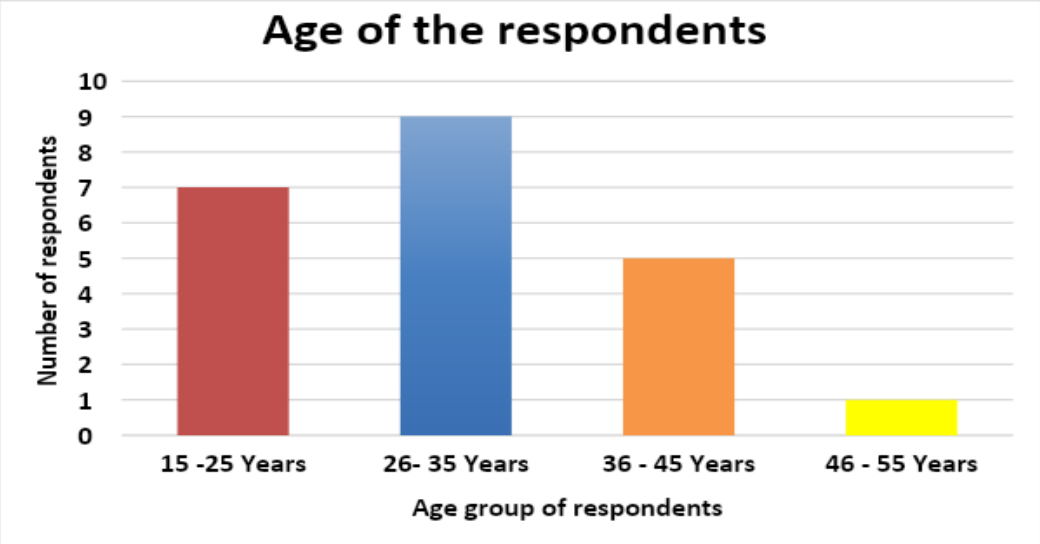


Figure 3.1: Age of the respondents

Out of the 22 respondents included in the study,7 were aged between 15 and 25 years, 9 were aged between 26 and 35 years,5 were aged between 36 and 45 years, while only one respondent was aged between 46 and 55 years. The findings from the study are similar to a previous study by [10] who found that majority of individual who seek cleft palate repair are youths because of difficulty in socializing as well as developing new

relations. [11] also found that most of individual who seek cleft palate repair are below 40 years. Building relationships and communication is a major challenge to majority of cleft palate patients especially in their younger years from adolescent to younger adults.

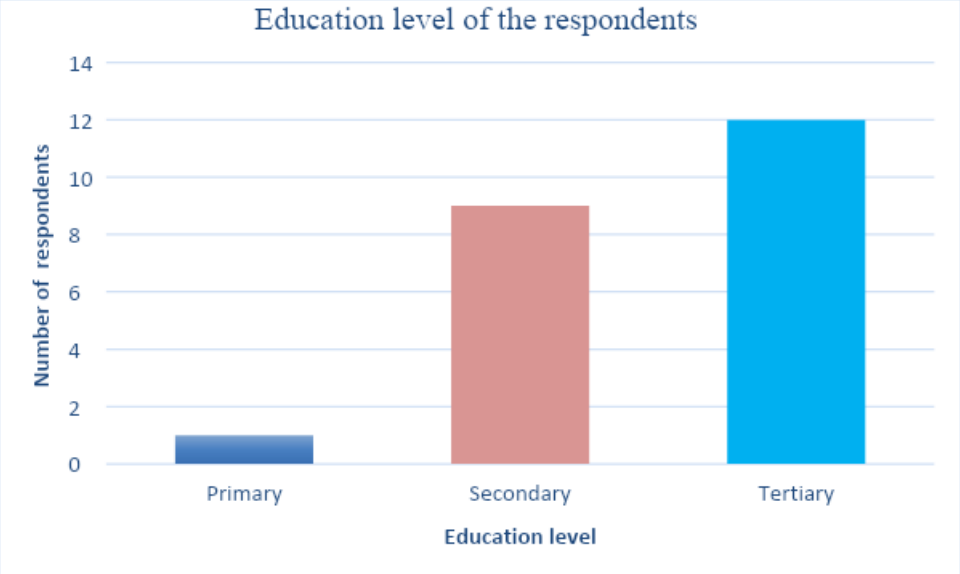


Figure 3.2: Respondent's education level

As indicated in Figure 3.2, 12 had tertiary education level while only one of the respondents had primary level education. The findings show that most of the respondents who had cleft palate repair are post-secondary school patients. This could be attributed to inadequate knowledge and awareness on cleft palate treatment among the general public where only those who have the knowledge can seek cleft palate treatment. The findings support previous results from [8] which highlighted that undertaking the cleft palate repair is mainly determined by individual knowledge of their condition.

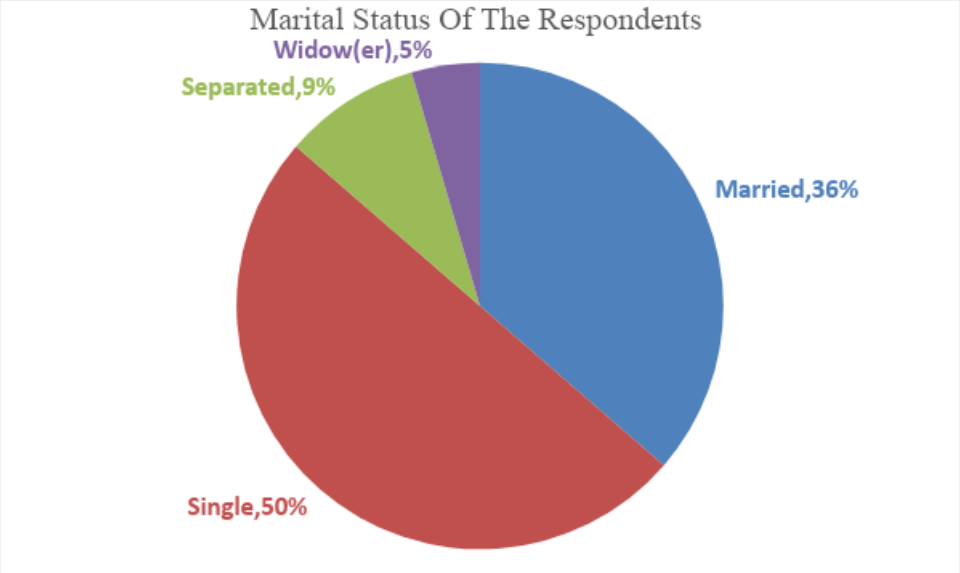


Figure 3.3: Respondents Marital Status

Half of the respondents (50%) were single, 36% were married and 9% of the respondents were separated. The findings show that most of the respondents were single despite the fact that the majority were aged between 26 and 35 years of age. These findings are similar to those of a study by [3], which revealed that most of cleft palate patients are unable to develop relationships hence have lower self-confidence and prefer to stay alone. This has contributed to the fact that majority of them are single.

3.2Effect of VPI on functional ability of patients with repaired palate

The objective sought to investigate the effect of VPI on functional ability of patients where five key aspects were investigated. They include talking, swallowing, speech, perception by others and social impact of the respondents.

3.2.1Talking problems

The study sought to establish talking challenges experienced by respondents. The table 3.2 illustrates the findings.

Table 3.2: Respondent's ability in talking

	Almost n (%)	Sometimes n (%)	Often n (%)	Always n (%)
Air comes out of nose when I talk		4(18.2%)	5(22.7%)	13(59.1%)
I run out of breath when I talk	1(4.5%)	4(18.2%)	4(18.2%)	13(59.1%)
It is hard talking in long sentences	2(9.1%)	4(18.2%)	3(13.6%)	13(59.1%)
My speech is too weak	2(9.1%)	4(18.2%)	6(27.3%)	10 (45.5%)
I have trouble being understood when I'm in a hurry	2(9.1%)	2(9.1%)	9(40.9%)	9 (40.5%)
My speech gets worse toward the end of the day	3(13.6%)	6 (27.3%)	11(50%)	2 (9.1%)
My speech sounds different than other people	1(4.5%)	2 (9.1%)	4(18.2%)	15(68.2%)

Functional ability of the respondents while talking was analyzed, out of the 22 respondents, 13 of them asserted that air comes out of the nose when they talk, 13 of the respondents also run out breath when they talk, 10 of the respondents affirmed that their speech is always weak while 9 often have trouble being understood when in a hurry. Half of the respondents also asserted that often, their speech gets worse toward the end of the day and 15 stated that their speech sounds different than other people.

The results also showed that there was a link between VPI and functional ability in talking. The findings concur with the existing literature which had shown that despite cleft palate repair, the wellbeing of the patients tends to reduce with time (Rhodes, 2009).

3.2.2The association between VPI severity and challenges when talking

The study also sought to establish the association between VPI severity and challenges when talking among the respondents as illustrated in Table 3.3.

Table 3.3: The association between VPI severity and challenges when talking

		VPI severity				
		Mild	**Moderate**	**Severe**	**Chi square**	**P-value**
Air comes out of nose when I talk	Sometimes	2 (50%)	2 (50%)	0		
	Often	1 (25%)	2 (37.5%)	2 (37.5%)	10.202	0.037
	Always	0	0	10(76.9%)		
My speech sounds different than other people	Almost	0	1 (100%)	0		
	Sometimes	2 (100%)	0	0		
	Often	1 (25%)	2 (50%)	1 (25%)	19.385	0.004
	Always	0	4 (26.7%)	11 (73.3%)		

The findings showed that there was a statistically significant association between VPI severity and air coming out of the nose when the respondents talk ($p = 0.037$, $p<0.05$) and assertion that their speech was different from others ($p = 0.004$, $p<0.05$). The findings concur with Biavati (2012) who stressed that structural defects correction through surgery scarcely changes that functioning since articulation problem remains even after surgery.

3.2.3Swallowing problems

The researcher sought to establish swallowing problems from the respondents as illustrated in figure 3.4.

Figure 3.4: Respondents frequency of fluid coming out through the nose while drinking

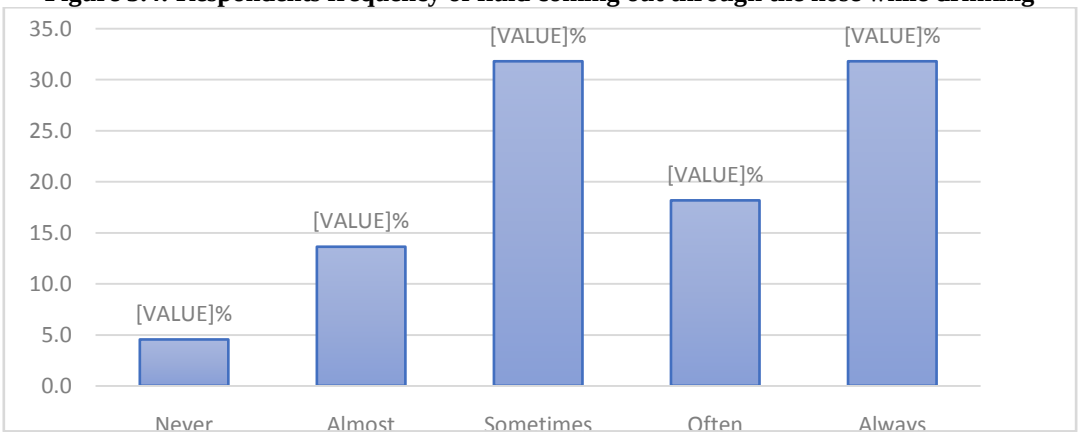


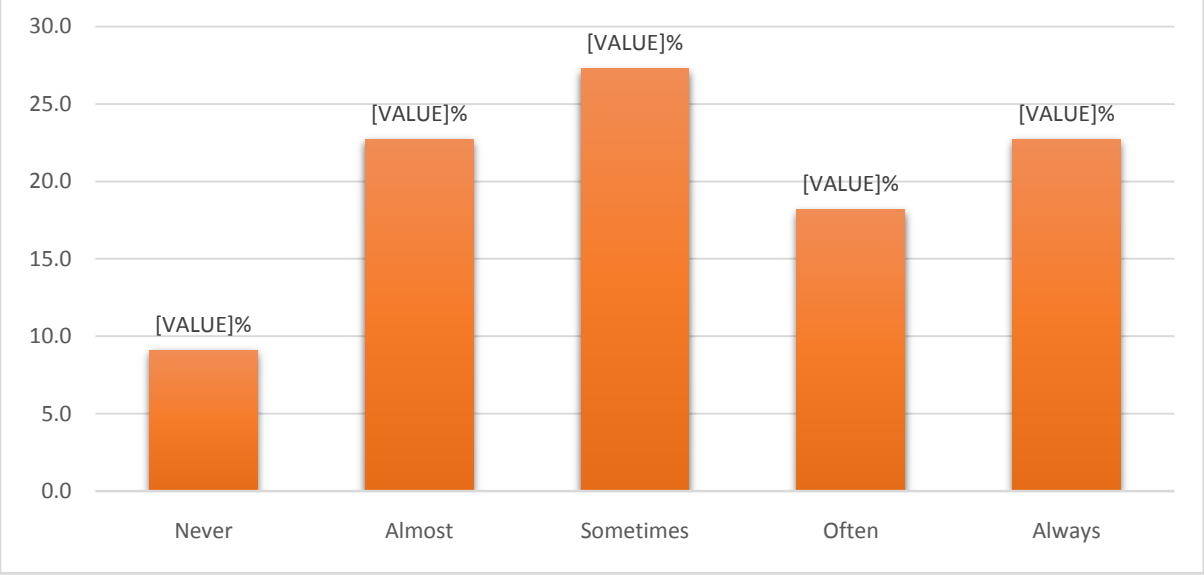
Figure 3.4 illustrates that out of 22 respondents, 7 always had liquids coming out of their noses when they drink while only 1 of the respondents did not have liquids coming out of his nose when drinking despite undergoing cleft palate repair surgery

This shows that cleft palate repair surgery does not always have perfect outcomes among individual with cleft palate. The findings from the study are like those from a study conducted in Nigeria which highlighted that the success of cleft palate repair surgery was approximately 70% according to [1]. Additionally, [15] also stressed that cleft palate surgery is associated with significant complications and recurrence of the previous condition with time. The recurrence of the condition even after surgery present a stronger emphasis on better aspects which help in maintaining improved focus on management of the condition.

3.2.4Feeding Issues

Additionally, the researcher sought to find out from the respondents the frequency of food coming out through the nose while eating. The results are presented in Figure 3.5.

Figure 3.5: Respondents frequency of food coming out through the nose while eating

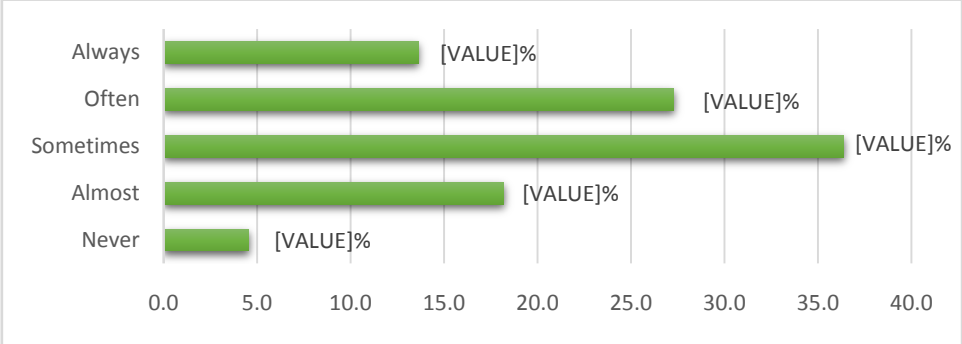


As presented in figure 3.5, six of the respondents affirmed that sometimes food comes out of their nose while eating. The surgery performed is supposed to help in improving this condition. However, even after the cleft palate surgery, a significant number of individuals still face many challenges including food coming out of their noses. This could be attributed to the severity of VPI as well as the duration since the surgery was conducted.

3.2.5Perception by others

The study also sought to investigate the perception people have on persons with VPI after a cleft repair. The results are represented in figure 3.6.

Figure 3.6: Respondents assertion on whether others make fun of them when food or drinks comes out through the nose



In figure 3.6, 36% of the respondents sometimes felt that others make fun of them when food or drink comes out of their nose. The perception that is maintained in the society is based on the level of interaction and individual self-efficacy and confidence in everything they do. Cleft palate patients have lower self-esteem which influences individual perception. This is in agreement with [2] findings on quality of life among cleft palate patients which was ranging from low to moderate and highly influenced by how others perceive them.

3.2.6Association between VPI severity and swallowing problems among respondents

The study, similarly, sought to determine the association between VPI severity and swallowing problems among respondents. The results are presented in table 3.4.

Table 3.4: Association between VPI severity and swallowing challenges among respondents

		VPI severity			Chi-Square	P-value
		Mild	Moderate	Severe		
Liquids comes out of my nose while drinking	Never	0	1(100%)	0	9.641	0.291
		0.0%	100.0%	0.0%		
	Almost	1 (33.3%)	0	2(66.7%)		
	Sometimes	1 (14.3%)	4(57.1%)	2 (28.6%)		
	Often	1 (25%)	1 (25%)	2 (50%)		
	Always	0	1 (14.3%)	6 (85.7%)		
Food comes out of my nose while eating	Never	0	2 (100%)	0	9.302	0.317
	Almost	1(20%)	2(40%)	2(40%)		
	Sometimes	2 (33.3%)	1(16.7%)	3 (50%)		
	Often	0	1 (25%)	3 (75%)		
	Always	0	1 (20%)	4 (80%)		

Table 3.4 presents chi-square test results for association between VPI severity and swallowing challenges among respondents. The result show no statistically significant association between severity of VPI and liquids coming out of the nose while drinking among the respondents at x2 (8) = 9.641, p =0.291, p>0.05. This, therefore, implies that the severity of VPI does not influence the frequency of liquids coming out of the noses of patients who undergone cleft palate repairs. The analysis further showed no statistically significant association between VPI severity and frequency of food coming out through the nose, x2 (8) = 9.302, p =0.317, p>0.05.Thus the severity of VPI does not influence the frequency of food coming out through the nose of patients who underwent cleft palate repair. The results contradict several past studies which found a higher influence of VPI severity in functional ability – swallowing. The difference could be attributed to small sample size included in the study. Moon and Kuehn (2004) explained that the correction of cleft palate condition is

based on the timing when it is recognized, and surgery performed mainly before the school going age to enhance student performance.

3.2.7Speech limitations

Speech limitations experienced by the respondents were also investigated. The results are presented in Table 3.5.

Table 3.5: Respondents speech limitations

	Almost n (%)	Sometimes n (%)	Often n (%)	Always n (%)
My speech is hard for strangers to understand	1 (4.5%)	3(13.6%)	6(27.3%)	12(54.5%)
My speech is hard for friends to understand		6(27.3%)	9(40.9%)	7(31.8%)
My speech is hard for family to understand	4(18.2%)	12(54.5%)	2(9.1%)	4(18.2%)
I have trouble being understood when others can't see my face, for example, in a car		3(13.6%)	11(50%)	8(36.4%)
I have trouble being understood on the phone		2(9.1%)	6(27.3%)	14(63.6%)

As illustrated in table 3.5, out of the 22 respondents 12 mentioned that, the speech is always hard for strangers to understand, 9 asserted that they often find it difficult to express themselves in a way their friends can understand their speech, 12 of the respondents also felt that their speech was hard for their family members to understand. Other half of the respondents also stressed that it was difficult for others to understand them when not having a face to face communication. Based on the findings of the study, cleft palate surgery is therefore associated with major challenges especially in relation to speech. The findings are consistent with Rhodes (2009) who found that cleft palate patients have trouble with their speech and other common manifestation such as hyper nasality, decreased vocal intensity, short phrases and nasal emission even after surgery. [9] study on speech outcomes after cleft palate surgery also showed that 8% of children had low prevalence of hypernasality after cleft palate closure and pharyngeal flap surgery. The speech problems that were identified among the children investigated were associated with retracted oral articulation of alveo-dental pressure plosives. Biavati (2017) also found that, structural defects correction through surgery in the velopharyngeal port scarcely changes the functioning by default, as articulation may still endure after surgery.

3.2.8The association between VPI severity and speech limitations

The researcher further sought to establish the association between severity of VPI and speech limitation among the respondents as shown in Table 3.6.

Table 3.6: The association between VPI severity and speech ability

		VPI severity			Chi-square	P-value
		Mild	Moderate	Severe		
My speech is hard for strangers to understand	Almost	0	1 (100%)	0		
	Sometimes	1 (33.3%)	2 (66.7%)	0	12.31	0.023
	Often	2 (33.3%)	2 (33.3%)	2 (33.3%)		
	Always	0	2 (16.7%)	10 (83.3%)		
I have trouble being understood when others can't see my face.	Sometimes	1 (33.3%)	2 (66.7%)	0		
	Often	2 (18.2%)	4 (36.4%)	5 (45.5%)	7.662	0.042
	Always	0	1 (12.5%)	7 (87.5%)		

The results from table 3.6 show significant association between VPI severity and difficulty for strangers to understand their speech ($p = 0l023$, $p<0.05$) as well as VPI severity and trouble to understand others when they cannot see their face. This means that higher VPI severity is likely to increase the difficulty of being understood when others cannot see their face. These findings are similar to [4] who found that the VPI score was highly associated with improved speech after surgery where it was determined that high scores were associated

improved speech after surgery. Thus, as revealed in this study, mild VPI is less associated with difficulties in speech when talking to strangers as well as having trouble when others cannot see their face.

IV. CONCLUSIONS AND RECOMMENDATIONS

4.1Conclusions

This study established that respondents with VPI after cleft palate repair have challenges in their functionality, especially, speech, swallowing, and how others perceive them regarding their functional abilities. The study also found that most of the persons with VPI after cleft palate repair had challenges of air coming out of the nose and speech difficulties. When compared to others, the respondents experienced significant functional challenges that also included difficulties in swallowing, although these challenges did not have a higher influence on their wellbeing. The speech challenges identified include difficulty for strangers to understand their speech when talking to them without seeing their faces.

This study revealed that functional ability of most adults with repaired cleft palate was affected by VPI. According to the study findings, higher VPI severity is likely to increase difficulty of being understood when others cannot see their face. However, the study found out that, VPI severity does not influence functional ability in swallowing.

4.2 Recommendations

The study recommends the following based on the findings.

i). Training and counseling sessions for patients with cleft palate repair so that they can embrace their condition and focus on improving their personal growth. The training sessions should also focus on self-confidence and avoid being influenced by what others say about their conditions.

ii). Patients with VPI after cleft palate repair should also be encouraged to form relationships that are essential in controlling the high level of solitude life that these patients lead within their social context.

iii). Health education of patients with cleft palate on importance of follow up after repair due to the recurrence of the condition after repair.

iv). Hospitals should consider adopting speech therapy as a significant healthcare delivery section that will emphasize on improving the wellbeing of patients who need speech therapy.

v). Speech therapist should be involved in the management of cleft palate patients before and after repair.

vi). The government should create awareness regarding the need to promote speech therapy courses and medical education to increase the number of available speech therapists.

V. POLICY RECOMMENDATIONS

i. The study findings may be useful to various stakeholders in the Ministry of Health by providing a framework to deal with cleft palate and adopt better treatment strategies for persons who have undergone cleft palate repair.

ii. The study findings will benefit the multidisciplinary team, i.e., maxillofacial surgeons, plastic surgeons, orthodontists, in understanding the quality of life for patients undergoing treatment at the facility, hence creation of better protocols in management of these patients.

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