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Awareness of Vocal Hygiene Among Kattunayakan Tribe

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Abstract

Voice is a crucial communication tool, which is produced by the vibration of vocal folds. Vocal fold scarring can affect voice quality, excessive use of voice can also affect the quality of voice. Vocal hygiene is a daily routine of healthy behaviors to keep your vocal folds in good condition. The study looks at the vocal hygiene awareness among Kattunayakan tribe. To assess the awareness of vocal hygiene, the study used 15 close set of questionnaires. The statistical research shows that the Kattunayakan tribe has relatively little expertise of vocal hygiene.

Introduction

A strong, useful, and creative communication tool is the human voice. Voice is capable of expressing both exquisite emotional delicacy and complex intellectual concepts. The voice is the main medium for influencing one's fellow countrymen and projecting one's own individuality (Sataloff, 2006).

Talking, singing, laughing, sobbing, screaming, shouting, humming, and other vocal expressions are all examples of human voice use. The vocal folds (vocal cords), which are the main sound source for human speech, provide the human voice frequency. Unvoiced consonants, clicks, whistling, and whispering are all made via different methods from the same general area of the body. Vocal folds, which are situated opposite one another in the larynx, vibrate to create the sound of your voice. Between the tip of the tongue and the top of the trachea, which serves as the entrance to the lungs, is where the larynx is situated. Vocal folds are open when you are not speaking, allowing you to breathe. But when it's time to talk, the brain plans a set of actions. Air from the lungs blows past, causing the vocal folds to snap together and vibrate. The mouth, nose, and throat serve as resonating cavities to modulate the sound waves that are created by the vibrations. The size and structure of your vocal folds and resonating cavities impact the quality of your voice, including its pitch, volume, and tone. Because of this, every person's voice sounds different.

Due to the size disparities between males and females in the larynx, adult males and females often have vocal folds of various diameters. Adult male voices often have greater folds and a lower tone. Male vocal folds range in length from 17 to 25 millimeters (measured vertically in the opposite diagram). The female vocal folds have a length of 12.5 to 17.5 mm. Men and women have different-sized vocal folds, which results in their having different-pitch voices. Men's and women's singing voices are divided into categories, and genetic variations also exist within the same sex. Men can sing in the baritone, baritone, tenor, and countertenor ranges, while women can sing in the contralto, alto, mezzo-soprano, and soprano ranges. See voice type for a list of further categories for operatic voices. There are other reasons why male and female voices differ from one another. Men often have a larger vocal tract, which results in a voice that normally has a lower timbre. The vocal folds themselves are largely unimportant in this.

People employ voices in their professional lives. The voices of singers, educators, medical professionals, legal professionals, nurses, salespeople, and public speakers are among those who place heavy demands on them. They are more likely to experience vocal issues as a result. 17.9 million adult Americans report having voice issues, according to estimates. By taking care of your voice, you can prevent some of these problems.

The voice is an ideal communication instrument, an essential element of interpersonal interactions and artistic expression, and it is present in every culture on earth. The goal of World Voice Day, which was first observed in Brazil in 1999, is to educate the public about the value of the voice and to raise awareness of any vocal disorders. It is now observed every year on April 16th.

Regardless of the substance of the words, the voice can transmit a wide range of emotions, including anger, joy, grief, and fear. An individual's accent and cadences can provide us information about their place of origin. In a nutshell, we may argue that the voice is able to communicate our identity, our origin, and our intended destination all at once. Consider the intriguing experiment conducted by the ethologist Konrad Lorenz, who, in the absence of a duck that served as the mother, started talking to a group of ducklings on a regular basis. At the time of birth, the ducklings displayed a sensitization to his voice, indicating a genuine preference for the human voice. When considering human beings, it appears that all children are born with the ability to communicate, most notably through crying, which serves as a major means of alerting caregivers to a child's specific wants and emotions.

Vocal hygiene, contrary to what the majority of people may believe, does not refer to washing your mouth, but rather to carrying out the necessary care for a healthy voice. As a speech-language pathologist, we make it a point to provide any client we work with voice therapy advice for good vocal hygiene habits. Naturally, there are a variety of techniques to maintain good vocal hygiene, and each client will have their own preferences since many clients may already be doing so.

Following These Guidelines Will Help You Maintain Good Oral Hygiene

Avoid using dehydrating substances excessively, such as alcohol and caffeine; daily increase in water consumption in order to lessen coughing and cleaning of the throat; it is safer to either do a silent cough or take sips of water to flush out any mucus or residue (where you push air out), No screaming, don't talk for a long time in a whisper or at a loud voice. Don't talk for long periods of time, ensuring that background noise is minimized whenever someone is singing or speaking (when background noise is present you may tend to want to raise your voice, which will strain your voice), no smoking. When you are sick, avoid attempting to speak despite a voice loss.

Review of Literature

Humans' voice boxes or larynxes are responsible for producing sound. Within the voice box, there are two vocal cords spread out. The vocal cords vibrate when the lungs force air, creating sound. A different style or tone of voice results from having tight, narrow vocal cords as opposed to loose, thick cords.

An individual's voice helps to define who they are. In addition to influencing how others perceive a person's age and gender, studies have revealed that a person's intonation, loudness, and overall vocal qualities can also influence how others interpret their emotional state and personality. According to Scherer, Banse and Wallbott (2001), listeners can determine and infer speakers' emotions, such as anger, grief, fear, and neutrality, from their vocal depictions.

Duffy & Hazlet (2004) investigated the primary prevention of occupational dysphonia among 55 training teachers, who were randomly assigned to three groups, including control, indirect and direct group. The vocal performance of the three groups was measured at two points; first before any teaching or training began, and again after the first teaching practice. Acoustic and self-perceptual measurements were used to assess the multidimensional outcomes. The self-rating scores varied in agreement with the acoustic results. The acoustic results showed deterioration from first to second measure for control group, improvement for direct group and no change for the indirect group. The study indicated that the training had been effective.

Mara, Oliveira & Gisele (2009) investigated on vocal hygiene for voice professionals and came to a conclusion that vocal hygiene should be considered only as a component of broad vocal rehabilitation program, additionally some of findings may be applied to both dysphonic and healthy individual in order to facilitate vocal wellbeing.

Nallamuthu & Mariswamy (2021) analyzed the outcomes of vocal hygiene program in facilitation vocal health in female schoolteachers with voice problems and concluded that through VHP facilitated in improving the teacher's awareness of risk phono-traumatic behaviors and vocal health, its efficiency was limited in producing physiological improvement in teachers.

Boominathan, Rajendran, Nagarajan, Seethupathy, & Gnanasekar (2008) compared vocal abuse and vocal hygiene practices among different level professional voice users in India (a survey) The findings from this study would enable speech and voice pathologists to plan strategically to prevent voice problems reach these voice professionals.

Pomaville & Radford (2020) analyzed the effectiveness of vocal hygiene education for decreasing At-Risk vocal behaviors in vocal performers and concluded that vocal performers who participate in VHE program will demonstrate an increase in their knowledge about voice production and vocal hygiene.

Hosoya, Kobayashi, Senarita, Kuroda, Misawa, Tanaka, Takiguchi, Tashiro, Masuda, Hashimoto, Goto, Minami, Yamamoto, Nagai, Sayama, Wakabayashi, Toshikuni, Ueha, Fujimaki, Takazawa, Sekimoto, Itoh, Nito, Kada & Tsunoda (2018) studied vocal hygiene education program reduces surgical interventions for benign vocal fold lesions :randomized controlled trial and the results clearly indicate that the quality and features of the education program could affect the outcome of the intervention. We found that a reinforced vocal hygiene education program increased the rate of the resolution of benign vocal fold polyps and nodules in a multicenter randomized clinical trial.

Beeman (2017) determined the perceptions of voice teachers regarding students' vocal behaviors during singing and speaking and concluded that the majority of voice teachers participating in the current study believed there to be a relationship between the health of the singing voice and the health of the speaking voice. Furthermore, thorough analysis of participants' descriptive data revealed that voice teachers are purportedly working with injured voices and attempting to include vocal health in their instruction. Although a voice teacher is not obligated to pursue a speech-language pathology degree or voice specialist.

Bolbol & Elankeb (2017) investigated the risk factors of voice disorders and impact of vocal hygiene awareness program among teachers in public schools in Egypt and came to a conclusion that they are highly exposed to the risk of voice-related disorders. Increasing awareness about healthy behavior with the voice in their occupations will help in improving their quality of work and in minimizing any permanent impairments and/or disability

Ghorbani, Hassanvand, Vahab & Hosseinzadeh (2019) Evaluated the Reliability and Validity of Actors' Vocal Hygiene Knowledge Questionnaire and the results of this study indicate that the "Assessment of actors' vocal hygiene knowledge" questionnaire has good validity and reliability for actors.

Lopez, Fuente & Contreras (2019) investigated on the Inadequate vocal hygiene habits associated with the presence of self- reported voice symptoms in telemarketers can concluded that using the voice in noisy environments and talking without taking breaks were both

associated with the presence of specific vocal symptoms. This study provides some evidence about the interaction between these two inadequate vocal hygiene habits that potentiates vocal symptoms.

Rodríguez-Parraa, Jose Casadoc (2011) Compared voice-therapy and vocal-hygiene treatments in dysphonia using a limited multidimensional evaluation protocol and results suggest superiority of a voice-therapy (direct treatment) approach over a vocal-hygiene program (indirect treatment). This advantage is on the majority of the 8 continuous variables analyzed (aerodynamics, acoustic, and self-rating), including qualitative perceptual, laryngoscope and spectrographic voice-dimensions. The stability of changes is extended during a post-treatment follow-up period.

Need for the Study

Evaluating awareness and assessing knowledge on vocal hygiene in **Kattunayakan** tribe helps the tribal to understand the measures for vocal hygiene and vocal health which provides awareness among the tribals regarding certain issues such as dehydration, vocal abuse, smoking, alcohol consumption that can lead to hurdle or complication of voice. Nevertheless, the lack of knowledge is gained by sharing the knowledge and measures to be taken for vocal health and significances of vocal hygiene.

Method

Aim

The current study's objective was to ascertain the level of vocal hygiene awareness in the Kattunayakan tribal group.

The study was carried out in two phases.

PHASE 1: Developing Questionnaire

A set of 15 closed set (yes\no) of questions was prepared on vocal hygiene. The questionnaire was originally written in English and later translated to Malayalam by a Professor teaching Malayalam. The prepared questions were than validated by 10 speech language pathologists who are working in the field for more than 5 years. The corrections and suggestions advised by the speech language pathologists were incorporated and the final questionnaire was ready which is as below.

1. Are you aware of vocal hygiene? (yes\no)
2. Do you shout or yell frequently? (yes\no)
3. Do you clear your throat frequently? (yes\no)
4. Do you sing often? (yes\no)
5. Do you drink minimum 3 liter of water every day? (yes\no)
6. Do you drink alcohol frequently? (yes\no)
7. Do you use tobacco frequently? (yes\no)
8. Do you eat spicy food every day? (yes\no)

9. Do you have any breathing difficulty? (yes/no)
10. Do you think whispering can affect your voice? (yes/no)
11. Do you experience GERD? (yes/no)
12. Do you consume caffeine\carbonated drinks? (yes/no)
13. Do you think sinus can affect your voice? (yes/no)
14. Do you smoke frequently? (yes/no)
15. Do you experience any kind of irritation in your throat while shouting? (yes/no)

PHASE II: Participants

Twenty Kattunayakan tribe in the age range of 20-40 years who are presently staying within the tribal community and irrespective to male and female who are free from any psychological illness, hearing disorders, neurological issues and speech language disorders.

Stimulus Used

The prepared closed set of 15 question was used for the collection of data.

Procedure

The validated list of questions was administered on the selected tribal group. the questions were read to them and as per their response (yes/no) was marked.

Analysis

The response from the tribal community was collected and further a score of '1' for the response 'yes' and '0' for the response 'no'. The accumulated data was further subjected to statistical analysis and the results are discussed below.

Results and Discussion

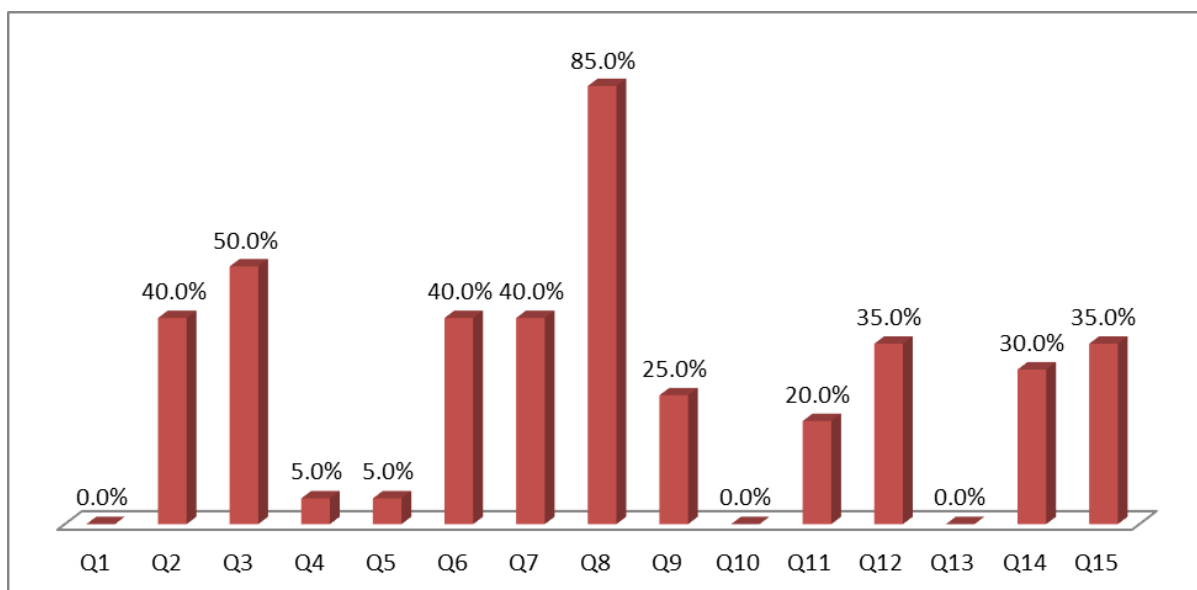
The aim of the study was to analyze the awareness of vocal hygiene among Kattunayakan tribe in the age range of 25 to 40 and the results obtained from the study are discussed below.

Table 1:

shows the respond of the tribe regarding the awareness of vocal hygiene

	response (0)		Response (1)		Testing proportion (awareness comparison against 0)	
	Count	Row N %	Count	Row N %	P value	
	Q1	20	100.0%	0	0.0%	--
Q2	12	60.0%	8	40.0%	0.002	sig
Q3	10	50.0%	10	50.0%	0.000	sig
Q4	19	95.0%	1	5.0%	0.318	NS
Q5	19	95.0%	1	5.0%	0.318	NS
Q6	12	60.0%	8	40.0%	0.002	sig
Q7	12	60.0%	8	40.0%	0.002	sig
Q8	3	15.0%	17	85.0%	0.000	sig
Q9	15	75.0%	5	25.0%	0.018	sig
Q10	20	100.0%	0	0.0%	--	NS
Q11	16	80.0%	4	20.0%	0.038	sig
Q12	13	65.0%	7	35.0%	0.004	sig
Q13	20	100.0%	0	0.0%	--	NS
Q14	14	70.0%	6	30.0%	0.009	sig
Q15	13	65.0%	7	35.0%	0.004	sig

Figure 1:
shows the response of the tribe regarding the awareness of vocal hygiene



From Table 1 and figure 1, it can be seen that Question 1 was about the awareness of vocal hygiene. None of them were aware (0%).

Question 2 was about the vocal abuse. 40% tribals abuse their voice frequently.

Question 3 was about throat clearing. 50% of the people frequently clear their throat.

Question 4 was about how often the tribals sung. 5% participants sing often.

Question 5 was about the hydration. 5% people are aware to keep themselves hydrated.

Question 6 was about the consumption of alcohol. 40% participants consume alcohol frequently.

Question 7 was about tobacco usage. 40% of participants frequently use tobacco.

Question 8 was about intake of spicy food. 85% of participants regularly takes spicy food.

Question 9 was about the breathing difficulty. 25% of participants have breathing difficulty.

Question 10 was about the knowledge of voice problem while whispering. None of the participants were aware that whispering can cause voice problem (0%).

Question 11 was about GERD. 20% of participants has experienced GERD.

Question 12 was about caffeine and carbonated drink consumption. 35% of participants consume caffeine and carbonated drinks.

Question 13 was about knowledge of voice problem due to sinus. None of them were aware that sinus can cause voice problem (0%).

Question 14 was about frequent smoking. 30% of participants were frequent smokers.

Question 15 was about irritation in throat due to shouting. 35% of participants have irritation while shouting.

From the above table Q2, Q3, Q6, Q7, Q8, Q9, Q11, Q12, Q14, and Q15 are significant and Q1, Q4, Q5, Q10, Q13 are non-significant.

Discussion

As can be seen from the results above, the Kattunayakan tribe have very low awareness rates for vocal hygiene. Awareness on the effect of voice due to smoking, drinking alcohol, clearing their throats, dehydration, eating spicy food, whispering, GERD, consuming carbonated beverages, caffeine, and sinuses. They are also least aware of the vocal hygiene requirements for maintaining voice quality. Good vocal hygiene is important because without taking care of your voice, you may be left without it. Vocal fatigue and soreness can have lasting, detrimental effects on your voice box, making it difficult for you to speak properly.

Conclusion

Voice Production is a powerful communication tool in human life. Vocal Hygiene is a daily regimen of good habits to maintain the health of vocal folds and voice. The present study shows that the Kattunayakan tribe has the lowest awareness on proper vocal hygiene. Awareness program and camps are important to let them know how much beneficial voice is in our daily life these programs help to give a brief idea on vocal hygiene tips, and vocal health. knowledge on certain measures for impaired voice can be shared among the tribal people which helps them to gain awareness on the quality of voice.

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Speech Intelligibility in Repaired Cleft Lip and Palate Children

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Introduction

Communication is the exchange and flow of information and ideas from one person to another. Communication takes place when sender transmits or directs a set of symbols to another individual, a receiver. The set of symbols is typically described as a message.(Rice & Johnson, 2008)

Effective communication depends on how intelligible speech of the speaker is, how well the speaker's speech meets the cultural standards and how much the listener perceives or understands of what the speaker conveys.ie, speech should be intelligible.

Speech intelligibility refers to the ability to understand speech. It is the match between the intention of the speaker and the response from the listener. It refers to the ability to use speech for effective communication in everyday situation. During communication, intelligibility is a measure of how comprehensible speech in a given condition. Intelligibility is affected by the quality of speech signal, background noise, reverberation, and properties of communication system.

Speech intelligibility is affected in certain conditions like cleft lip, cleft palate, malocclusion, abnormal alveolar ridge, syndromic conditions etc. Maxillofacial surgeries, dentist design dentures and other prosthetic devices can be used to overcome this problem.

Unintelligible speech is predominantly seen in individuals with cleft lip and palate. Cleft is defined as an abnormal opening or a fissure in an anatomical structure that is normally closed. Cleft lip is the result of the failure of parts of the lip to come together early in the life fetus. Cleft palate occurs when the parts of the roof of the mouth do not fuse normally during fetus development, leaving a larger opening between the oral cavity and the nasal cavity. It may vary in length and width depending on the degree of fusion of the individuals. (Kummer& Ann 2001)

Parthanee and Thai (2013) reported about the types of articulation errors in speech camp and they found that abnormal backing of oral targets was most common speech type and further study, and early prevention of articulation disorders are needed.

Konst (2003) analyzed about the use of perceptual evaluation instrument to assess the effect of infant orthopedics on the speech of toddlers to cleft lip and palate and they found that evaluation of speech by means of the present newly developed perceptual rating instrument showed that 10 groups obtained significantly higher rating for intelligible than-10 groups. The group did not differ regarding any of the other speed aspects.

In the case of Pierre Robin sequence, crowding in utero can cause head to be down and mandible to be retracted and thus restricting oral cavity space. Causes mainly includes interruption of the nutritional or oxygen supply to the embryo. The interruptions may be attributed to extreme malnutrition of the mother, vitamin A, B deficiency, the Rh incompatibility or an atypical or insufficient circulation in the embryo. Defective development at the periphery of adjoining process at this time interferes with fusion and once the scheduled time is elapsed, further growth would widen the gap. (Kummer& Ann 2001)

Kaufman (2004) suggested that vascular supply to the right half of the head is greater than to left and therefore it probably accounts for the more frequent occurrence of cleft of lip and alveolar process on the left side.

Speech intelligibility is severely affected in individuals with cleft lip and palate. Speech intelligibility can be measured by using instrumental and perceptual methods. Rating scales are mainly used to assess the speech intelligibility perceptually. Rating scale is a set of categories designed to elicit information about a quantitative or a qualitative data.

Jessyka and James (2011) reported about closure of palatal fistula, and they found that the occurrence of palatal fistulae in children with a cleft palate deformity after primary palatoplasty remains a relatively common complication. Symptomatic fistulae may cause problems with nasal air escape, nasal regurgitation, decreased speech intelligibility, articulation

errors, and halitosis. A thorough understanding of the multiple reconstructive options, ranging from local flaps to free tissue transfer, is important in obtaining good patient outcomes. In this article, we describe some of the most commonly used methods for palatal closure.

Abologoun and Acta (2013) studied the effectiveness of palatal lift prosthesis in patients with previous operated cleft palate and the results shows that young patients with repaired palatal cleft have significant improvement after application of palatal lift prosthesis.

Mara and Elena (2015) explained about linguistic development in cleft palate patients with and without compensatory articulation disorder and they found that a detailed evaluation of all aspects of cognitive and linguistic organization should be performed in cleft palate patients, especially in patients present with CAD. Moreover,

Karim and Ayub (2014) studied whether early repair of cleft lip helps to reduce the cleft alveolar and palatal gap in unilateral complete cleft lip-palate patients, and they concluded that in unilateral complete cleft lip palate patient, early cleft lip repair results, reduction of gaps of alveolar cleft and that of hard palate remarkably, especially in the patients who came for cleft lip surgery in appropriate time.

Need of the Study

Effective communication depends on the intelligibility of speech that has to be conveyed. Intelligibility is affected in certain conditions like cleft lip, cleft palate, and other syndromes. The dearth of literature on speech intelligibility of repaired cleft lip and palate in children inspired to conduct this study. Study was mainly carried out to check whether there is any discrepancy between SLPs and non SLPs in the perception of speech intelligibility in repaired cleft lip and palate children after surgery.

Aim of the Study

The aim of the study was to rate the speech intelligibility of repaired cleft lip and palate subjects by Speech language pathologists and non speech language pathologists.

Methodology

The aim of the study was to rate the speech intelligibility of repaired cleft lip and palate subjects by SLPs and non SLPs.

Subject Selection

Twenty repaired cleft lip and palate children between the age range of 3-7 years with no history of neurological problem and hearing loss were participated in the present study.

Subject	Age	Age at which surgery was done
Subject 1	5.5	3.5
Subject 2	6	4
Subject 3	7	5
Subject 4	6	4
Subject 5	5	3
Subject 6	5	3
Subject 7	7	5
Subject 8	6	4
Subject 9	6	4
Subject 10	5.3	3.3
Subject 11	5	3
Subject 12	5	3
Subject 13	6	4
Subject 14	7	5
Subject 15	5	3
Subject 16	6	4
Subject 17	6	4
Subject 18	5.5	3.5
Subject 19	5.3	3.5
Subject 20	6	4

Table 1: Showing subject details including age of the subject and age at which surgery was performed

Inclusion Criteria

- 1) Children who have undergone cleft lip and palate surgery before 2 years of the study
- 2) Native Malayalam speakers were taken for the study
- 3) Children between the age of 3 to 7 years were included

Exclusion Criteria

Children with any other medical issues and syndromic conditions were excluded in the study.

Material Used

Speech sample was collected by using different methods.

- 1) Subjects were asked to repeat bisyllabic words. E.g., /pa:pi:/, /ka:ki/ /sa:si/ after clinician.

2) Subjects were asked to repeat words like /papa:/, /puli:/ etc.,and also sentences after clinician.

Subjects were asked to repeat stimulus which is uttered by the clinician and recording was done using voice recorder.

Analysis and Rating

A 5-point intelligibility rating scale developed by National technical institute of deaf (NTID) shown below was used for the study.

The obtained scores were statistically analyzed using Friedman test for significance.

Speech cannot be understood	1
Speech is very difficult to understand only isolated words or phrases are intelligible	2
Speech is very difficult to understand; however, the gist of the content can be understood	3
Speech is intelligible with the exception of a few words or phrases	4
Speech is completely intelligible	5

Results and Discussion

The present study aimed to analyze the speech intelligibility of repaired cleft lip and palate children at an age range of 3-7 years by SLPs and non SLPs and results obtained are discussed below.

Comparison of Average Response among Non-SLPs

Intra-class correlation coefficient

	Intraclass correlation	95% confidence interval		p	
		Lower bound	Upper bound		
Agreement among nonSlp's	.778	.603	.897	P<0.00001	HS

Table 1: Showing interclass correlation coefficient among non-SLPs.p<0.000

Table 1 clearly shows there is high significant difference (p<0.0001) in speech intelligibility rating among non SLPs.

Comparison of Average Response among SLPs

Intraclass correlation coefficient

	Intraclass correlation	95% confidence interval		p	
		Lower bound	Upper bound		
Agreement among Slp's	.931	.872	.969	P<0.00001	HS

Table 2: shows interclass correlation coefficient among SLPs.

Fig 2 and Table 2 clearly show there is high significant difference ($p < 0.0001$) in speech intelligibility rating among SLPs.

Comparison among SLPs and Non-SLPs

Intraclass correlation coefficient

	Intraclass correlation	95% confidence interval		p	
		Lower bound	Upper bound		
Agreement among Slp's and non Slp's	.847	.547	.943	P<0.00001	HS

Table 3: showing comparison among SLPs and non SLPs

From the results shown on the table 3, it can be seen that high significant difference was reported when the rating scores are compared across SLPs and non SLPs.

Discussion

The comparison of average response within SLPs and non SLPs shows that there is high significant difference ($p < 0.0001$) within the group. Overall results shows that there is high significant difference when the rating scores are compared across SLPs and non SLPs.

Present study is supporting Konst&Hanny (2000), study where they have said an intelligibility assessment of toddlers with cleft lip and palate who received and did not receive pre surgical infant orthopedic treatment and results showed that children in the treatment group were rated as exhibiting intelligibility than non treated group.

Summary and Conclusion

Speech intelligibility refers to the ability to use speech for effective communication in everyday situation. During communication, intelligibility is a measure of how comprehensive is

speech in a given condition. Unintelligible speech is predominantly seen in individuals with cleft lip and palate.

Aim of the study is to rate the speech intelligibility of repaired cleft lip and palate children and it was mainly conducted to find whether there is any discrepancy in rating by SLPs and Non-SLPs. Speech samples were obtained by using general conversation, counting and repetition. Recording was done using voice recorder.

Intelligibility rating was obtained speech samples were done by SLPs and Non-SLPs with a 5-point rating scale developed by NTID. And the results shows that there is significant difference between SLPs and Non SLPs in the rating of speech intelligibility. This study was targeted to analyze the difference in scoring by trained and untrained professionals by using perceptual methods.

Overall results shows high significant difference when rating scores were compared across SLPs and non SLPs.

Limitation of the Study

- 1) Sample size was small (only 20 subjects were taken for the study)
- 2) Exploratory study requires more control.

Further Recommendation

- 1) Study could be done with a greater number of subjects.
- 2) Mothers of the subjects could also be included as examiners.
- 3) Children of same age group could be considered.

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Knowledge and Skill Assessment on Use, Care, and Maintenance of BTE Hearing Aid Users

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Abstract

This study aims to evaluate the users of BTE hearing aids knowledge and maintenance and care skills. In order to make an unbiased assess hearing aid user's capacity to operate his or her hearing aids, a developed questionnaire was distributed to 40 hearing aid users. The findings indicate that hearing aid users had a good awareness of the range from using, caring for, and maintaining their hearing aids. 67% of interviewees had awareness about the aforementioned inquiry.

Introduction

Hearing loss is a varying combination line in the auditory, vestibulocochlear nerve, outer, middle, or inner ear. It can be bilateral, unilateral, symmetrical. It can be present at birth or acquired. Based on the cause, type, degree, and configurations of hearing loss vary accordingly either it be a Conductive, sensorineural, or mixed hearing loss.

In 2018 worldwide, Prevalence rate of 7.6%, aged 15 and above have debilitating hearing loss greater than 40 dB was identified. By 2050, it is anticipated that one in four persons would have some degree of hearing loss (WHO, 2021).

Hearing aid picks up the sounds from environment through microphone and digital code is generated by a computer chip. Based on the loss and hearing requirements, the sounds are analyzed. Then the receiver transforms the amplified signals into sound waves which is transmitted into ears.

BTE (Behind the Ear) is a one type of hearing aid, hooks on top of the ear and rests behind the ear. A tube connects the hearing aid to a custom earpiece called an ear mold that fits in your ear canal. BTE is appropriate for people of all ages and those with almost any type of hearing loss. The main advantage of BTE hearing aid is, it has directional microphones which is capable of more amplification than other style.

Hearing aid usage, care and maintenance varies. Hearing aids should be handled carefully, should not drop down should be kept away from heat and moisture, dead batteries should be replaced immediately, should be cleaned as instructed. It is safe not use hairspray or other hair care products while wearing hearing aids, Turn off hearing aids when they are not in use.

Poor handling of any device will make it perform badly and will give it a shorter lifespan. Users must follow the instructions for maintenance for any gadget to ensure proper operation and greater performance with longer working life, just like other equipment. Anyone who wears hearing aids should be aware of how to take care of and maintain them. **Hence the goal of this study is to assess BTE users' knowledge of BTE care and maintenance.**

Review and Literature

May and Battaglia (1989) (Published in 2009) examined the advantages and disadvantages of ITC (In The Canal), ITE (In The Ear) and BTE (Behind The Ear) hearing aids: Diary and interview reports from elderly users, and Findings indicated that for elderly clients there were no large practical advantages for one aid type over another. While ITC and ITE aids were rated more highly than BTE's in background noise, all three aid types were rated as relatively poor in background noise as well as in groups, in the wind, when using the telephone and in the localisation of sound. All three aid types were rated equally and well for performance in one-to-one conversation in quiet, and for listening to television and radio. Hours of use and reasons for non-use are presented, as are clients' reports on cosmetic issues, manipulative ease, and overall satisfaction level with their aids.

Meyer, Khan and Hickson (2016) investigated Evaluation of a Modified User Guide for Hearing Aid Management and Findings indicate that the need to design hearing aid user guides in line with best practice principles of health literacy as a means of facilitating improved hearing aid management in older adults.

Desjardins and Doherty (2009) assessed "Do Experienced Hearing Aid Users Know How to Use Their Hearing Aids Correctly" and Results from this study suggest that experienced hearing aid users range from having an excellent understanding of how to use their hearing aids to a poor understanding. The variability in performance among experienced hearing aid users highlights the importance of directly assessing a client's ability to use his or her hearing aids.

Sorri and Luotonen (British Journal of Audiology, 1984 published online: 2009) interviewed Use and non-use of hearing aids and A hundred and fifty hearing-handicapped were interviewed at home two years after their hearing aids had been fitted and the results of this study the policy of our hearing-aid fitting has been revised.

Walden, Cord, Olson and Surr (2000) analyzed 40 hearing-impaired adults with the GN ReSound digital BZ5 hearing instrument was compared with performance with linear hearing aids with input compression limiting (AGC-I) or two-channel analog wide dynamic range compression (WDRC) instruments and results was performance advantages for the dual microphones over the omnidirectional microphone were observed in the CST results in noise, but participants generally did not perceive these large advantages in everyday listening. The noise reduction circuit provided improved listening comfort but little change in speech understanding.

Verma, Sanju and Awasthi (2017) compared Study on Hearing Aid Benefits of Digital Hearing Aid Use (BTE) from Six Months to Two Years and results that measuring the hearing aid benefit with the self-assessment questionnaires will assist the clinicians in making judgments about the areas in which a patient is experiencing more difficulty in everyday listening environment and in revising the possible technologies.

Manchaiah, Danemark, Jones, and Goodwin (2015) explained the influence of culture on hearing help-seeking and hearing-aid uptake and highlights the importance of psychological models and cross-cultural research in the area of hearing help-seeking and hearing-aid uptake, and consequently some directions for future research are proposed.

Manchaiah and Taylor (2017) investigated the applications of direct-to-consumer hearing devices for adults with hearing loss. This review discusses three categories of direct-to-consumer hearing devices: 1) personal sound amplification products (PSAPs), 2) direct-mail hearing aids, and 3) over-the-counter (OTC) hearing aids and research of direct-to-consumer hearing devices is limited, and current published studies are of weak quality. Much effort is needed to understand the benefits and limitations of such devices on people with hearing loss.

Priyanka, Aravinda, and Chetan (2020) measured Hearing Aid Outcomes of Government Funded Hearing Aids in India and conclude, ADIP scheme hearing aids do satisfy the users in most of the features such as speech understanding, speaking over phone and enhanced hearing.

Adarsh, Kumar, Krishna, and Sanju (2016) studied the Efficacy of Hearing Aid Orientation on New Digital and Analog Hearing Aid Users and conclusion were Present study indicates that the digital hearing aid users were better oriented towards the program, showing greater percentage of people following the prescribed procedure for hearing aid maintenance and proper utilization compared to analog users.

Methodology

Aim

The study aims to assess the Knowledge and Skills on use, care and maintenance of BTE Hearing aid among the users, comparing the developed questionnaire regarding the year of experience, use, care and maintenance of BTE hearing aids.

Phase- 1 Preparation of the Questionnaire

Questionnaire was developed with a set of 16 questions. Questionnaire was validated by 5 Audiologist who are currently in practice. All the 16 questions based on the Awareness on use, care, and maintenance of BTE hearing aid. The collected response was scored in 2-point rating scale, where 0 for NO and 1 for YES. The scored response was further statistically analyzed.

Phase- 2 Participants

40 BTE users, using the hearing aid for more than 1 year participated the present study. People/Individuals using hearing aids like CIC (Completely in the Canal), RIC (Receiver in the Canal), ITE (In the Ear) were excluded from the study.

Stimulus Used

The developed and validated questionnaire and sampling was used.

Procedure

The questionnaire was circulated among the target population. The participants were instructed to read and understand the questions properly and mark for the response.

Statistical Analysis

The collected data (awareness and years of BTE use) were summarized by using the Descriptive Statistics: frequency and percentage. To find the association between awareness and years of BTE use, the Likelihood ratio test was used. The p value < 0.05 was considered as significant.

Data were analyzed by using the SPSS software (SPSS Inc.; Chicago, IL) version 26.0.

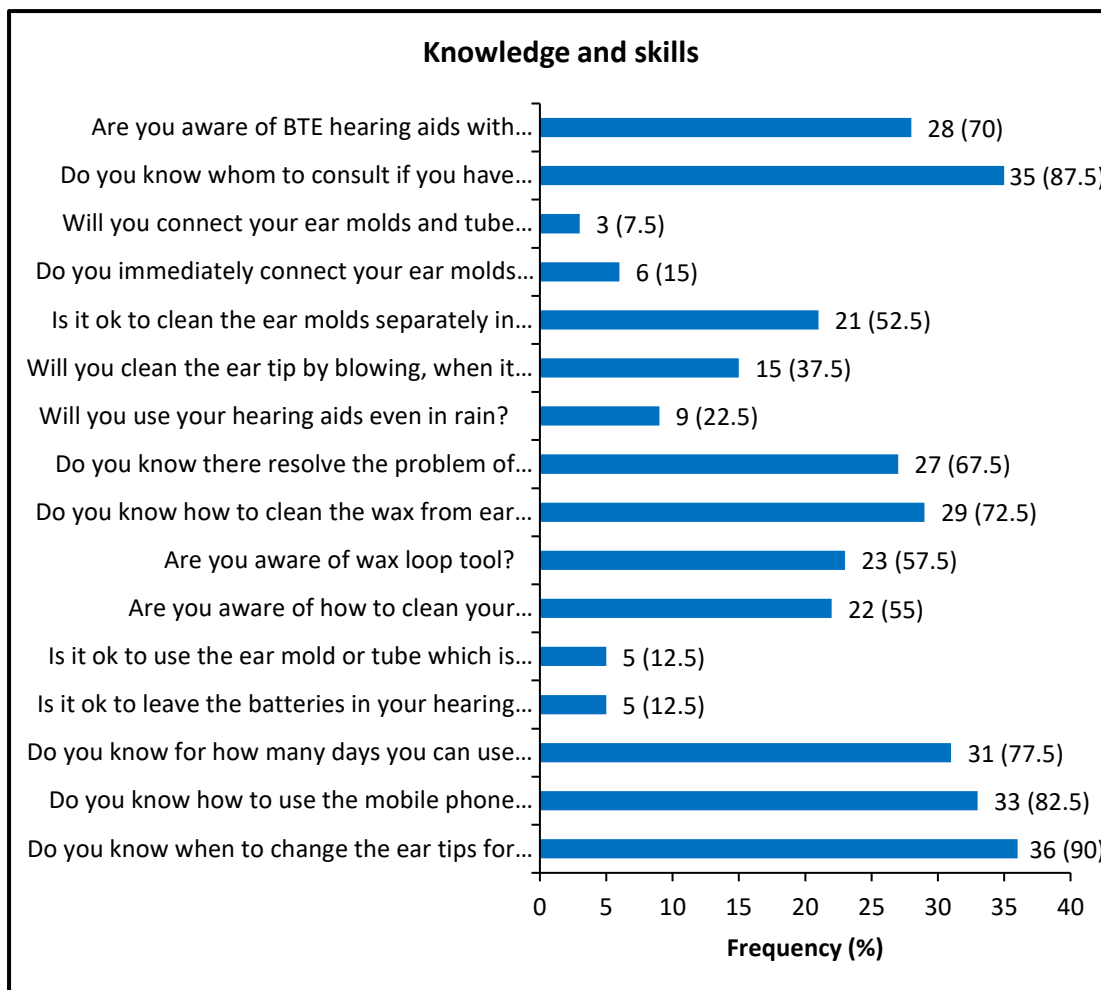
Results and Discussion

	Yes		No	
	Frequency	%	Frequency	%
Do you know when to change the ear tips for your hearing aid?	36	90	4	10
Do you know how to use the mobile phone while using the BTE hearing aid?	33	82.5	7	17.5
Do you know for how many days you can use the battery in your BTE hearing aid?	31	77.5	9	22.5

Is it ok to leave the batteries in your hearing aid when not in use?	5	12.5	35	87.5
Is it ok to use the ear mold or tube which is cracked?	5	12.5	35	87.5
Are you aware of how to clean your microphone from debris?	22	55	18	45
Are you aware of wax loop tool?	23	57.5	17	42.5
Do you know how to clean the wax from ear mold with the wax loop tool?	29	72.5	11	27.5
Do you know there resolve the problem of feedback (Squealing) from your hearing aid?	27	67.5	13	32.5
Will you use your hearing aids even in rain?	9	22.5	31	77.5
Will you clean the ear tip by blowing, when it is still attached to the hearing aid?	15	37.5	25	62.5
Is it ok to clean the ear molds separately in warm and mild soapy water?	21	52.5	19	47.5
Do you immediately connect your ear molds and tube with the hearing aid before it gets dry?	6	15	34	85
Will you connect your ear molds and tube when it is still wet?	3	7.5	37	92.5
Do you know whom to consult if you have problem with your Hearing Aid?	35	87.5	5	12.5
Are you aware of BTE hearing aids with automatic telephone setting?	28	70	12	30

Table 1: Shows the Frequency and Percentage for Questions

Figure 1: Shows the Awareness on Knowledge and Skill of Hearing Aid Usage



From Table 1 and Fig 1, 90% of people are aware of when to change the ear tips in their hearing aids. 82.5% of people know how to use a mobile phone while using a BTE hearing aid.

77.5% of individuals are aware of how many days a hearing aid battery can last.

87.5% of consumers are unaware that they should remove the batteries from their hearing aids while not in use.

87.5% of people are unaware that they should use an ear mould or tube if they crack.

55% of persons know how to clear a microphone of dirt and debris.

57.5% of People are aware of the wax loop.

72.5% of people know how to clean the wax from ear mould with the wax loop tool.

67.5% of people are aware of the solution to the feedback (squealing) issue when using hearing aids.

When it rains, 77.5% of people do not wear hearing aids.

When the ear tip is still attached to the hearing aid, 62.5% of people fail to blow-clean it.

52.5% of the populace It is acceptable to wash the ear moulds in mild soap and water.

85% of people are not aware that the hearing aid should be connected immediately to the ear moulds and tube before they dry out.

The fact that can connect the ear moulds and tube while they are still wet is unknown to 92.5% of individuals.

87.5% of consumers are aware of who to contact if they have a hearing aid issue.

70% of people are aware of BTE hearing aids with automatic telephone settings.

Table 2: Shows comparative ratio score and P value across the year of usage.

		How long using BTE (Years)								Likelihood ratio	p value
		0 to 3		4 to 6		7 to 10		> 11			
		n	%	n	%	n	%	n	%		
Do you know when to change the ear tips for your hearing aid?	Yes	10	76.9	7	100	13	92.9	6	100	4.756	0.191
	No	3	23.1	0	0	1	7.1	0	0		
Do you know how to use the mobile phone while using the BTE hearing aid?	Yes	9	69.2	7	100	11	78.6	6	100	6.502	0.090
	No	4	30.8	0	0	3	21.4	0	0		
Do you know for how many days you can use the battery in your BTE	Yes	9	69.2	5	71.4	12	85.7	5	83.3	1.339	0.720
	No	4	30.8	2	28.6	2	14.3	1	16.7		

hearing aid?											
Is it ok to leave the batteries in your hearing aid when not in use?	Yes	0	0	0	0	3	21.4	2	33.3	7.955	0.047*
	No	13	100	7	100	11	78.6	4	66.7		
Is it ok to use the ear mold or tube which is cracked?	Yes	0	0	0	0	3	21.4	2	33.3	7.955	0.047*
	No	13	100	7	100	11	78.6	4	66.7		
Are you aware of how to clean your microphone from debris?	Yes	8	61.5	2	28.6	8	57.1	4	66.7	2.592	0.459
	No	5	38.5	5	71.4	6	42.9	2	33.3		
Are you aware of wax loop tool?	Yes	9	69.2	4	57.1	6	42.9	4	66.7	2.180	0.536
	No	4	30.8	3	42.9	8	57.1	2	33.3		
Do you know how to clean the wax from ear mold with the wax loop tool?	Yes	9	69.2	4	57.1	12	85.7	4	66.7	2.323	0.508
	No	4	30.8	3	42.9	2	14.3	2	33.3		
Do you know there resolve the problem of feedback (whistling) from your hearing aid?	Yes	9	69.2	5	71.4	10	71.4	3	50.0	0.953	0.813
	No	4	30.8	2	28.6	4	28.6	3	50.0		
Will you use your hearing aids even in rain?	Yes	1	7.7	2	28.6	4	28.6	2	33.3	2.837	0.417
	No	12	92.3	5	71.4	10	71.4	4	66.7		
Will you clean the ear tip by blowing, when it is still attached to the hearing aid?	Yes	3	23.1	2	28.6	6	42.9	4	66.7	3.744	0.290
	No	10	76.9	5	71.4	8	57.1	2	33.3		
Is it ok to clean	Yes	7	53.8	5	71.4	5	35.7	4	66.7	3.144	0.370

the ear molds separately in warm and mild soapy water?	No	6	46.2	2	28.6	9	64.3	2	33.3		
Do you immediately connect your ear molds and tube with the hearing aid before it gets dry?	Yes	0	0	2	28.6	3	21.4	1	16.7	5.486	0.139
	No	13	100	5	71.4	11	78.6	5	83.3		
Will you connect your ear molds and tube when it is still wet?	Yes	0	0	2	28.6	1	7.1	0	0	5.730	0.126
	No	13	100	5	71.4	13	92.9	6	100		
Do you know whom to consult if you have problem with your Hearing Aid?	Yes	13	100	4	57.1	13	92.9	5	83.3	7.969	0.047*
	No	0	0	3	42.9	1	7.1	1	16.7		
Are you aware of BTE hearing aids with automatic telephone setting?	Yes	10	76.9	2	28.6	12	85.7	4	66.7	7.327	0.062
	No	3	23.1	5	71.4	2	14.3	2	33.3		

(* Significant)

Table 2 shows comparison the year of hearing aid usage with the knowledge, Likelihood ratio scale was used. Significant difference was seen for questions like Is it OK to leave the batteries in your hearing aid when not in use, Is it OK to use the ear mold or tube which is cracked? And do you know whom to consult if you have problem with your Hearing Aid and other questionnaire no significant scores.

Discussion

This study aims to investigate the Knowledge and Skills on use, care, and maintenance of BTE Hearing aid among the users. A questionnaire was developed on basis of objectives of the study. All the users were experienced from 1 to more than 11 years with BTE hearing aid.

32.5% of participants were used 1- 3 years of BTE hearing aid.

17.5% of participants used BTE for 4 to 6 years.

35% of participants were using BTE for 7 to 10 years.

15% of participants were using BTE for more than 11 years.

The results revealed that the users were aware of use, care, and maintenance of BTE hearing aids. The study concluded that experienced BTE hearing aid users range from having an excellent understanding of how to use, care and maintain their hearing aids. On the above investigation 67% of participants were knowledgeable.

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Assistive Technology for Hearing Impaired Population: Investigating the Knowledge of Special Educators

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Abstract

The present study investigates the knowledge on Assistive Listening Device among Special Education teachers, who work specially with hearing impaired population. A total of 35 special educators participated. A questionnaire was developed and distributed. Findings indicated that special educators have a working knowledge of assistive listening devices. No discernible difference was seen when comparing the findings between the year of work exposure and the knowledge on Assistive listening device. The study concludes that special education teachers who work with hearing impaired groups are knowledgeable about assistive listening devices, but they are less accurate in domains and tactile aids.

Introduction

The term "hard of hearing" describes hearing loss that can be mild to severe. They can communicate through verbally and can benefit from cochlear implants, hearing aids, and other assistive technology. Experiencing profound hearing loss, often use sign language for communication. More than 5% of people worldwide require rehabilitation for their "disabling" hearing loss (432 million adults and 34 million children). Over 700 million people, or one in ten people, are predicted to have a hearing loss that is incapacitating by the year 2050.

Assistive device or assistive technology helps a person with hearing loss, voice, speech, or language disorder to communicate. With this technology, a person who has trouble in communicating can hear and understand conversations better or communicate their ideas more easily. The advancement of these technologies makes more accessible, allowing people to communicate more meaningfully and participate more fully in communication on their daily lives.

Assistive Listening Devices are various types of amplification devices designed to improve communication for people who are deaf or hard of hearing and to ensure optimal communication when individual hearing instruments are insufficient. In comparison to analogue ALD systems, digital wireless technology for hearing instruments promotes new ALDs and improvements to existing devices.

Basically, ALDs separate the sounds, particularly speech, that a person wants to hear from background noise and improves the 'speech to noise ratio (SNR)' rather than the 'signal to noise ratio'. So, the primary purpose of ALDs is to accomplish better SNR in a variety of situations for people with hard of hearing. ALDs improve speech to noise ratio by reducing the triangle of problems like noise, distance, and reverberation. ALD's will minimize the background noise and the negative influences due to distance from sound source to the person with hard of hearing.

ALDs for large settings include classrooms, theaters, various communication halls, religious sites, and airports. Some ALDs are also designed for compact setups. Frequency-modulated (FM), infrared, and hearing loop systems are examples of ALD systems covering large areas. Other types are designed for individual use or personal interaction in smaller areas. One can use these ALDs with or without cochlear implants or hearing aids.

The atmosphere for communication access and the hearing loss determine which ALD can be used. Audio induction loops, FM systems, infrared systems, personal amplified systems, and Bluetooth systems are the five main categories of assistive listening equipment.

To educate children with exceptional needs, special educators receive specialised training. Communication between special educators and children who have hearing impairments is crucial for their educational and daily progress. Therefore, special educators who work with hearing-impaired individuals should be well-versed in the tools and technologies that help them get beyond obstacles to greater communication. This study examines the level of familiarity with assistive listening devices among special educators who now only work with the deaf population.

Review of Literature

Sulaimani & Bagadood (2022) examined the Special Education Teachers 'Perceptions of Assistive Technology (AT) for students with Intellectual Disability (ID) in Saudi Arabia. The findings reveal that the teachers interviewed incorporate AT into the academic setting, and agree that such technology can foster student learning, assignment completion, and engagement.

Alharbi (2018) investigated the knowledge and use of assistive technology by elementary special education teachers in inclusive classrooms in Saudi Arabia. Results indicate that there needs to be increase knowledge and use of assistive technology for elementary special education teachers in order to help students with disabilities accessing to learning materials and general education curriculums in inclusive setting.

Hartley, Rochtchina, Newall, Golding & Mitchell (2010) determined the prevalence, usage, and factors associated with the use of hearing aids and ALDs in an older representative Australian population. Results indicated hearing aid ownership and ALD usage remains low in

the older population. Given the significant proportion of older people who self-report and have a measured hearing loss, it is possible that more could be helped through the increased use of hearing aid and/or ALD technology. Greater efforts are needed to promote the benefits of these technologies and to support their use among older people with hearing loss.

Sydeski (2013) investigated high school special education teachers' knowledge of assistive technology (AT) for students with reading difficulties in Southwestern Pennsylvania. Results of the study suggest that professional development is needed for advancing teacher knowledge of AT and assisting students with reading difficulties to meet the requirements of federal and state laws.

Alanazi (2019) explored teachers' attitudes toward using assistive technology (AT) for students with autism spectrum disorder (ASD) in classrooms. Results indicated that trained teachers report a greater use of AT in classrooms for students with ASD. Compared to pre-school teachers, middle school teachers report a greater use of AT. Teachers who have more years of teaching experience also report a greater use of AT in classrooms for students with ASD.

Flanagan, Bouck & Richardson (2013) examined middle school special education teachers' perceptions of assistive technology during literacy instruction with students with high incidence disabilities. Results suggested teachers perceived assistive technology to be an effective tool for literacy but use it minimally. When assistive technology was used, teachers indicated it was an effective literacy support. Teachers also reported barriers to using assistive technology in literacy including cost, usability, and lack of training/experience. However, factors such as previous successful experiences with assistive technology and assistive technology supporting students' learning encouraged assistive technology use. The consistency of teachers' reports of needing more experience and knowledge in assistive technology to fully use it suggests implications for preservice preparation such as providing additional experiences and information on assistive technology.

Zanin & Rance (2016) assessed the benefit of assistive listening devices (ALDs) for students with hearing impairment in mainstream schools. Results show that performance in each ALD configuration was higher than for HAs/CIs alone ($p < 0.001$) and it shows that significant improvement in listening/communication when using the remote microphone in conjunction with HAs/CIs ($p < 0.05$). There was no difference between the sound field system and the baseline measurement ($p > 0.05$).

Hornickel, Zecker, Bradlow & Kraus (2012) Assistive listening devices drive neuroplasticity in children with dyslexia and the result shows that Assistive listening devices can improve the neural representation of speech and impact reading-related skills by enhancing acoustic clarity and attention, reducing variability in auditory processing.

Methodology

Aim

The present study aims to examine the knowledge on Assistive Listening Devices among the trained special educators who work with the hearing-impaired sectors.

Objectives

- To examine the knowledge of ALD among special educators.
- To compare the year of experience with the knowledge on ALD

The present study was done in **two phases**.

Phase – 1: Preparation of Questionnaire

A questionnaire with two sections of total 20 questions was developed. The validation process on questionnaire was completed by 3 speech and language professionals and to 3 Special educators who are currently in practice.

On top of questionnaire general information on their demographics, year of experience were mentioned. On 20 questions, first 10 questions in Section- A is multiple choice pattern where 4 choices were given, one among the choice will be the answer for target question. Other 10 questions on Section – B is Yes/No pattern. All 20 questions focus the knowledge on technical part of ALD, Its types and its uses mainly with the hearing- impaired population.

Phase- 2: Participants with Inclusive and Exclusive Criteria

35 participants in both female and male with the experience of 2- 29 years were participated in this study. All the participants were certified special educators, and some are specially educated to deal with hearing impaired population. All participants were currently working under hearing impaired sectors in special schools at Chennai. The study excluded retired special educators who are not currently working, untrained or uncertified special educators, and special educators who work in the fields of other disabilities.

Significance of the Study

Special educators who work with hearing impaired children are in a need to be aware of their barriers and to be knowledgeable on the technologies which will help them to overcome the difficulties. So, this study highlights the knowledge on ALD's among special educators who specially work with Hearing Impaired population and be a base for future development to educate the knowledge on ALD's

Procedure

The printed questionnaire was distributed to target participants and explained the need of study to overcome the error and to get an appropriate response for the questions assessed.

Statistical Analysis

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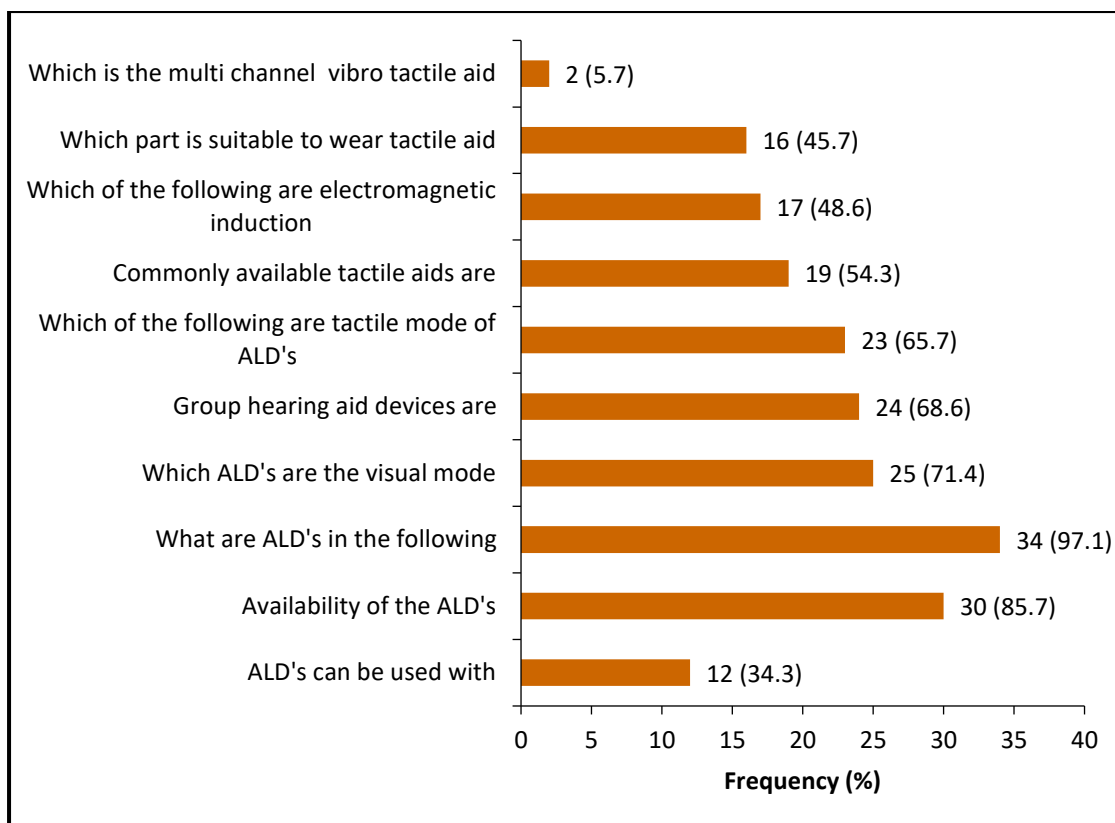
The collected data were summarized by using the Descriptive Statistics: frequency and percentage. To find the association between knowledge and years of experience, the Fisher's exact or Chi square test was used. The p value < 0.05 was considered as significant. Data were analyzed by using the SPSS software (SPSS Inc.; Chicago, IL) version 26.0.

Results and Discussion

Table 1: Frequency and Percentage for Multiple choice questions.

(n= 35)	Correct Response		Incorrect Response	
	Frequency	%	Frequency	%
ALD's can be used with	12	34.3	23	65.7
Availability of the ALD's	30	85.7	5	14.3
What are ALD's in the following	34	97.1	1	2.9
Which ALD's are the visual mode	25	71.4	10	28.6
Group hearing aid devices are	24	68.6	11	31.4
Which of the following are tactile mode of ALD's	23	65.7	12	34.3
Commonly available tactile aids are	19	54.3	16	45.7
Which of the following are electromagnetic induction	17	48.6	18	51.4
Which part is suitable to wear tactile aid	16	45.7	19	54.3
Which is the multi-channel vibro tactile aid	2	5.7	33	94.3

Figure: 1 Knowledge for Multiple choice question



Knowledge on Multiple Choice Question

On the following multiple choices,

65.7 % participants unsure of who will utilize ALD.

85.7% of participants were accurate about the availability of the ALD.

97.1% were aware on types of ALD's.

71.4% were accurate which of the following will come under visual mode.

68.6% of participants were accurate about which all will come under group hearing aid devices.

65.7% of participants were aware of which is tactile mode of ALD on the following choices.

54.3% of participants were aware of commonly available tactile aids.

51.4% were accurate about electromagnetic induction.

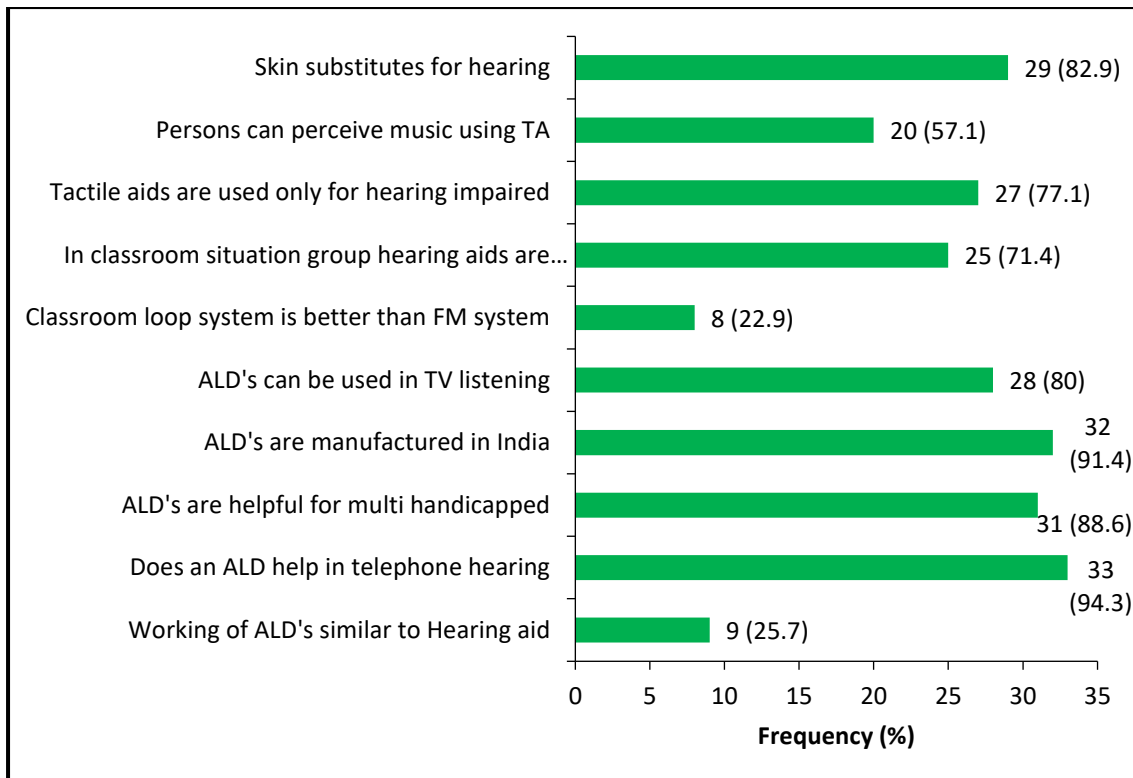
54.3% lacked knowledge about the appropriate skin area for wearing tactile aids.

94.4 % were not aware of multichannel vibro tactile aid.

Table 2: Frequency and Percentage for Yes / No questions.

(n=35)	Yes		No	
	Frequency	%	Frequency	%
Working of ALD's similar to Hearing aid	9	25.7	26	74.3
Does an ALD help in telephone hearing	33	94.3	2	5.7
ALD's are helpful for multi handicapped	31	88.6	4	11.4
ALD's are manufactured in India	32	91.4	3	8.6
ALD's can be used in TV listening	28	80	7	20
Classroom loop system is better than FM system	8	22.9	27	77.1
In classroom situation group hearing aids are better than body level hearing aid	25	71.4	10	28.6
Tactile aids are used only for hearing impaired	27	77.1	8	22.9
Persons can perceive music using TA	20	57.1	15	42.9
Skin substitutes for hearing	29	82.9	6	17.1

Figure: 2 Knowledge for Yes/ no questions



Knowledge on Yes/No Questions

74.3% of participants were not aware that ALD works different when compared to hearing aid.

94.3% were accurate that ALD helps in telephone hearing.

88.6% were aware that multiple handicapped can use ALD's.

91.4% were sure that ALD's are manufactured in India.

80% were accurate that ALD's can be used for listening television.

77.1% were confused which system is better either classroom system or FM system.

71.4% were aware that group hearing aids are better in class room setup when compared to body level hearing aids.

77.1% were not aware of which population can use tactile aids of ALD's.

57.1% were aware that music can be perceived using tactile aids.

82.9% were sure that skin substitutes for hearing.

Table 3: Correlation between year of experience and knowledge on ALD for Multiple choice questions.

(n=35)		Experience				Fisher's exact / Chi square test#	p value
		< 10		≥ 10			
		n	%	n	%		
ALD's can be used with	Yes	5	38.5	7	31.8	0.263	0.726
	No	8	61.5	15	68.2		
Availability of the ALD's	Yes	9	69.2	21	95.5	0.049	0.052
	No	4	30.8	1	4.5		
What are ALD's in the following	Yes	13	100.0	21	95.5	0.629	1.000
	No	0	0.0	1	4.5		
Which ALD's are the visual mode	Yes	11	84.6	14	63.6	0.136	0.259
	No	2	15.4	8	36.4		
Group hearing aid devices are	Yes	8	61.5	16	72.7	0.230	0.708
	No	5	38.5	6	27.3		
Which of the following are tactile mode of ALD's	Yes	8	61.5	15	68.2	0.263	0.726
	No	5	38.5	7	31.8		
Commonly available tactile aids are	Yes	6	46.2	13	59.1	0.551#	0.458
	No	7	53.8	9	40.9		
Which of the following are electromagnetic induction	Yes	6	46.2	11	50.0	0.048#	0.826
	No	7	53.8	11	50.0		
Which part is suitable to wear tactile aid	Yes	5	38.5	11	50.0	0.438#	0.508
	No	8	61.5	11	50.0		
Which is the multi-channel vibro tactile aid	Yes	0	0.0	2	9.1	0.388	0.519
	No	13	100.0	20	90.9		

Figure: 3 Knowledge (Multiple choice) according to years of experience

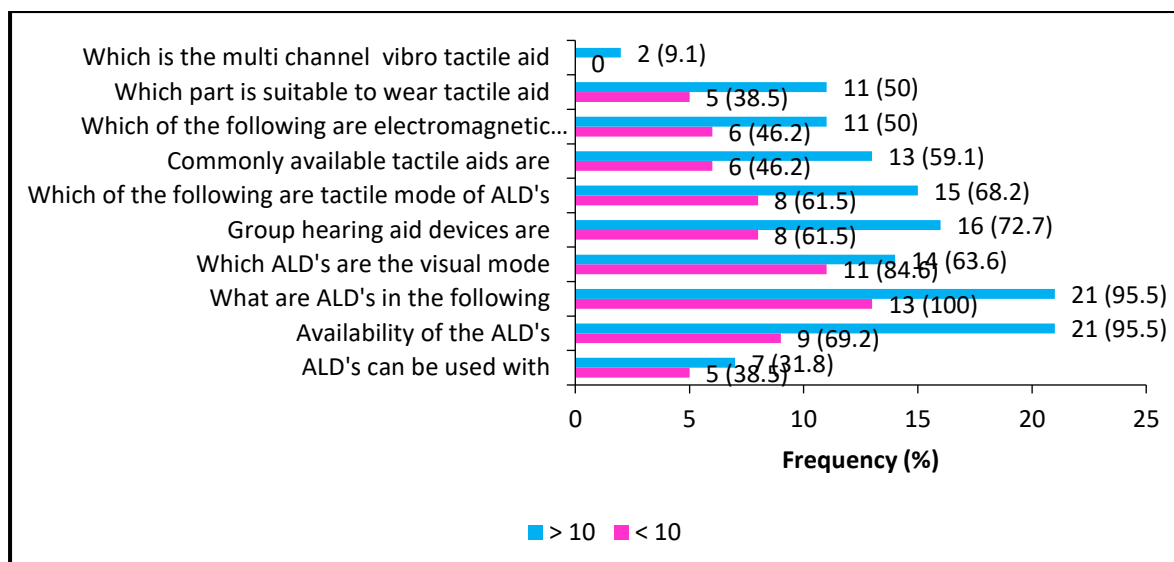
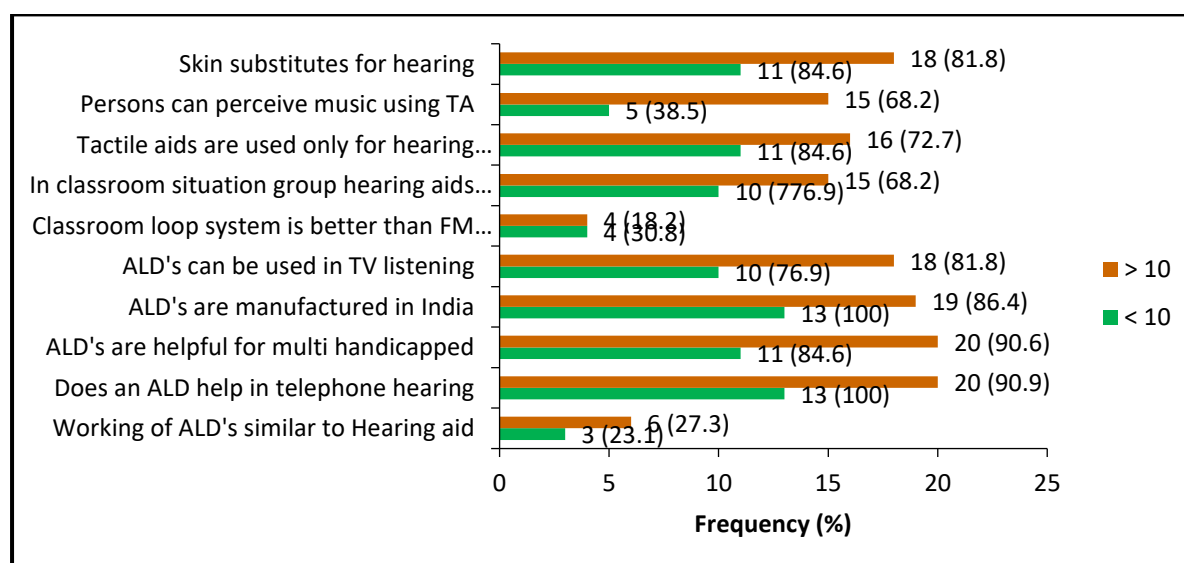


Table 4: Correlation between year of experience and knowledge on ALD for Yes/ No questions.

(n=35)		Experience				Fisher's exact / Chi square test#	p value
		< 10		≥ 10			
		n	%	n	%		
Working of ALD's similar to Hearing aid	Yes	3	23.1	6	27.3	0.302	1.000
	No	10	76.9	16	72.7		
Does an ALD help in telephone hearing	Yes	13	100.0	20	90.9	0.388	0.519
	No	0	0.0	2	9.1		
ALD's are helpful for multi handicapped	Yes	11	84.6	20	90.9	0.344	0.618
	No	2	15.4	2	9.1		
ALD's are manufactured in India	Yes	13	100.0	19	86.4	0.236	0.279
	No	0	0.0	3	13.6		
ALD's can be used in TV listening	Yes	10	76.9	18	81.8	0.311	1.000
	No	3	23.1	4	18.2		
Classroom loop system is better than FM system	Yes	4	30.8	4	18.2	0.222	0.433
	No	9	69.2	18	81.8		
In classroom situation group hearing aids are better than body level hearing aid	Yes	10	76.9	15	68.2	0.266	0.709
	No	3	23.1	7	31.8		
	Yes	11	84.6	16	72.7	0.247	0.680

Tactile aids are used only for hearing impaired	No	2	15.4	6	27.3		
Persons can perceive music using TA	Yes	5	38.5	15	68.2	2.947#	0.086
	No	8	61.5	7	31.8		
Skin substitutes for hearing	Yes	11	84.6	18	81.8	0.352	1.000
	No	2	15.4	4	18.2		

Figure:4 Knowledge (Yes / No) according to years of experience



Correlating the Overall Knowledge and Year of Work Experience:

The second phase, two work experience groups (i.e., <10 years of work exposure and > 10 years of work exposure).

13 (37.1%) participants were less than 10 years of experience and the other 22(62.9%) has more than 10 years of experience. Fisher's exact / Chi square test# is used to find the significance between the year of work exposure and the overall knowledge on questionnaire. By correlating two domains the result shows that the year of work exposure has no significance difference with the knowledge on ALD's.

Discussion

The purpose of the study was to find out how much special education teachers who work full-time with people who have hearing loss know about assistive listening devices. Findings indicate that 74% of special educators who took part in this study are knowledgeable with ALD technology. However, they were not precise when answering some questions, such as which population can use ALDs, which area of the body is suitable for wearing a tactile aid,

which are multi-channel vibro tactile aids, working procedure of ALDs, and which system is superior when comparing classroom loop systems and FM systems. In the second phase, knowledge of ALD was compared with two work experience groups (<10 years of work exposure and > 10 years of work exposure). The results show that there was no significant difference between the two groups.

Conclusion

According to the study findings, it is concluded that special education teachers who work with hearing impaired groups are knowledgeable about assistive listening devices, but they are less accurate in domains such as ALDs functions, other than hearing impaired people who are all eligible to use ALDs. They struggle when the question involves tactile aids. They are less aware of tactile aids because the percentage of the population who use tactile devices on a daily basis is lower, when compared to other devices.

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Comparative Mythopoetic Strategies in *The Cilappatikāram*

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Abstract

Tamil Classical Literature employs myriad linguistic strategies in conjunction with discursive *sangam* poetic conventions for the creation of the mythical narratives as seen in the circa 5 C.E. *kappiyam* (epic) *The Cilappatikāram*. This paper analyses the usage of the comparative mythical superstructure invoked at various moments in the Tamil epic to establish the text's mythical underpinnings in relation to larger world of mythological discourse inhabited by myths of battles fought "at the time of churning/The ocean, and in seablown Laṅkā, and the one/In which the seablue god drove the chariot" (Aṭikaḷ 236), the last two being references to the major Sanskrit epics *The Rāmāyaṇa* and *The Mahābhārata*. The comparative use of mythical references as a textual strategy also sheds light on the ideological frameworks within which the text was composed. The mythopoetic impulse in the Tamil epic is ideologically pluralistic in nature, staying in tune with the thematic concerns of the epic which draws from Jaina, Buddhist as well as Hindu traditions. This is significant as the socio-political tensions of the battle between the southern Chera kingdom ruler King *Ceṅkuṭṭuvan* who leads an army to subdue the hubristic northern Kings in the *puram*-domain in Book III, are also resolved within the larger mythical framework of the *Pattinī* goddess. Thus, *The Cilappatikāram's* usage of comparative mythical superstructure, especially in Book III acquires significant ideological underpinnings that situate the worldview embodied by the significant Tamil epic.

Keywords: *Cilappatikāram*, myth, linguistic strategies, comparative, epic

The Tamil classical era composition *The Cilappatikāram* or *The Tale of an Anklet* is notable for its indigenous poetics. Iḷaṅkō Aṭikaḷ, the composer of the epic tale, has been widely recognized by critics as a prince who renounced his royal status to become a Jain ascetic, and drew together influences from Jainism, Buddhism, Hinduism as well as other minor folk traditions to compose the tale of Kōvalaṅ, Kaṇṇaki, and Mātavi. A tale that narrates the apotheosis of a woman from the merchant class into a mythical goddess, the Tamil classic has come to be associated with and to establish the antiquity of Tamil culture and language. The circa 5 C.E. text employs myriad linguistic strategies in conjunction with discursive *sangam* poetic conventions for the creation of the myth of the goddess *Pattinī*. The epic consists of three books divided in thirty cantos and is notable for the non-androcentric protagonist Kaṇṇaki as well as for its use of non-Sanskritic poetic conventions which combine elements of poetry, music and dance with the prose narrative. This paper analyses the usage

of the comparative mythical superstructure invoked at various moments in the Tamil epic to establish the text's mythical underpinnings *in relation* to the larger world of mythological discourse inhabited by myths of battles fought “at the time of churning/The ocean, and in seablown Laṅkā, and the one/In which the sea blue god drove the chariot” (Aṭikaḷ 236), the last two being references to the major Sanskrit epics *The Rāmāyaṇa* and *The Mahābhārata*. As this analysis will highlight, the comparative mythopoetic strategies inherent in *The Cilappatikāram*, especially in the Book III acquire ideological significance through the relational juxtaposition of myths from the Tamil and Sanskrit context in the Tamil epic, and also provides insight into the worldview that the epic germinates.

Before embarking on the reading of comparative mythopoetic strategies in *The Cilappatikāram*, it is useful to review the Tamil epic's narrative strategies and unique poetics which are influenced by the *Sangam* literary tradition. The grammatical text *Tholakappiyam* which is said to be from the second *Sangam* period, categorises all poetic discourse into *akam* and *puṛam*, the former associated with themes of the personal, love and interiority in contrast to the *puṛam*, which is based on the public, exterior and war themes. I use the word ‘contrast’ instead of ‘opposition’ because the elements in the *akam* and *puṛam* often overlap and create more layered meanings, despite being discursive poetic categories with distinct narrative practices. In the *Sangam* poetry as evidenced in the extant corpus of the *Ettuthokai* (*The Eight Anthologies*) and the *Pathupattu* (*The Ten Long Poems*), the poetic form is “the complex interplay of suggestions” (Hart 196) composed of the *mutal* (first element of time and place, with place also extended to mean *thinais*), the *karu* (the native elements from nature) and the *uri* (the human element or the emotion). The *mutal* and *karu* often intermingle in what is termed as ‘*thinaimayakkam*’, especially across different phases of love as seen in the *akam* poetry. As noted by many commentators on *Sangam* poetics, the conventions do not bind the composer, but rather provide a blueprint which is built upon with poetic creative processes. Thus, the *Tholakappiyam* which theorizes much of the *Sangam* poetics is characterized by Venkatachalapathy as not only a grammatical text, but a text that “presents a veritable cosmology, a unified world view” (16).

It is significant to note the centrality of nature in early *Sangam* poetry, as seen in the naming of the five major *akam thinais* after the flora that predominates the corresponding Tamil landscapes of hill, forest, farmland, seashore, and wasteland. In contrast, the worldly *puṛam thinais* are more flexible in their use of imagery and depend on naming the personae which remain unidentified in *akam* discourse. *Thinais* thus represent not just the natural elements or the landscape with associated human behaviours but come to embody the mood associated with the particular ‘*uri*’ or human emotion being expressed in the lyric. A.K. Ramanujan reads *thinais* as a “hyphenated continuum” between ‘nature-culture’, a non-binary, non-Eurocentric conception of Tamil culture that is the feature of *Sangam* poetics (286).¹ A. R. Venkatachalapathy has also noted the discursive contribution of *thinai* poetics to contemporary theoretical frameworks in ecocriticism (28).

¹ Quoting here an interpretation of Tamil *thinai* poetics which informs the discussion in the latter part of this paper as well. Martha Ann Selby writes, “What makes the *tinai* system a “poetics” is, in fact, a sort of “overdetermination.” The composers of these poems foisted this desire [of human body's continuity with nature] outward upon environmental elements, and incorporated those elements into a multi-layered semiotics. In the poems, *tinai*

The late-Sangam text *The Cilappatikāram* is influenced by Tamil *Sangam* poetics not only at the level of its narrative, but also at the level of structure. A secular epic composed by a Jain ascetic, the text presents a socio-cultural milieu in which Buddhist, Jain and Hindu religious practices co-exist with references also to minor folk traditions. Despite the Jain belief in karmic cycle which drives the major events such as Kōvalaṅ's unjust killing in the epic; the mythopoetic imagination draws from a pluralist worldview and encompasses references to *Rama* from Sanskrit epic tradition, as well as major and minor Tamil mythical figures such as *Murukan*, *Kottravai*, *Aiyai* and many others, often in juxtaposition with one another. The epic comprises thirty cantos which span over the Tamil kingdoms of Chola, Pantiya and Chera dynasties; collectively representing the '*Tamilakam*' which is placed in opposition to the northern *Ārya* kings in the final third book based in the Chera empire. Here, R. Parthasarthy's observation on the structural aspect of the epic is enlightening.

The three books represent the three distinct phases through which the narrative moves—the erotic, the mythic, and the heroic. The erotic (*akam*) and the heroic (*puram*) are the traditional categories of Tamil discourse. The poet enlarges and deepens its resonance by adding a mythic (*purāṇam*) dimension to it... Kaṇṇaki's exemplary life as a chaste wife impacts on all the three phases of the narrative and makes it structurally coherent (6).

The *akam/puram* shifts which permeate the text structurally, even at the thematic level, can be read as analogous to the fluidity of *thinaimayakkam*, a narrative strategy through which while the *uri* (human element) of a scene remains stable, the *mutal* and *karu* may overlap creatively. An example could be drawn from the Canto 1 which opens with the wedding of Kaṇṇaki and Kōvalaṅ, a significant departure from war-based western epics. Although based on the description of the wedding with *akam* as the predominant mode, opening Canto 1 also establishes the sovereignty of the Chola king which is a *puram* thematic situation, hence marking an "interplay of the erotic and the heroic, of chastity and kingship, of agam and puram" (Mangalam 122) at the thematic level as well.

The consummate indigenous non-Sanskritic Tamil *Sangam* poetics thus provides structural and thematic coherence to *The Cilappatikāram*. When examined from a non-Eurocentric perspective, the 'epic' as a genre falls short to illustrate the unique features of the Tamil legend of Kaṇṇaki's apotheosis into the goddess Kaṇṇaki. The Tamil legend expands the conventional understanding of epic by including sections on the various domestic travails of the couple, the non-androcentric legend rendered into a poetic form consisting of dance and song cycles apart from narrative in Iḷāṅkō's composition. Many commentaries on the text's genre provide indigenous conceptualisations, although with a fraught history from the twentieth century onwards.² As Zvelebil notes,

becomes more than a "landscape" or poetic "gesture." It becomes an actual language—the constant repetition of *tinai* symbology gives it a "congruity," locking it into articulations of convention that are requisite for a full-blown rhetoric" (29).

² For more see Normal Cutler "Three Moments in Tamil Literary History" in Pollock, Sheldon, ed. *Literary Cultures in History: Reconstructions from South Asia*, UCP, 2003. Cutler elaborates on the "histories of Tamil literature which emerged as a genre of scholarship in twentieth century", and the influence of the Dravidianist cultural turn on

Atiyarkkunallar (12th-13th cent. A.D.) defines *The Cilappatikāram* as an “*iyal-icai-ndtaka-porul-totar-nilai-cceyyul*, i.e., 'a poem whose stanzas are connected by their content, having elements of poetry, music, and drama.' Such large poems (*cceyyul*) of connected stanzas of text (*totarnilai*) were identified, under the impact of Sanskrit thinking, as *kavyas*, and came to be called *kappiyam*” (130). R. Parthasarthy further traces the genre of “the *totar-nilai-cceyyul*” or loosely the “poetic sequence”, to have “originated in the long poems of classical Tamil poetry and later came to be known as the *kappiyam*, narrative poem” (315). Thus, the thirty cantos of *The Cilappatikāram* can also be placed as individual long classical Tamil poems, converging perhaps through the composer’s redaction to take its contemporary form. While there are enough affinities between the western idea of epic and Tamil long poems for the latter to be ascribed as an epic sometimes in discussions, it is useful to identify the text’s unique poetics and highlight it, as in the use of the word ‘*kappiyam*’ instead of the more Eurocentric ‘epic’ in referring to the text.

The Cilappatikāram as a *kappiyam* reinforces its representative value as part of the classical Tamil culture and worldview. Emerging from the Tamil cultural context, the *kappiyam*’s juxtaposition of the allusions to mythical events from Sanskrit epics with the mythopoetic description of Kaṇṇaki’s apotheosis at significant moments is a sign of dialogicity between the Sanskrit epic traditions and Tamil culture, but need not be restricted to only that reading.³ Here I would give an example to illustrate this comparative mythopoetic activity in the text. In canto 13 of the second book of *Maturai*, a *Brahman* visits the couple driven to *Maturai* as a fruition of Kōvalaṅ’s karmic cycle after he has squandered all his money and reunited with his wife. The *Brahman* paints a picture of despondent kin after Kōvalaṅ’s departure from *Pukār* with his wife Kaṇṇaki.

...The great hero,
Rāma, left for the strange forest,
Saying:
‘As his eldest son, my father’s command
I obey. A trinket the kingdom.’
Like Ayodhyā at Rāma’s departure,
All of Pukār is indignant at your going away. (133)

The comparison of Kōvalaṅ leaving *Pukār* with *Rāma* leaving his kingdom not only glosses over Kōvalaṅ’s indiscretion by presenting his departure in more benign terms, but is relevant here for bringing in mythical figures from Sanskrit epic in the Tamil *kappiyam*’s mythical framework of

Tamil literary historiography and genre classifications of the classical texts such as *Cilappatikāram* (specifically pp. 288-322).

³ K. Zvelebil examines the dialogicity between Sanskrit and Tamil literary traditions in detail, and comments on the evidential paucity of the same during the early Sangam era. He writes: “The impact of the great national epics of India cannot naturally be underestimated. There had been a Southern recension of *the Mahabharata*. The story was familiar to early bardic poets: Puram 2, Akam 233, and *Cilappatikāram* XXIX all mention the great war. Inscriptional evidence is available for the ceremonial participation of the South Indian rulers in the great battle...The story of Rama, too, was current in early Tamil India, as may be seen from Akam 70, Puram 378, and *Cilappatikāram* XIII. 64-6 and XIV. 46-8...None of these early Tamil versions of the two great epics is extant now” 130-31.

comparisons. Earlier in the epic, Kōvalaṅ is also suggested as resembling the Tamil god *Murukan*, as well as *Gopala*, with connotations of his protective role towards Kaṅṅaki in Canto 15 before he is fatefully executed. However, a more direct example of comparative mythopoesis can be found in Canto 1 in which *Ananku* or ‘sacred power’ as defined by Tamil culture is associated with the young bride Kaṅṅaki by her comparison to *Arundhati*, a minor mythical figure from the Sanskrit literary tradition.⁴

She is Lakṣmī herself, goddess
Of peerless beauty that rose from the lotus,
And chaste as the immaculate Arundhatī. (26)

Arundhati, the symbol of chastity and wifely devotion in Sanskrit thus becomes the mythical figure that embodies the implied suggestion of *Ananku* power which was associated with chaste women in the Tamil culture. The allusions to northern or Sanskritic mythical figures by bringing them within the purview of Tamil *Sangam* poetics is not unique to *The Cilappatikāram*, but as noted by George Hart, stretches back to early *Sangam* poetry and remains a characteristic part of literary tradition in the following centuries as well. With regard to recurring references to *Krishna* and *Balarama* in early *Sangam* poetry anthology *Purananuru*, Hart points out,

Thus it is evident that from the very beginning, the Tamils applied their own poetic conventions to the gods and mythological figures from North India, and that from the first they emphasized the roles of the new gods in what was for them the central and most sacred act of life, love between man and woman. In the succeeding centuries, the Vaishnava and Saiva Tamil saints continued and developed this practice (57).

While the pattern of mythical allusions in early *Sangam* poetry is not within the purview of this paper, Hart’s observation reiterates the dialogic relationship between Tamil and Sanskrit mythopoesis in the classical literature, and hints towards the relational nature of myth-making as we find at many instances in the *kappiyam Cilappatikāram*.

The comparative mythopoesis in the *kappiyam Cilappatikāram* can be read as a narrative strategy reminiscent of, if not reflective of the influence of the ‘technique of suggestion’ which is integral to *akam* and *puṛam* *Sangam* poetics. Like the poetic imagery of the *Sangam* poem marked by an interplay between the *mutal* (first elements of time and place) and *karu* (native elements) which comes to represent the *uri* (human element of emotion) or the human experience, the interplay between various myths juxtaposed within the text also substantiate and eventually naturalise the myth of the *Pattinī* Goddess. Expounding upon the *Sangam* poetic suggestion techniques, R. Parthasarthy

⁴ George Hart notes that for the Tamils, “...the sacred was primarily manifested not through a number of discrete deities, each of which had an extensive mythology associated with it, as in North India, but rather through a power thought to inhere in certain objects and persons and to be activated in certain situations. Moreover, this *ananku*, as the Tamils called it, was not a force that worked for human welfare, but rather was capricious and potentially malevolent; therefore, it had to be carefully controlled lest, like fire, it bring destruction (81).

highlights that in *the Cilappatikāram*, “The landscape embodies, rather than expresses, meaning. Ilanko chooses only a few details, but they are enough to evoke the total landscape, one that becomes the inner landscapes of mind, heart, and spirit that are ineffable” (297). Despite reading the *Sangam* poems and the *kappiyam* in translation, the symbolic interplay of *thinai*s and the resonances of the suggestive language strikes the readers nonetheless, a testimony to the semiotic possibility of translating symbolic language.

Delving at the level of semiotics, where Sangam poetic conventions perform their unique function, A.K. Ramanujan reads the *thinai* poetics as,

In the Tamil system of correspondences, a whole language of signs is created by relating the landscapes as signifiers to the *uri* or the appropriate human feelings. In this world of correspondences between times, places, things born in them, and human experiences, a word like *kurinci* has several concentric circles of meaning: a flower, the mountain landscape, lover’s union, a type of poem about all these, and musical modes for these poems. But its concrete meaning, “a mountain flower” is never quite forgotten. (241)

The suggestive meaning or signification created through the interaction between the human emotion and its embodiment in the landscape acts like a metalanguage, defined by Barthes as, “a second language, *in which* one speaks about the first” (114). In Sangam poetics, the denotative sign of the ‘landscape’ in Tamil language becomes a signifier/form again in a second order semiological chain of poetic syntax which endows it with the signified/concept of human emotion which becomes the associated signification through poetic convention.⁵

However, the connotations emerging from these poetic conventions—especially in the more symbolically charged *akam* poetry—operate as “inset”, defined by Ramanujan as an implicit comparison at the structural level in the poem, unaccompanied by “explicit markers of comparison (e.g., “like”, “as”); such an omission increases manyfold the power of the figure” (246). It is only when this intricate metalanguage of suggestion and comparison is adopted by the poets, albeit creatively, then the Sangam poetics acquires or comes to represent a “world-picture which functions like a mythology” (Ramanujan 286). This is the world-picture which establishes the discursive *akam* and *puram* conventions and more significantly the inherent comparative narrative strategies within Sangam poetics which influence the mythopoetic imaginary of the late-*sangam kappiyam Cilappatikāram*.

⁵ The visionary A.K. Ramanujan highlighted this semiotic phenomenon in Sangam poetics as follows: “Mere nature description or imagism in poetry would be uninteresting to classical Tamil poets and critics, for it would not “signify”; it would be a signifier without a signified, a landscape (*mutal* and *karu*) without an *uri*, an appropriate human mood” (243). Ramanujan further elaborates the signification process of the “second language” of Sangam poetry by pointing out that the association of *kurinci* flower with its corresponding *thinai* is not entirely arbitrary, but derives from topographical properties and cultural associations with the region already in place (250). This is reminiscent of Barthes’ description of the signifier-signified relationship at the second level of signification not being entirely arbitrary/denotative, but connotation oriented. I am indebted to Ramanujan’s nuanced semiotic reading of Sangam poetics from which I draw in this paper.

The interplay between *akam* and *puram* discourse is integral to the non-androcentric *kappiyam* which traces the chaste wife Kannaki's apotheosis into a goddess, a female protagonist who oversteps the boundaries of the *akam* domain after the unjust killing of her husband and subverts and questions the authority of the *Pantiya* king who has failed to uphold *dharma* in his kingdom. The injustice perpetrated in the public/ *puram* domain influences the stability of the *akam* domain, and the latter complements, and hence responds to the unjust power structures of the former. Kaṇṇaki's redemptive burning down of Madurai stems from her *ananku* (sacred power), referenced at various points in association with her from the opening canto onwards. *Ananku*, a sacred power inhered in various people and objects, including the chaste women and king, was a capricious force which had to be channeled and propitiated, "carefully controlled lest, like fire, it brings destruction" (Hart 81). Thus, the description of Kaṇṇaki as a lamenting widow with disheveled hair at the *Pantiyan* king's gate highlights her status as a woman in rage and marks an important moment in the transition to her deification. It is significant to note the comparative mythopoetic impulse in the narrative here:

She is not Korravai, the goddess of victory
With the fierce spear in her large hand,
Standing on the buffalo's neck that spurts
Continuous blood from its open wound.
She is not Aṇanku, the youngest sister
Of the seven virgins, who made Śiva dance.
She is not Kālī who lives in the dreadful forest.
She is not Durgā who tore apart the broad chest
Of Dārūka. Pent up with hatred and anger
At the loss of her husband, she stands
At the gate, a golden anklet in her hand. (187-88)

The subversive self-declaration of Kaṇṇaki as a widow seeking justice in Book II is ironically and deftly submerged within the larger ideological functions of the myth-making process which legitimizes the Chera king's masculine sovereignty by a paradoxical submission to the mythical goddess. Through the purportedly propitiatory act of establishing the shrine dedicated to the *aṇanku* power of the goddess, the Chera king in book III institutionalises the cult of the Goddess.⁶ In the process of her deification, the woman who had entered and challenged the public/ *puram* domain is re-appropriated as a goddess in the masculine rhetoric of war and kingship. The process of deification of Kaṇṇaki witnesses the comparative mythopoetic framework at full play;

The goddess of Maturai appeared before her
Who had wrenched off her fierce, youthful breast,
Whose triumph equaled that of Lakṣmī, Sarasvatī,

⁶ Here, one may also explore the symbolism inherent in the wedding anklet, the breaking of which also marks the sexual castration of the once-wedded now widowed Kannagi. This can be compared with the role played by ornaments such as the ring, in Sanskrit legends such as that of Sankuntala.

And Kālī who slew the Buffalo Demon. (198)

As discussed before in the parallel drawn between the ‘technique of suggestion’ in *Sangam* poetics and mythopoetic comparisons which are a major literary device in the Tamil *kappiyam* (epic), the chain of suggestions here substantiates and paves the road for the naturalisation of the myth of the Goddess *Pattīni*. The comparative mythopoetic framework works to naturalise the construction of the Goddess myth in *The Cilappatikāram*, by placing it within the larger mythopoetic discourse consisting of references from Sanskrit tradition as well as some references from the Buddhist and Jain cosmologies. Here, significantly a dialogicity is visible between the multiple mythopoetic traditions establishing an interrelated, pluralistic worldview. However, it is to be noted that the Goddess myth’s institutionalisation is interrelated to the political hegemonic ambitions of the Chera king, whose wish to assert his authority over the defiant northern Arya kings finds a vehicle in the ritualised establishment of the shrine of the goddess *Pattīni*, for which the stone is brought from the Himalayas. With regard to the war waged against the intemperate Aryan kings in the III Book of the *kappiyam*, Norman Cutler notes:

While Aryan kings of the north may serve as “the other” against which Tamil political identity is defined in *Cilappatikaram*, at the same time the north, represented by the Himalaya and the Gaṅga, carries an undeniable prestige...It is thus evident that if the author of *Cilappatikaram* speaks on behalf of a Tamil imperium, he also employs a rhetoric that emphatically is not exclusively Tamil (300-301).

The description of the war brings together many ancient Tamil cultural beliefs in which the “words that meant king in ancient Tamil now denote God” (Hart 13). The king, often compared to *Indra* or *Yama* when setting out for war was imbued with sacred power granting him the responsibility of ensuring security of the kingdom through victory in war, as through a successful harvest (Hart 34-35). The influence of these cultural associations is seen into following verses where the act of cutting through enemy lines is implicitly compared to the harvesting process:

Those who guarded the elephants trembled with fear.
Ceṅkuṭṭuvaṅ yoked the animals like oxen,
And with swords as sticks he threshed the enemy.
Goblins applauded him who plowed the battlefield
With his spear. With their long hands, shaking
With bangles, they raised the crowned heads
Of the dead. Flaunting them they danced
Before the war-chariot, and compared this battle
With the ones fought at the time of churning
The ocean, and in seablown Laṅkā, and the one
In which the seablue god drove the chariot. (236)

The description of the battlefield is symbolically charged, and comparative mythopoesis juxtaposes the significant event of the war fought for fetching the stone for the shrine of the Goddess to the mythical events from Sanskritic mythical discourse, thus highlighting the inherent comparative impulse in the narrative of the epic, as well as the relational nature of myth-making.⁷ The juxtaposition at this point in Book III is not to elevate the stature of the Goddess myth, but rather renders the sacred war being undertaken by the Chera king at par with other wars from the narratives of *the Rāmāyaṇa* or *the Mahābhārata*.⁸ The ideological underpinnings here relate to the Chera king, whose authority is fortified by participating in the sacred power of the Goddess. The comparison of this war with those in *the Rāmāyaṇa* and *the Mahābhārata* epics is not uttered by the poet directly, but stated by dependent subjects like the goblins who have revelled in similar war fields, thus projecting the Tamil conception of the war field on northern cultural myths as well. By situating the Tamil conception of war as the reference point, the north is brought within the purview of Tamil poetics. The mythopoetic process which naturalises the Goddess *Pattiṇi* is highly ritualistic as seen in the Book III cantos, the getting of the stone from the Himalayas being one of the steps of the more elaborate cultural practice. The close reading of comparative mythopoetic impulse in establishing the myth of the Goddess in *the Cilappatikāram* thus can be historicised as part of the power structures of kingship; albeit not in an isolationist mythopoesis, but in an inherently dialogic relation with the contemporary mythopoetic discourses. As aptly paraphrased by Susan Bassnett in her essay “Influence and Intertextuality: A Reappraisal” that “every text, as Roland Barthes reminds us, has meaning in relation to other texts,” In conclusion, it can be argued that the comparative mythopoetic impulse is an extension or influence of the narrative strategies of *Sangam* poetics; the latter influencing the strategies of suggestive mythical comparison to establish myths in relation to one another, establishing intertextuality as a given in textual practices of the Tamil *kappiyam* under consideration.

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⁷ See Hart in sub-section “The Ancient Tamils in War”, “The battlefield itself was metamorphosed into another world for the participants, a place where everything was charged with sacred power to the highest degree. Thus the poems describe over and over the metamorphoses of the gruesome objects of battle into beautiful or productive things associated with peace, especially things connected with agriculture” (32).

⁸ As noted by Parthasarthy, “The apotheosis of Kannaki into the goddess Patthini confirms the sacred character of the *Cilappatikaram*” (9).

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Syllable Deletion, Syllable Addition, Syllable Substitution and Syllable Restoration Tasks in Odia-speaking Typically Developing Children, Children with Learning Disability and Children with Phonological Misarticulation

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Abstract

Speech is the audible manifestation and spoken medium of language. The study of speech sound systems in a language is called Phonology and falls under the category form of the three sub-fields of Linguistics. Phonological skills development is one of the basic foundations before language mastery of a child. Language-specific phonological and morpho-phonemic rules make it essential to test various aspects designed to assess different phonological abilities in that specific language.

Odia, an alphasyllabic language of the Indic group of the Indo-European family, has unique features of few phonemes, morphophonemic and morphosyntactic rules, dissimilar to its sister languages. This study includes an analysis of data obtained for many tasks like phoneme deletion, addition, substitution, and restoration tasks as a part of Ph.D. research to construct a screening test in Odia language. After construction of stimuli by pilot studies, the main stimuli (words, non-words, word pairs, sentences etc.) were presented to a total of 480 typically developing children (12 subgroups) in the age range of 3-12 years and 20 children with Learning Disability, 20 children with Phonological misarticulation and 40 Adults. The results were analyzed gender-wise, age and group-wise for each task. Comparison of skills developing for typically developing children to that of children with Learning Disability and phonological misarticulation gives an insight into possible processing of information at various stages and abnormalities in those stages.

Keywords: Odia language, Developmental changes, Syllable deletion, Addition of syllable, Substitution of a syllable, Phoneme restoration, Learning Disability, Phonological misarticulation

Introduction

The scientific study of human language, linguistics, is broadly broken into three categories or subfields of structurally motivated domains: form, content, and use. Phonology, the study of speech sound system, falls under the first sub-field- form. Psycholinguistics, the study of the underlying cognitive processes, deals with the psychological and neurobiological factors, enabling individuals to acquire, use, comprehend and produce language as a reflection of inherent mental processes.

The development of various psycholinguistic abilities correlates with mental abilities sophisticated for language functions; therefore, any abnormality in the pattern can explain underlying problems and help intervention. The skills start potentially with observable, measurable behaviors like the deletion of syllables to form words, the addition of syllable or substitution of a syllable to make a meaningful word or even restoration of a syllable when missed or replaced by noise.

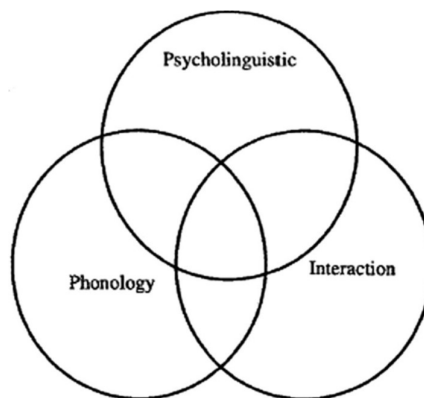


Figure-1. A. An integrated three-way approach to intervention for children with speech difficulties (from Pascoe, Stackhouse, & Wells, 2006).

Following or understanding a psycholinguistic perspective is knowing that children's acquisition of speech and literacy skills is the product of an intact speech processing-production-feedback system. This loop comprises speech input processing like auditory discrimination; lexical representations like storage for semantic, phonological, motor, grammar and orthographic; speech output processing like programming and production, and feedback and correction system like monitoring own speech.

Different psycholinguistic approaches to the management of a child with speech difficulties aim at-

- Within a psycholinguistic model, where speech errors arise.
- Analyzing the possible root cause like medical conditions like hearing loss, neurological condition or structural abnormality.
- Examine the effect of such conditions on different aspects of development other than speech perception and production, like reading and spelling.
- Make a profile for baseline, strengths, and weaknesses to plan for intervention.
- Select intervention targets based on linguistic analysis of speech output.
- Use the model at each step to monitor progress, utilize strength, and evaluate intervention efficacy.

Odia Language

Odia is widely spoken in the state of Odisha and some regions of West Bengal, Andhra Pradesh, and Chhattisgarh. At the same time, Odia is bounded and influenced by those neighboring languages. There are different regional dialects of Odia like the dialect of Ganjam and Koraput in the south, the dialect of Sambalpur in the west, the dialect of Balasore in the north, dialect of the districts, Cuttack and Puri. Regardless of the regional, social, and tribal dialects, there is an inter-group communication method using standard Odia, which is the closest form of written Odia, using more or less derived words.

Odisha has a slightly lower percentage (18.79) compared to national bilingualism (19.44%); however, it has a slightly higher trilingual percentage of 9.22.

The Phonology of Odia

The Odia phonemes occurring in all varieties, regional and social, amount to thirty-eight segmental phonemes, including six vowels and thirty-two consonants, two suprasegmental phonemes and two juncture phonemes. The vowel length is not phonemic, though it has orthographic symbols of two long vowels used in written form.

Tab 1. A. Vowels of Odia Language

	Unrounded (Front)	Neutral (Central)	Rounded (Back)
Close (High)	ଐ /i/		ଊ /u/
Half Close (High-Mid)	ଏ /e/		ଓ /o/
Half Open (Low-Mid)			ଌ /ɔ/
Open (Low)		ଌ /a/	

Tab 1. B. Consonants of Odia Language.

	Bilabial	Dental	Alveolar	Retroflex	Palatal	Velar	Glottal
Stops							
Unaspirated							
Voiceless	ପ /p/	ତ /t̪/		ଡ /ɖ/		କ /k/	
Voiced	ବ /b/	ଦ /d̪/		ଢ /ɖ̪/		ଗ /g/	
Aspirated							
Voiceless	ଫ /pʰ/	ଫ /t̪ʰ/		ଠ /tʰ/		ଖ /kʰ/	
Voiced	ଭ /bʰ/	ଧ /d̪ʰ/		ଢ /ɖʰ/		ଘ /gʰ/	
Affricates							
Unaspirated							
Voiceless					ଚ /t͡ʃ/		
Voiced					ଜ /d͡ʒ/		
Aspirated							
Voiceless					ଝ /t͡ʃʰ/		
Voiced					ଞ /d͡ʒʰ/		
Nasals	ମ /m/	ନ /n̪/		ଣ /ɳ/	ଞ /ɲ/	ଞ /ŋ/	
Laterals			ଲ /l/	ଳ /ɭ/			
Tapped			ର /ɾ/				
Flapped							
Unaspirated				ଡ /ɖ/			
Aspirated				ଢ /ɖʰ/			
Fricatives		ସ /s/					ହ /h/
Semivowels	ଞ /w/				ଞ /y/		

Specific features of Odia Language:

- A gap in the vowel system makes it unique from any other language in the world.
- Special consonantal allophones
- 2nd person familiar singular imperative person number suffix /phai/.

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- The penultimate stress pattern of language.
- Nasalization is the only suprasegmental phoneme found in Oriya.
Eg. ବଳ୍ଲଣୀ /baḷḷṣi/ - flute
ପୁଇଁବା /puĩba/ - to get warm from fire
ଆଁ /ã/- opening mouth
ପେଁକାଳୀ /pẽkaḷi/- small trumpet
ମୁଆଁ /muã/- fried rice cake

Non-phonemic vowel length, although there are a number of instances where the vowels are phonetically long and may also contrast with their short counterparts. (ପିଲା /pila/- child, ପିଲଲା /pi:la/- he drank as in morpheme boundaries), imperative words ending takes a longer vowel form (ଢେଲ /ḍʰo:-wash).

- Geminate vowel construction in word pairs due to the vowel ending system in languages like Oriya. (ଗୋଟେ-ଏକା /goṭe:ka/- Only one).
- There are two graphemes for long forms of vowels /i/ & /u/- ଇ, ଈ and ଉ, ଊ; with only one phonemic form with shortness while speaking.
- Syllable structure: Except for the loan words, Odia words are vowel ending, including most of the syllables to be open. Even closed syllables have a vowel peak. Monosyllabic words can be in the form of V (ଆ /a/- come), CV (ଗା/-ḡa/- go), CCCV (ସ୍ତ୍ରୀ/-strī/- wife), and ending with consonants in some dialectical variations VC (ଆସ/-as/- come), CVC (ବସ /-baṣ/ - sit). Bi-syllabic words can be in the form of CVCV, CVCCV, CCVVCV, CCVCCV.
- Consonant clusters with two, three, and four consonants are found in Odia, including geminations.
- The flapped retroflex ଢ [ɽ], on the other hand, is treated as an allophone of ଢ /d/ and is a very frequent phone in the language. ଢ [ɽ] occurs intervocally, whereas ଢ /d/ occurs elsewhere. It also has an aspirated form ଢ [ɽʰ] to be used intervocally for the aspirated ଢ /dʰ/.
- There are two Diphthongs ଆ /ai/ and ଔ /au/ available in Odia.

Besides these above specific features, there are many Morpho-phonemic rules, unique to this language, play a major role, like phonologically conditioned alternations- ଏ-ଇ - /e~/i/, before ଅ (/ɔ/), /e/ is replaced by /i/, example- ଦେ (/ḍe/)+ ଅ (/ɔ/) → ଦିଅ (/ḍiɔ/) – (you), meaning ‘give’.

Need for the Study

There are very limited studies in Odia or languages with similar features on the development pattern of acquisition of linguistic skills, specifically phonology skills in Odia language.

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The baseline age-wise performance is essential to note or mark any disordered form or abnormality processing for intervention strategies.

Hypotheses

- There is no difference in performing the tasks for phoneme selection (blending to form words), addition, substitution and restoration tasks in different age groups of children, which can show a developmental trend.
- There is no difference in performance between the typically developing children and children with Learning Disability and children with Phonological misarticulation when age matched.

Review of Literature

Phonological awareness is defined as the sensitivity to the sounds of spoken language and the ability to work with those sounds (Goswami, 2000). Though there are differences like grapheme-phoneme relationships and orthographic representations across language, phonological awareness serves to be an essential skill in - the acquisition of language (Ziegler et al., 2010) and word decoding along with correspondence between grapheme and phoneme (Lambrech Smith, Scott, Roberts, & Locke, 2008).

Phonological awareness skills mean a person can detect similarities between two words, manipulate words through blending and segmentation, and detect the parts of words like phonemes and syllables (Alcock, Ngorosho, Deus, & Jukes, 2010).

Phonological awareness is a multilevel skill of breaking down words into smaller units. The difficulty of various Phonological awareness tasks varies with linguistic level (Trieman & Zukowski, 1991).

Anthony and Francis (2005) suggested that Phonological development is universal across languages.

In many western studies, it is reported that Phonological awareness plays an important role in the early stages of reading in alphabetic languages such as English (Ehri, Nunes, Willows, Schuster Yaghoub Zadeh & Shanahan, 2001). However, in case of non-alphabetic languages, the role of phonological awareness towards reading acquisition has been questioned (Nag, 2007).

There are both contradictory studies in Indian languages like Akila (2000), Dinesh (2002), and also there are many studies that support the involvement of phonological awareness in learning to read the alphasyllabic scripts like Iyyer (2000), Kumar et al. (2010), and Nag, Caravolas and Snowling (2011).

Phonemic awareness is a subset of the broader concept - Phonological awareness (Snow, Burns & Griffin, 1998). Hampenstall (2003) stated that prior to phonemic awareness, there are 11 stages of phonological development-

- a. Recognition that sentences are made up of words.
- b. Recognition that words can rhyme-then production thereof.
- c. Recognition that words can be broken down into syllables - then production thereof.
- d. Recognition that words can be broken down into onsets and rimes - then production thereof.
- e. Recognition that words can begin with the same sound – then production of such words.
- f. Recognition that words can end with the same sound - then production of such words
- g. Recognition that words can have the same medial(s) – then production of such words.
- h. Recognition that words can be broken down into individual phonemes – then production thereof.
- i. Recognition that sounds can be deleted from words to make new words – the production thereof.
- j. Ability to blend sounds to make words.
- k. Ability to segment words into constituent sounds.

Authors like Griffith and Olsen (1992) suggested that the last four levels (from h to k) belong to phonemic awareness.

Several authors suggested that phonemic awareness requires individuals to be able to manipulate sounds (phonemic analysis), blend sounds to form words (phonemic synthesis) and change, delete, add, and substitute individual phonemes. (Trehearne, 2003; Chard & Dickson, 1999).

Perception of smaller units of a word also includes the task of filling the gaps or creating a missing portion or part. Kashino et al. (2006) stated that under certain conditions, missing sounds from a speech signal could be synthesized by the brain to be heard, which is known as phonemic restoration. Restoration of phonemes when replaced by noise is one major aspect of it; however, it also can occur when temporally distorted (Ishida, Arai & Kashino, 2018) or in the presence of allophonic variation (Meunier, 2022).

Methodology

The present study has a survey research design, where scores were collected from a defined population, the selected sample was systematically questioned, and results were analyzed and generalized. The selected sampling process was purposive because a series of factors like language exposure, educational exposure at school and home, parental socioeconomic status, and teaching methods were to be kept uniform for all the groups of children.

Participants: This study included four groups for all tasks-

Group A: A total of 480 typically developing, Odia-speaking children with no problem or deficits in hearing, psychological, visual or neurological functioning. This group is abbreviated or written as Children with typical development- CWTD.

Table 3. A. Subgroups of children of Group A with their age range and number.

Subgroup	Age	No. of subjects Male/ Female	Subgroup	Age	No. of subjects Male/ Female
I	3 yrs to 3 yrs 6 months	20/20	VII	6 yrs to 7 yrs	20/20
II	3 yrs 6 months to 4 yrs	20/20	VIII	7 yrs to 8 yrs	20/20
III	4 yrs to 4 yrs 6 months	20/20	IX	8 yrs to 9 yrs	20/20
IV	4 yrs 6 months to 5 yrs	20/20	X	9 yrs to 10 yrs	20/20
V	5 yrs to 5 yrs 6 months	20/20	XI	10 yrs to 11 yrs	20/20
VI	5 yrs 6 months to 6 yrs	20/20	XII	11 yrs to 12 yrs	20/20

*Age differences of 6 months at a younger age were taken for a better and more precise analysis of developmental changes).

Group B: This group comprised 20 Odia-speaking children with Learning Disability aged 7 to 12 years. This group is abbreviated or written as Children with Learning Disability- CWLD.

Group C: This group included 20 Odia-speaking children with Misarticulations in the age range of 7 to 12 years (classified into phonological errors/misarticulations with no anatomical abnormalities and no motor impairment of Oral Peripheral mechanism). This group is abbreviated or written as Children with Phonological Misarticulation- CWPM.

Group D: This group included 40 Odia-speaking adults aged 25-35 years with no history of hearing loss, neurological impairments, and cognitive deficits.

Inclusionary and exclusionary criteria: All participants use Odia as their primary language, Odia (only) for their daily communication needs; exposure to Odia is limited to learning as part of the curriculum.

Group B- Children with Learning Disability without any mental illness or mental retardation. The subtype of learning disability was not considered as a factor, as the different difficulties overlap in many cases.

Group C- Children with misarticulations without any mental illness or mental retardation and any structural abnormalities, neurological, neuromuscular abnormalities.

Screening: All children and adults were screened for the inclusion criteria of the research design.

Task Descriptions of tasks with examples of stimuli

- A. **Syllable deletion:** It is the person's ability be able to delete a specific syllable from a given word. In this task, the participants had to listen carefully and delete the first syllable of the words in the first list and the last syllable of the words from the second list.

For example- for the Word ଦୋକାନ /dokaṇa/- 'shop', when the first syllable is deleted, it becomes କାନ /kaṇa/- 'Ear.'

- B. **Addition of syllable (to form a word):** This task aims at checking the individual's ability to add a syllable to make a word; in this task, participants were needed to add one syllable to a two-syllable utterance to make a meaningful word.

For example- For the non-meaningful utterance ବୁଢ଼ /buḍḍa/, if someone adds the syllable ସ /ṣa/ and produces it, it becomes ସବୁଢ଼ /ṣabudḍa/- 'Green'.

- C. **Substitution of syllable (to form a word):** This task aims at checking the individual's ability to substitute a syllable of a true word to make a new word.

For example- For the word ଆଧାର /ādḥāra/- base, substitute ଚା /tḥā/ for ଧା /dḥā/, and make the new word- ଆଚାର /atḥāra/- 'Pickle'.

- D. **Phoneme restoration:** It is the ability of the participant to guess the full word when one syllable of the word is added with noise in the middle syllable (synthesized).

For example- For a word produced with noise ସ**ଡ଼ /ṣa**ḍra/ for ସମୁଦ୍ର /ṣamudra/- 'Ocean', ସ**ରି /ṣa**ri/ for ସପୁରି /ṣapuri/- 'Pinnacle'.

Presentation of the Stimuli: The stimuli were constructed (based on the frequency of use, the structure of the words, the position of a syllable, arrangement of a syllable, rhyming), checked for familiarity and subjected to repeated pilot studies.

The stimuli had many words that could not be represented by pictures. For example, ଯିବା /dḥiba/- (will go) can not be shown with a simple action of going as the base go verb takes a lot of forms in Odia language and easily will elicit the response as 'he is going' instead of 'will go'. Further, many stimuli were non-words, segments of words, sentences etc.

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Syllable Deletion, Syllable Addition, Syllable Substitution and Syllable Restoration Tasks in Odia-speaking Typically Developing Children, Children with Learning Disability and Children with Phonological Misarticulation

Also, the basis of this study was to see the breakdown in the system from auditory processing to conceptualization to production. Therefore, excluding visual memory or visual perception was necessary by avoiding pictures for words. The pictures also might elicit synonyms or related words. Lastly, tasks like phoneme restoration would become an easy task with a given picture,

Written forms of the stimuli in Odia script were also avoided as few children from younger age groups might not have attained literacy skills, especially for clusters or longer words.

Considering all the above factors, based on previous similar research, the presentation of the stimuli was done in either recorded speech or live speech for the participants to listen and respond, based on each task.

Results

The means of the scores for each task were put through the Shapiro Wilk Normality test to see if the data falls under normal distribution, which showed that the significance value was less than 0.05 for all mean values, indicating that the data did not fall under normal distribution, with skewness ranging from -2.765 to 1.8 for different comparisons.

Therefore, different non-parametric tests were performed as described below for detailed statistical analysis, besides descriptive statistics.

Common Observation from Analysis of all tasks revealed that there was no difference in scores for gender for any of the groups, subgroups, tasks, or other complexity of stimuli.

Syllable Deletion Task: The mean scores obtained from participants were analyzed to see age-wise and group-wise differences.

Table 4.A. Friedman Chi-Square Analysis of responses for Initial Syllable Deletion (ISD) and Final syllable deletion (FSD), for Group A (CWTD), for the task of syllable deletion.

Parameters	N	Minimum	Maximum	Mean	SD	Median	X ² (11)	p-value
ISD	480	2	5	4.15	1.06	5.00	440.104	0.000**
FSD	480	2	5	4.32	0.91	5.00	416.300	0.000**

* Indicates significant at P< 0.05 ** Indicates significant at P<0.01

This table indicates a significant difference between scores obtained from the section of initial syllable deletion and final syllable deletion task, indicating children with typical development performed differently for initial syllable deletion and final syllable deletion.

Table 4.B. Mann Whitney Analysis of responses between groups for Initial Syllable Deletion, for Group A (CWTD), for the task of syllable deletion.

Groups	n	Mean	SD	Median	Mean Rank	Z	p
1 vs. 2	40	2.40	0.50	2.00	34.50	2.680	0.007**
	40	2.70	0.46	3.00	46.50		
2 vs. 3	40	2.70	0.46	3.00	33.70	3.251	0.001**
	40	3.10	0.55	3.00	47.30		
3 vs. 4	40	3.10	0.55	3.00	36.90	1.594	0.111
	40	3.30	0.65	3.00	44.10		
4 vs. 5	40	3.30	0.65	3.00	33.90	2.896	0.004**
	40	3.70	0.46	4.00	47.10		
5 vs. 6	40	3.70	0.46	4.00	26.10	6.184	0.000**
	40	4.60	0.50	5.00	54.90		
6 vs. 7	40	4.60	0.50	5.00	32.50	4.444	0.000**
	40	5.00	0.00	5.00	48.50		
7 vs. 8	40	5.00	0.00	5.00	40.50	0.000	1.000
	40	5.00	0.00	5.00	40.50		
8 vs. 9	40	5.00	0.00	5.00	40.50	0.000	1.000
	40	5.00	0.00	5.00	40.50		
9 vs.10	40	5.00	0.00	5.00	40.50	0.000	1.000
	40	5.00	0.00	5.00	40.50		
10 vs. 11	40	5.00	0.00	5.00	40.50	0.000	1.000
	40	5.00	0.00	5.00	40.50		
11 vs. 12	40	5.00	0.00	5.00	40.50	0.000	1.000
	40	5.00	0.00	5.00	40.50		
12 vs. D	40	5.00	0.00	5.00	40.50	0.000	1.000
	40	5.00	0.00	5.00	40.50		

* Indicates significant at P< 0.05 ** Indicates significant at P<0.01

*Subgroups 1-12 stand for Group A(CWTD)-Subgroups A-I till A-XII, D represents Group D-Adults

This can be observed that Group A (CWTD)-Subgroup A-III and A-IV scored similar for the initial syllable deletion. And subgroup A-VII onwards, there was no difference in scores

till the adult group, indicating the children achieved adult-like production from the A-VI subgroup onwards.

Table 4.C. Mann Whitney Analysis of responses between groups for Final syllable deletion, for all typically developing children, for the task of syllable deletion.

Groups	n	Mean	SD	Median	Mean Rank	Z	p
1 vs. 2	40	2.90	0.84	3.00	36.70	1.561	0.118
	40	3.20	0.88	3.50	44.30		
2 vs. 3	40	3.20	0.88	3.50	37.50	1.268	0.205
	40	3.50	0.51	3.50	43.50		
3 vs. 4	40	3.50	0.51	3.50	38.50	0.893	0.372
	40	3.60	0.50	4.00	42.50		
4 vs. 5	40	3.60	0.50	4.00	35.30	2.395	0.017*
	40	3.90	0.55	4.00	45.70		
5 vs. 6	40	3.90	0.55	4.00	27.30	5.645	0.000**
	40	4.70	0.46	5.00	53.70		
6 vs. 7	40	4.70	0.46	5.00	34.50	3.734	0.000**
	40	5.00	0.00	5.00	46.50		
7 vs. 8	40	5.00	0.00	5.00	40.50	0.000	1.000
	40	5.00	0.00	5.00	40.50		
8 vs. 9	40	5.00	0.00	5.00	40.50	0.000	1.000
	40	5.00	0.00	5.00	40.50		
9 vs.10	40	5.00	0.00	5.00	40.50	0.000	1.000
	40	5.00	0.00	5.00	40.50		
10 vs. 11	40	5.00	0.00	5.00	40.50	0.000	1.000
	40	5.00	0.00	5.00	40.50		
11 vs. 12	40	5.00	0.00	5.00	40.50	0.000	1.000
	40	5.00	0.00	5.00	40.50		
12 vs. D	40	5.00	0.00	5.00	40.50	0.000	1.000
	40	5.00	0.00	5.00	40.50		

*** Indicates significant at P< 0.05 ** Indicates significant at P<0.01**

*Subgroups 1-12 stand for Group A(CWTD)-Subgroups A-I till A-XII, D represents Group D-Adults

From the above table, it can be noticed that for final syllable deletion, the scores obtained from Group A(CWTD)-subgroup A-III and A-IV were not different, and from age group A-VII, till adult group, scores were similar to initial syllable deletion.

The following table was constructed from the statistical analysis to show at which age Group B (children with LD) and Group C (children with PM) matched with the typically developing children.

Table 4.D. Age Matched Group B (CWLD), Group C(CWPM) with Group A(CWTD) for the task of Syllable deletion.

		Group B				Group C				
	Age-matched groups	Mean	SD	Z	P	Age-matched groups	Mean	SD	Z	P
	A-III	3.1	0.55	1.006	0.315	A-VI	4.6	0.5	0.293	0.77
ISD		3.25	0.64					4.5		
	A-IV	3.3	0.65	0.315	0.753					
		3.25	0.64							
	A-I	2.9	0.84	1.167	0.243	A-VI	4.7	0.46	1.356	0.175
		3.15	0.67					4.45		
FSD										
	A-II	3.2	0.88	0.437	0.662					
		3.15	0.67							
	A-III	3.5	0.51	1.952	0.051					
		3.15	0.67							

From the above table, it can be observed that the Group B (children with LD) scored similar to lower age groups (A-I,A-II, A-III) and Group C (Children with PM) scored similar to higher age groups (A-VI) for Final Syllable deletion, whereas, Group B (children with LD) scored equivalent to age group A-III,IV for initial syllable deletion, indicating that it was easier for them to score for initial syllable deletion.

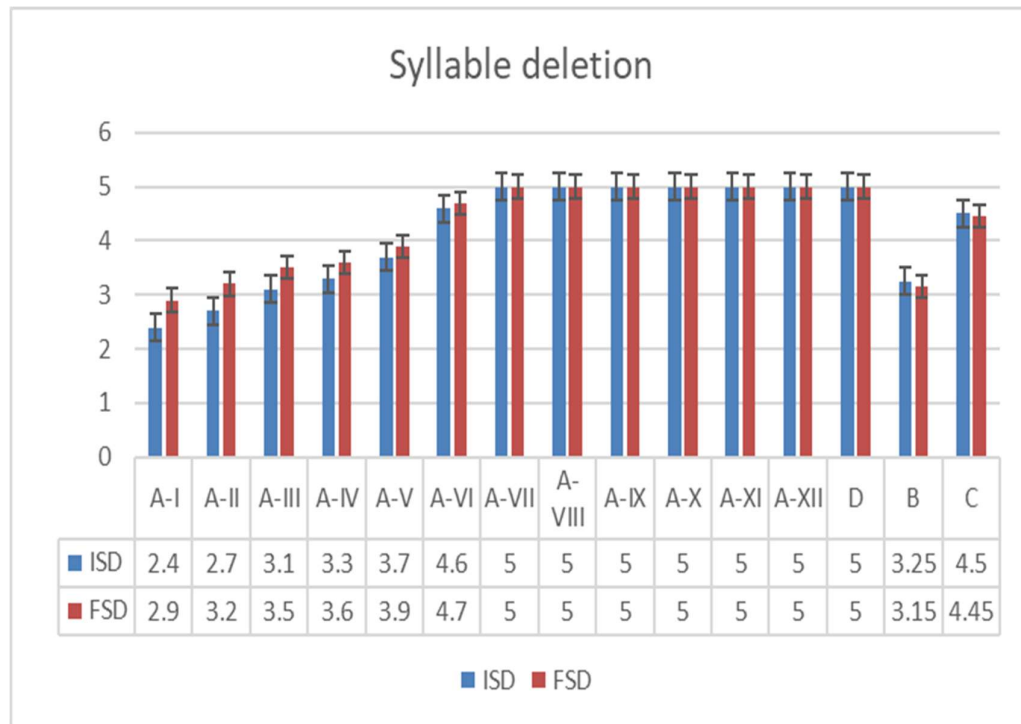


Fig. 4. A. Mean Scores of participants in each subgroup for Initial and Final Syllable Deletion for the task of syllable deletion.

From the above table, it can be observed that for children with typical development, Initial syllable deletion scored less than final syllable deletion until they achieved adult-like production. However, initial consonant deletion was easier in the case of children with LD and children with PM, though there was a difference in scores between the groups.

Similar analysis was conducted for all the tasks using mean scores and summarized in the following table to show the age-wise changes and similarities with the children with Learning Disability, Children with Phonological misarticulation and Adults.

In below table- The first Column represents the Groups and Subgroups.

Group B (CWLD)- Yellow color, wherever in Group A (CWTD), age-matched with Group B has been colored as Yellow.

Group C (CWPM)- Blue color, wherever in the Group A (CWTD), age-matched with Group B has been colored as Blue.

Group D (Adults)- Orange Color, wherever in Group A (CWTD), age-matched with Group D has been colored as Orange. This means Orange colored cells of a column show from that age; children achieved adult-like production.

Table 4.E. Developmental changes and Adult-like production on different tasks, only mean scores.

Groups & Subgroups	Syllable deletion		Add of Syl.	Sub of Syl.	Phoneme Restoration
	Ini. syl. Del.	Fi. Syl. Del.			
A-I	2.4	2.9	1.3	0	0.5
A-II	2.7	3.2	1.8	0.2	1.8
A-III	3.1	3.5	2.2	0.2	2.8
A-IV	3.3	3.6	2.6	0.6	3.5
A-V	3.7	3.9	3.5	2.3	3.6
A-VI	4.6	4.7	4.6	3.3	4.2
A-VII	5	5	5	3.4	4.4
A-VIII	5	5	5	4.2	6.1
A-IX	5	5	5	4.9	9
A-X	5	5	5	5	10
A-XI	5	5	5	5	10
A-XII	5	5	5	5	10
B	3.25	3.15	2.75	2.1	2.25
C	4.5	4.45	4.5	4.15	4.9
D	5	5	5	5	10

Discussion

The aim of the present study is to provide a baseline performance score for a few phonological awareness tasks and to find out if these tasks helped distinguish typical development from any abnormality like phonological misarticulation and learning disability. The mean scores of each subgroup of Group A were put into a graph to understand the pattern of development based on age in the following graph.

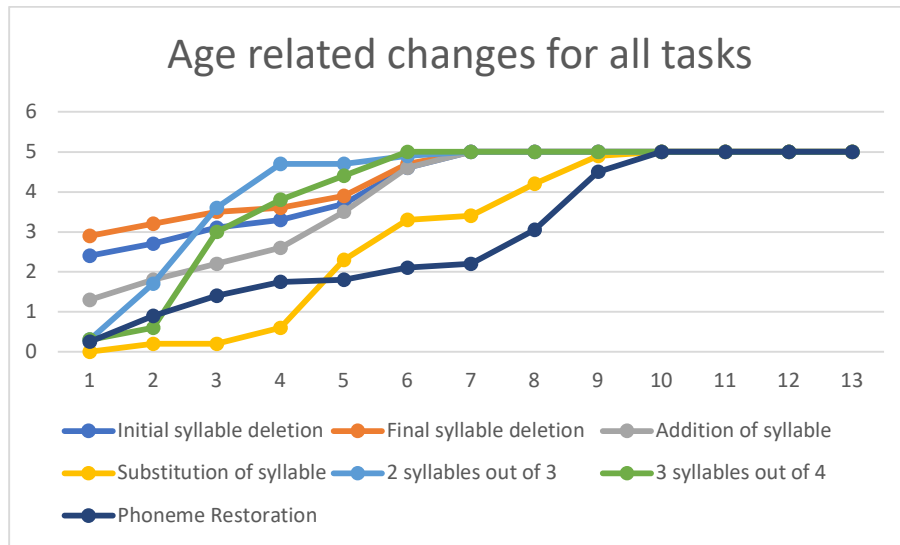


Fig.4. B. Mean Scores of participants in each subgroup for all the tasks showing developmental changes.

From both descriptive statistics and statistical methods to determine significant differences, it is evident that there is a pattern of development in typically developing children, where children not only develop different abilities differently but also reach the ceiling or adult-like productions differently.

When compared with age-matched typical development, both the group of children with phonological misarticulation and children with Learning Disability showed a lower score, and there was also a significant difference between the groups of Learning Disability and Phonological misarticulations, which also can serve as a basis for understanding the underlying malfunctioning of the processes in both conditions.

The performance of typically developing children (95% confidence interval) will be provided with the total screening test pack to compare with other tasks of phonological and morphological abilities.

Acknowledgment: Researchers aim at finding facts and observations, obtained from the participants. Therefore, the participants of this study deserve to get sincere gratitude, so as the Linguist, SLPs who helped in developing the stimuli, Statistician who helped in sample size calculation, methodology, scoring, tabulation and data analysis.

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A Survey Based on Xceptional Learning Platform

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Abstract

Speech and Language intervention provide different techniques for individuals with special needs depending up on the individual's strength and weakness. Teletherapy services have made it even simpler to receive the speech language intervention through the use of digital technology. This study helps to understand awareness of Xceptional Learning Platform among parents and SLP's. The study was conducted by providing 15 closed set of questionnaires to evaluate the awareness of Xceptional Learning Platform. Based on the statistical analysis, result demonstrates that parents are more aware of using Xceptional Learning Platform as parents are purchasing and using app more than SLP's.

Introduction

A speech language therapist, often known as a communication therapist, evaluates, diagnoses, and treats communication issues and disorders. Speech language intervention can help individuals with speech and language problems caused by stroke, brain injury, or other diseases as well as children with speech language disorders. There is risk of having social and intellectual issues, which could have long-lasting effects throughout puberty and life. It's crucial to start speech language intervention early and use it well. Due to cost effectiveness, socioeconomic standing, and geographical obstacles for families, access to speech language intervention could be improved with the help of technology, particularly with the help of mobile.

Technology has advanced in the field of speech and hearing, where professionals have been experimenting with various cutting-edge tools and providing top-notch services without jeopardising the most important treatment choice an individual may receive in a lifetime. Online therapy sessions are currently accepted as physical therapy sessions all around the world, as per the studies and reports in the health sector.

The Modern world's technology offers a wide range of chances for online speech and language intervention. Rather than Zoom and Google meet, many other online therapy apps such as Speak Easy, Apraxia, Common Boards Lite, Articulation Station, Speech Tutor, Gemini, Neuron UP and other speech treatment applications are introduced.

Xceptional Learning Platform approach is substantially more time consuming and accessible by making intervention approaches easily available wherever a mobile device can reach. By increasing personalization, it is primarily beneficial for persons who confront the

effects of social stigmas linked with communication difficulty. Sessions are convenient for parents' schedules, and they can make a significant contribution in their children's lives. If a person prefers online intervention mode as, it is easily available and inexpensive without limiting the person to a specific location. Additionally, by allowing individuals to generalise therapeutic goals to real-world circumstances, these treatment applications may provide additional choices for clients to gain critical feedback to reward positive behaviours and enhance performance.

Xceptional Learning Platform is formed by a leadership team that has decades of rich experience in the field of special education, occupational therapy, physical therapy, virtual reality, online education learning and information technology. It also includes therapy materials, scheduling, Goal bank and Teletherapy.

Xceptional Learning is a marketplace of solutions and tools that provides everything on a school-based curriculum. It contains a customized content library that can be organized and accessed during teletherapy sessions. And also, hundreds of Learning materials, Videos, Web Apps, Games which will help in the child's interest. The app will also provide compensatory services or missed services when therapists and special education providers take time off. The main thing that is highlighted in this platform is all the therapy materials can be stored, sorted and accessed from one place rather than going in and out of google drive. It can be quick assessed to add and review session logs and notes.

Tele-practice has progressed in the field of Speech and hearing over the last few decades with widespread availability, high-quality video conferencing solutions, and the evolution of distance learning technology. Tele-practice programs have been increasingly developing among practitioner's such that it provides family centered early intervention services, speech language therapy for children in public schools and rehabilitation to adults recuperating from Aphasia as well as those with speech and swallowing disorders.

American speech and hearing association (2005) determined that tele-practice is an appropriate model of service delivery for audiologist and speech language pathologists. These services have been a supporting system for student educational attainment and it was also found that these services are the only speech and language support they receive.

Fairweather (2016) examined the effectiveness and feasibility of a speech language therapy program delivered via teletherapy to children in rural Australia. The responses of participating children are shown as a significant increase throughout intervention period. Even the parents of these participating children appreciated the use of this option specially in places where alternatives are insufficient.

Studies shows that mobile Apps were useful for children with speech disorders which involves difficulty including speech perceptions, phonological representations, articulation or

motor production and phonotactics (Furlong,2018). Studies have shown that development of mobile Apps has been used to identify the presence of Aphasia and improve language outcomes and cognitive skills in adults with acquired cognitive disorder (Atiyeh, 2020).

Lisa (2018) investigated on the mobile apps for treatment of speech disorders in children. She concluded that Children with speech problems with speech perception, phonological representations, articulation/motor production, and phonotactics seem to benefit from these apps.

Jessica (2020) investigated on mobile apps for speech language therapy in adults. She concluded that, there are many interactive and engaging elements in the apps.

According to Munoz et.al adults with stroke and TBI used an app involving the target for speech, language, and cognitive skills. Regardless of demographic such as age, these apps were used higher in geographical areas with limited access to SLP clinics.

Methodology

Aim

The Aim of the study was to analyse the awareness of parents and clinicians about Xceptional Learning Platform.

The study was carried out in two phases

Phase1: Developing Questionnaire

In order to determine the level of knowledge of the Xceptional Learning Platform, a series of 15 closed-set (yes/no) questions were created. All of these questions were validated by 15 speech-language pathologists with more than five years of experience in the area. The corrections and suggestions advised by SLP's was incorporated and final questionnaire was ready to administer as shown below.

1. Does Xceptional Learning Platform features help in school-based sessions? (yes/no)
2. Does Xceptional Learning Platform provide any compensatory services? (yes/no)
3. Does Xceptional Learning Platform offer a free trial? (yes/no)
4. Does Xceptional Learning Platform schedule demo with specialists through this innovative platform? (yes/no)
5. Do Speech therapist need to be licensed to use this platform? (yes/no)
6. Does Xceptional Learning Platform provide any attendance logs and count hours of therapy provided to each student manually? (yes/no)
7. Does Xceptional Learning Platform have any help centre to enquire about the queries? (yes/no)

8. Do you observe any improvement in your child or client after different sessions? (yes/no)
9. Does Xceptional Learning Platform help to store therapy materials, sorted and accessed in one place rather than going in and out of your google drives or computer files? (yes/no)
10. Does Xceptional Learning Platform use different languages to stimulate language in a bilingual child? (yes/no)
11. Is Xceptional Learning Platform cost effective? (yes/no)
12. Does Xceptional Learning Platform work with different kind of users and organizations? (yes/no)
13. Are you aware that your data can be saved in this App? (yes/no)
14. Does Xceptional Learning Platform provide Quick feedback and clarifications? (yes/no)
15. Does Xceptional Learning Platform features drive attention to the users? (yes/no)

Phase II: Participants with Inclusive and Exclusive Criteria

A total of 30 participants including parents and SLPs of different age groups were participated in the present study. Participants include both men and women who are healthy and had no neurologic abnormalities or other mental illnesses.

Stimulus: A closed set of 15 questions prepared was used for sampling purpose.

Procedure: The list of validated questions was administered among the SLPs and parents and the task of the participants was to read and understand the questions and adequately respond to the questions by marking Yes or No.

Analysis: The responses from the survey was analyzed further scored as “1” for “Yes” and “0” for “No” response. The obtained values were statistically analyzed using Mean s.d and t test is used.

Result

The aim of the present study was to compare the awareness of Xceptional Learning Platform between parents and SLP’s and the obtained results are discussed below.

Fig1:

Showing the awareness of parents (in %) for each question. Red bars showing parents' level of awareness and blue bars showing SLPs level of awareness

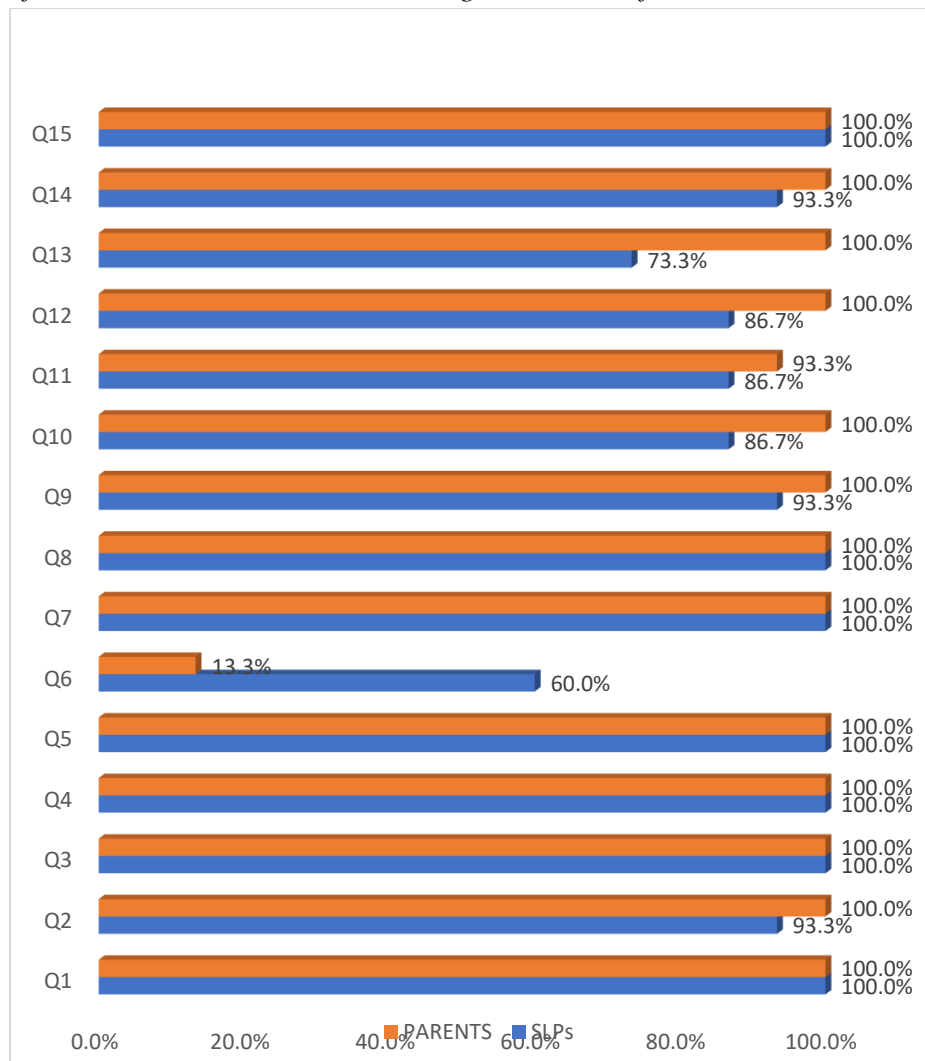


Table 1:

showing the mean value of awareness among SLP's and parents.

Group Statistics		
Group		Mean
Awareness (out of 15)	SLPs	13.73
	PARENTS	14.07

Most of the parents and SLP's were aware of Xceptional learning App.

Question 1 was about App features that help in school-based sessions. 100% of parents and SLP's were aware.

Question 2 was about compensatory services. 93.3% of SLP's and 100% of parents were aware of the services.

Question 3 was about free trial. 100% of SLP's and parents were aware.

Question 4 was about demonstration with specialist. 100% of SLP's and parents were aware.

Question 5 was about licensed speech therapist. 100% of SLP's and parents were aware.

Question 6 was about attendance logs and count hours. 60% of SLP's and 13.3% of parents were aware.

Question 7 was about the help centers to enquire queries. 100% of SLP's and parents were aware.

Question 8 was about the improvement of client. 100% of SLP's and parents agreed that their child have improvement using this app.

Question 9 was about storage of therapy materials. 93.3% of SLP's and 100% of parents were aware.

Question 10 was about the use of language to stimulate bilingual child. 86.7% of the SLP's and 100% of parents were aware.

Question 11 was about the cost effectiveness. 86.7% of SLP's and 93.3% of parents found the app to be cost effective.

Question 12 was about different organizations that work with Xceptional learning app. 86.7% of SLP's and parents were aware of the question.

Question 13 was about the data that can be saved in the app. 73.3% of SLP's and 100% of parents were aware.

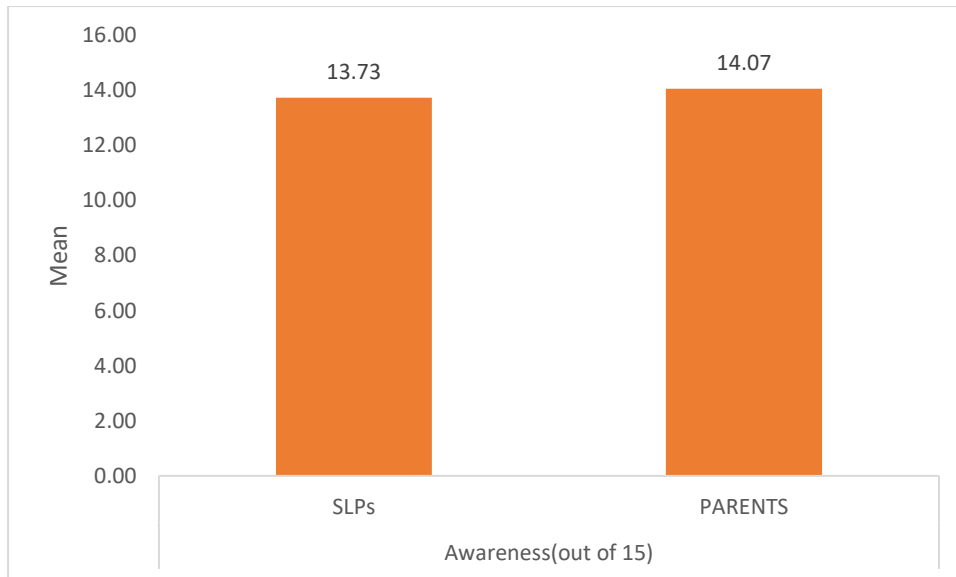
Question 14 was about the quick feedback and clarifications. 93.3% of SLP's and 100% of parents were aware of the question.

Question 15 was about how the features of app were attracting the users. 100% of SLP's and parents were aware of the app.

The X-axis in the following graph represents awareness, while the Y-axis shows mean awareness for the Xceptional app.

Fig 2:

Showing the awareness level of Xceptional Learning Platform among parents and SLP's



According to the results shown in the graph above, 14.07 percent of parents and 13.73 percent of SLPs reported utilizing the Xceptional Learning Platform was effective.

Discussion

All questions scored more than 50% for questions on awareness among parents and SLP's. But about the attendance logs and count hours, parents scored less than 50% because parents were not aware that attendance logs and count hours will be automatically saved in the app. From results it can be inferred that parents are more aware of Xceptional learning Platform than SLP's as parents are purchasing and using Xceptional Platform more than SLP's.

Conclusion

An Xceptional Learning Platform, which has been professionally tested, provides assessments and treatment videos, tests for people with special needs. The present research was carried out to validate the awareness of the Xceptional Learning Platform among parents and SLP's. It can be concluded that, the Xceptional Platform can be an effective technological tool for the assessment and management of speech and language therapy for individuals with disability.

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The Use of Sexist Words in Both English and Bangla Languages and the Ways to Avoid These Biased Words

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Abstract

Words mean things, but the meaning of a word is a complex reflection of the values of the culture which the language evolved. As such, all languages contain terms which, if taken individually and objectively without a context, appear overly nationalistic and sexist. Sexism in language is a social problem, since it is the reflection of human beings' thoughts. As we know, language is a comparatively stable system, much of its reduction in sexist language appears to be taking place as an unconscious reflection of social and attitudinal changes. Therefore, to eliminate the sexist language, we should above all eliminate the concept of prejudice in human beings' thoughts. Only by this way can we be free of sexism both in language and the society forever.

Keywords: sexist words, avoid and eliminate, Bangla, English.

Introduction

Sexist language is language that expresses bias in favor of one sex and thus treats the other sex in a discriminatory manner. In most cases the bias is in favor of men and against women. The existence of sexist language is due to sexism in society. As a social phenomenon, language is closely related to social attitudes. In the past, women are supposed to stay at home, remaining powerless and generally subordinate to man, whereas men are considered as the center both in the family and society. In a word, for a long-time women have been looked on as “the

weaker sex” in society. Even in English-speaking countries, which hold the claim that “everyone is created equal”, discrimination against women exists. Language simply reflects this social fact. However, because of their greater status-consciousness, the movement amongst feminists to reduce sexual discrimination and sex-role stereotyping has led to a number of conscious attempts to influence and change languages and linguistic behavior. In Bangla also we notice frequent use of some sexist language. Things are changing day by day and now it’s the time to avoid sexist language.

Exploring the Ways to Avoid These Biased Words

If we pay a close consideration to this fact, we will find that, in society, men are considered the norm for the human species: their characteristics, thoughts, beliefs and actions are viewed as fully representing those of all humans, male and female. At a very young age, society begins to teach children of their roles in life. Children are taught to be sexist from the beginning. This practice can make women invisible in language or altogether excludes them. It can also lead to their portrayal as deviations from this 'male = human' norm. Women's linguistic status is often dependent on or derives from that of men, which is represented as autonomous. By relegating women to a dependent, subordinate position, sexist language prevents the portrayal of women and men as different but equal human beings. Many words that we use are so common to us that we do not even realize that they are not inclusive towards women. A lot of these words are in reference to occupations. Such words include mailman, policeman, second man, milkman, etc. There is logical reasoning as to why we use these terms when talking about jobs. Years ago, women were not allowed to work. They stayed home to tend to the house and children. From that very period in language also we have hardly found women dominated words. Common forms of sexism in English include the use of 'man' and 'he / him / his' as generics—that is, nouns and pronouns referring to both men and women—the use of suffixes *-man*, *-ette*, *-ess*, *-trix* in occupational nouns and job titles, asymmetrical naming practices, and stereotyped images of women and men as well as descriptions of (mainly) women which trivialise or denigrate them and their status.

Similarly, there are many words, which are clearly male-orientated in that they contain the element “—man” while they can in fact apply to both sexes,

For example:

Chairman, congressman, councilman

Newsman, foreman, freshman

Policeman, salesman, mailman etc.

Sexism in language is also showed in that the noun of feminine gender can only be obtained by adding a certain bound morpheme to the noun. For example:

MALE FEMALE MALE FEMALE

Man	woman	manager	manageress
Prince	princess	god	goddess
author	authoress	mayor	mayoress
count	countess	shepherd	shepherdess
host	hostess	steward	stewardess
poet	poetess	usher	usherette
heir	heiress	sailor	sailorette
hero	heroine	conduct	conductette

In Bangla also, especially the name of some professions, are basically of common gender, namely, they can be applied to both sexes. However, people usually will habitually associate them only with male. Consequently, we have to add “Mahila” that is, “Woman” before those names if we want to refer to female of those professions. For example:

COMMON GENDER FEMALE

Doctor	Mahila (woman) doctor
Professor	Mahila professor
Engineer	Mahila engineer
Lawyer	Mahila lawyer
Reporter	Mahila reporter

The above examples obviously reflect people’s deep-rooted discrimination against women, that is, women have to be dependent on men and are even just some appendages of man. There is one tendency that involves words that are clearly restricted in reference to one sex or the other, with female words tending to have less favorable meanings. A classic pair is master and mistress, where the male meaning is ‘good’ and the female is ‘bad’; specifically, a mistress but not a master is a partner for extra-marital sex.

Some other examples are as follows:

1) The word “master” means “host” while the feminine word “mistress” has the surface meaning “hostess”. But, its connotative meaning is “lover”, “woman who depends on man” In the following sentence “He grew tired of his wife and went out for a mistress” Here we will sure know that “mistress “ cannot be his wife.

- 2) The word “governor” refers to “a person appointed to govern a province or state, whereas the word “governess” just means ‘nurse maid’.
- 3) The word “professional” refers to a person qualified or employed in one of the professions. When we say, “he is a professional”, he may be thought to be a boxer, whereas when we say “she is a professional”, she is likely a prostitute.
- 4) When “tramp” refers to male, it means that the man is homeless, he goes from place to place and does no regular work. While when it refers to a female, it also indicates that she is a prostitute.
- 5) The word *shrew* taken from the name of a small but especially vicious animal is defined in *Oxford Advanced Learner’s Dictionary* as an “bad-tempered, scolding woman,” but the word *shrewd* taken from the same root is defined as “having, showing, sound judgment and common sense.” and illustrated with the phrase “a shrewd businessman.”
- 6). “The man in the street” and “The woman in the street” is in the same situation, yet the former one just shows that the man is an ordinary person, the latter one can indicate that she is a prostitute.

Such sexual use of the female word is typical. North American English has no fewer than 220 words for a sexually promiscuous woman, but only twenty for sexually promiscuous men, and London school children had a rich vocabulary of insult terms for girls, all related to sexual behavior, but very few specifically for boys.

Recommendations

We can refer such thousands of examples of sexist language in every language. Now it is the high time to avoid the use of sexist language in every form of language. Every respective authority should take necessary steps to reconstruct these words and create neutral language which would be the means of showing respect to both man and woman.

There are some recommendations regarding this aspect:

It is recommended that women are made more visible in language by avoiding the use of 'male-specific' and 'male-identified' words in the generic sense. namely, man (generic sense) humans, human race, human beings, human species, humanity, humankind *or* women and men, person(s), man and woman, individual(s), people(s).

The use of 'man' should also be avoided in idioms and phrases when the author or speaker clearly intends the expression to include both women and men. Expressions such as 'the best man for the job' or 'the man on the land' not only make women's presence and achievements in the workforce invisible but can also lead to discrimination.

Alternatives for some common expressions are suggested below: “the man in the street” - --- the average citizen, the average person, an ordinary person, ordinary people; “the best man for the job” ---- the best candidate or applicant, person for the job, best man or woman for the job. “man to man” ----- person to person. “man of the year” ---- 'citizen of the year' or 'employee of the year'. In gender-specific contexts expressions such as 'man to man', 'woman to woman', 'one woman show', and 'one - man show' are appropriate.

Occupational nouns and job titles ending in *-man* obscure the presence of women in such professions and positions. There are various strategies for replacing *-man* compounds. For example, the use of an existing gender-neutral term (*police officer* instead of *policeman*), or of the *-person* alternative (*layperson* instead of *layman*) or the explicit naming of both sexes (*sportsmen and women* instead of *sportsmen*) are some of the possibilities. It is, of course, acceptable to use the *-man* compound to refer to a man occupying the position if a woman in such a position is referred to by a *-woman* compound (*spokeswoman* for a woman and *spokesman* for a man). However, the practice of referring to a man by means of the *-man* compound and to a woman by means of the *-person* compound is discriminatory.

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The Similarities in the Moral Philosophy in T. S. Eliot and George Santayana

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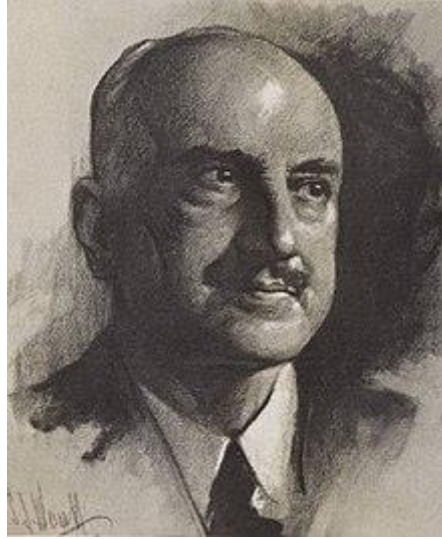
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Abstract

This paper aims at understanding the philosophy of life in *Four Quartets* by T. S. Eliot (1888–1965), an American-born poet, playwright, and critic. The idea of humility is reinforced by T. S. Eliot in *Four Quartets*. This is also a major theme in Santayana's writings. George Santayana (1863-1952), the Spanish-American philosopher and poet received his doctorate degree from Harvard University in 1889 and later became a faculty member there. He was a highly respected and inspiring teacher, and his students included poets Conrad Aiken, T. S. Eliot, Robert Frost and Wallace Stevens. He emerged as a central figure in American Philosophical circles. The paper examines the similarities in thought in the poems of T. S. Eliot and George Santayana.

Keywords: George Santayana, T. S. Eliot, humility

Four Quartets refers to a series of four poems by T. S. Eliot in 1943; the work is considered to be Eliot's masterpiece. "Burnt Norton" (1936) was published in **Collected Poems** 1909–1935; it then appeared in pamphlet form in 1941. Burnt Norton is a country house in the Cotswold Hills of Gloucestershire that Eliot visited in the summer of 1934. It is set in the rose garden of the house. The opening lines are assumed to be taken from a passage which was deleted from his play *Murder in the Cathedral* (1935). "East Coker" (1940) appeared in the *New English Weekly* and then in pamphlet form. "East Coker" is named after the hamlet in Somersetshire where Eliot's ancestors lived before immigrating to America in the 1660s; he visited the site in 1937. "The Dry Salvages" (1941) was first published in the *New English Weekly* and in pamphlet form. The title of the poem refers to a formation of rocks near Cape Ann, Massachusetts which Eliot had visited as a child. "Little Gidding" (1942) appeared both in the *New English Weekly* and in pamphlet form. The title is taken from the name of a village in Huntingdonshire where Nicholas Ferrar established an Anglican community in the 17th century. The poem is set at the Little Gidding chapel in winter. (Britannica)



A 1936 *Time* drawing of Santayana

Courtesy: https://en.wikipedia.org/wiki/George_Santayana

George Santayana is considered to be a “philosopher, poet, literary and cultural critic,” says Saatkamp, a scholar who has researched the works and philosophy of Santayana. “His naturalism and emphasis on creative imagination were harbingers of important intellectual turns on both sides of the Atlantic. He was a naturalist before naturalism grew popular; he appreciated multiple perfections before multiculturalism became an issue,” says Saatkamp further. Santayana “thought of philosophy as literature before it became a theme in American and European scholarly circles.” He naturalized Platonism, updated Aristotle, fought off idealisms, and provided a “striking and sensitive account of the spiritual life without being a religious believer.” He “presents views equal to Tocqueville in quality and importance. Beyond philosophy, only Emerson may match his literary production.” (Saatkamp)

Santayana’s philosophy of life as exemplified in his prose and poetic works emphasise on a “spiritual life” that “entails a complete transformation of the person: in being liberated from oneself one comes to feel for the first time that one/s oneself; in being liberated from the world one becomes capable of a universal love of nature” (Michelsen). Michelsen quotes Santayana from the book *The Philosophy of Santayana* published in 1940:

Your detachment will not be spiritual unless it is universal; it will then bring you liberation at once from the world and from yourself. This will neither destroy your natural gifts and duties nor add to them; but it will enable you to exercise them without illusion and in far-seeing harmony with their real function and end. Detachment leaves you content to be where you are, and what you are . . . yet in your physical particularity detachment makes you ideally impartial; and in enlightening your mind it is likely to render your action also more successful and generous... (Michelsen)

Michelsen explains that Santayana's "rational ethics is an intellectual attempt to bring order and harmony into natural morality" and further compares it to Buddhist ideology of "overcoming of greed, hatred and the delusion of an ego isolated from other happenings and existences" (Michelsen).

This paper attempts to study the similarities of thought in the poems of T. S. Eliot and Santayana.



Eliot in 1934 by Lady Ottoline Morrell

Courtesy: [https://en.wikipedia.org/wiki/T. S. Eliot](https://en.wikipedia.org/wiki/T._S._Eliot)

T. S. Eliot presents the idea of negating the self in *Four Quartets*. He describes a rose garden in "Burnt Norton" in which there are "other echoes" that "inhabit the garden." When these echoes are followed one meets the "first world." This natural world is "dignified" and "invisible" to the public eye; it lives without "pressure"; the air here is "vibrant"; "unheard music" is "hidden":

There they were, dignified, invisible,
Moving without pressure, over the dead leaves,
In the autumn heat, through the vibrant air,
And the bird called, in response to
The unheard music hidden in the shrubbery,
And the unseen eyebeam crossed, for the roses
Had the look of flowers that are looked at. (Burnt Norton)

This scene evokes a life devoid of ambition and greed. It deconstructs the concept of achievements, success, and limelight. The roses in the garden look as if they have been in the limelight and have the air of success. But Eliot goes in search of the hidden music of the shrubbery - ordinary pleasures. The poem recommends a life that aims at "inner freedom from practical desire." One has to move away not only from "outer compulsion", but also from "inner compulsion." He brings in the symbol of "white light" that signifies peace and harmony:

The inner freedom from the practical desire,
The release from action and suffering, release from the inner
And the outer compulsion, yet surrounded
By a grace of sense, a white light still and moving,
Erhebung without motion, concentration
Without elimination, both a new world
And the old made explicit, understood
In the completion of its partial ecstasy,
The resolution of its partial horror. (Burnt Norton)

“Erhebung” means elevation. Man has to liberate himself from the need to win which will elevate him. He is caught in the net of desire. This net of desire controls him and dictates terms to him. He loses his flexibility and fluidity of existence. Action binds the human heart and builds a prison of thought from which man cannot escape. He is caught in good and evil and perceives himself as a winner or victim. Eliot perceives action as bondage that creates conflicts in the human mind.

Man imagines that he is progressing. Nature has a different message to share. Eliot says that nature recycles itself; there is no difference between the end and the beginning or death and birth or success and failure; cities are born, only to die and to be reborn again:

In my beginning is my end. In succession
Houses rise and fall, crumble, are extended,
Are removed, destroyed, restored, or in their place
Is an open field, or a factory, or a by-pass.
Old stone to new building, old timber to new fires,
Old fires to ashes, and ashes to the earth
Which is already flesh, fur and faeces,
Bone of man and beast, cornstalk and leaf. (Burnt Norton)

The Wasteland also talks about the same idea: “Falling towers / Jerusalem Athens
Alexandria / Vienna London / Unreal” (*The Wasteland*).

Burnt Norton says that “Houses live and die: there is a time for building / And a time for living and for generation / And a time for the wind to break the loosened pane / And to shake the wainscot where the field-mouse trots / And to shake the tattered arras woven with a silent motto” (*Burnt Norton*).

In *East Coker* Eliot says that old men are full of folly, instead of wisdom; they are scared of life and are fearful of fear itself; the only wisdom man can acquire is “the wisdom of humility: humility is endless” (*East Coker*). A wise man knows how to be humble. Acquiring such humility is true wisdom.

In *Dry Salvages* Eliot confesses his monotheism and acknowledges: “I do not know much about gods.” He realises the power of nature and surmises: “but I think that the river / Is a strong brown god—sullen, untamed and intractable, / Patient to some degree, at first recognised as a frontier; / Useful, untrustworthy, as a conveyor of commerce.” Once man understood the way to solve the challenge of crossing rivers by building bridges, he forgot the superior position he had given to the river as a god, Eliot argues. Men in cities created religions that did not view the river as a God. The river is an earthly brown god who is “almost forgotten.” The man of the city began to worship the machine. The river began to wait and watch the activities of men. Eliot says mankind has been embedded with the awareness of the existence of the river: “His rhythm was present in the nursery bedroom, / In the rank ailanthus of the April dooryard, / In the smell of grapes on the autumn table, / And the evening circle in the winter gaslight.” The memory of the river “is within us” and “the sea is all about us.” The sea from the world of nature has “many voices, / Many gods and many voices” (*Dry Salvages*). Monotheism had already separated man from nature in Europe and, hence, in America. Anthropology of the nineteenth century brought back ancient religions and rituals to the academic world, and thinkers began to reflect on the shift from nature to man in religious approaches.

One is reminded of Nietzsche when he said in *The Birth of Tragedy*: “In order to be able to live, the Greeks must have created these gods out of the deepest necessity” (Nietzsche). Accepting multiple Gods and religions on the part of T. S. Eliot could be interpreted as his interest in anthropology, as a general trend of the age in which he lived -- the “tendency in nineteenth-century anthropology to construct rationalist explanations of how religion initially evolved out of primitive societies,” says Alexander Noel Ivan Polunin in his article “Eliot, Yeats and the Anthropologists: The Spiritual Quest of the Moderns” (Polunin 98).

The end of the journey would be similar to the beginning: “If you came this way, / Taking the route you would be likely to take / From the place you would be likely to come from... It would be the same at the end of the journey” says Eliot in *Little Gidding*. The purposeful approach to life is meaningless and “And what you thought you came for / Is only a shell, a husk of meaning / From which the purpose breaks only when it is fulfilled / If at all” (*Little Gidding*). Life reaches its purpose only when we realise we are nothing: “You are here to kneel / Where prayer has been valid. And prayer is more / Than an order of words, the conscious occupation / Of the praying mind, or the sound of the voice praying” (*Little Gidding*).

Man cannot have a special purpose on earth; he is a mere part of the universal plan; we are facets of the earth and its operations; we cannot fathom the principles of our lives; humanity cannot claim to hold a superior position on the planet; the importance we give to ourselves is meaningless, says Eliot: “Either you had no purpose / Or the purpose is beyond the end you figured / And is altered in fulfilment” (*Little Gidding*).

Whatever path we have chosen in our lives will ultimately take us to the same end; we could have started our journey from any point; we could have been born at any time; still our lives have similar elements of struggles, happiness, sorrow, pain and joy. Eliot says: “If you came this way, / Taking any route, starting from anywhere, / At any time or at any season, / It would always be the same” (*Little Gidding*). Man has to come out of his ideologies of himself and the world;

his identity is an artificial construction; human beings are mere species that are mortal; “you would have to put off / Sense and notion. You are not here to verify,” Eliot argues in *Little Gidding*.

Santayana in *Persons and Places* addresses similar views discussing humility as a value that makes us realise the insignificance of human lives: “This Spanish dignity in humility was most marked in my father” (Santayana 14). He celebrates life:

I love moving water, I love ships, I love the sharp definition, the concentrated humanity, the sublime solitude of life at sea. The dangers of it only make present to us the peril inherent in all existence, which the stupid ignorant untravelled land-worm never discovers; and the art of it, so mathematical, so exact, so rewarding to intelligence, appeals to courage and clears the mind of superstition, while filling it with humility and true religion. (Santayana 127)

Santayana insists on values of detachment and spirituality for living: “I mean devotion, I mean humility and renunciation” (179); “genuine Catholic humility” (222); “scientific humility and peace” (223); “Catholic discipline” (302); “Christian humility” (334).

He says that “No part of time is lost in eternity... Enjoy the world, travel over it, and learn its ways, but do not let it hold you. Do not suffer it to oppress you” (427). We have to be aware of the facets of the world, but not get caught in its web of complexities. Materialism can trap human lives: “To possess things and persons in an idea is the only pure good to be got out of them; to possess them physically or legally is a burden and a snare” (428). In *The Life of Reason* Santayana emphasises on substituting faith for knowledge which he assumes will “teach the intellect humility.” He argues that “experience, in bringing humility, brings intelligence also” (Santayana).

He writes in a poem: “I would I might forget that I am I, / And break the heavy chain that binds me fast, / Whose links about myself my deeds have cast.” The question of “I” poses a challenge to human cognition; we are products of a particular society and carry its identity along with a gender which we perceive as “I”; it is a chain that binds every human being. Santayana says further in this sonnet: “What in the body’s tomb doth buried lie / Is boundless; ’tis the spirit of the sky, / Lord of the future, guardian of the past, / And soon must forth, to know his own at last.” The spirit lies within the body that is the spirit of the sky; it is immortal and not bound by time and space; it is the Lord of the past and present as it has no birth or death; it is the body that is born and that dies later; the spirit has no boundary; it lives everywhere. (Santayana, Sonnet VII)

In another poem “There may be chaos still around the world,” Santayana says that “the whirlwind cannot awe / A happy snow-flake dancing in the flaw” recommending humility (Santayana). Tamil lyricist Kannadasan wrote in a song: “The grass that stands on the river bank / Does not fall down even during a storm / A seasoned mind does not collapse” (Kannadasan). Interestingly this leads us to wonder if these thoughts are Indian in nature. Santayana was inspired by Indian thought and understood the limitations of materialistic thinking says Coleman:

... Santayana saw no need to distinguish philosophies within Indian traditions. In a letter, he wrote “I make no distinction between Buddhism and Brahmanism, between Vedanta and Samkhya philosophies. This is not wholly an effect of

ignorance, but because the differences touch mythology or metaphysics only, and not the wisdom which is all I care for in these (or any other) philosophers” And Indian wisdom he acknowledged to be of greater perceptiveness than European traditions in at least one respect.

In *Reason in Science* (1906) he remarked the “Indian sages [who] long ago” observed “that all victors perish in their turn and everything . . . falls back into the inexorable vortex”. This sort of insight, wrote Santayana, “is what renders [Indian] philosophy, for all its practical impotence, such an irrefragable record of experience, such a superior, definitive perception of the flux. Beside it, our progresses of two centuries and our philosophies of history, embracing one-quarter of the earth for three thousand years, seem puerile vistas indeed”. (Coleman)

Coleman’s theory of Indian influences does sound reasonable, but Santayana has very clearly traced the concept of humility to Christianity and to science. A structural scientific approach to life would tell us that all species have their roles to play in the functioning of the universe, and one is not above the other as it might appear to us. Every life has its purpose, and it fills a certain place and cannot be removed from its functionality. Humility thus becomes a sign of a mature understanding of our position in this universe; it also emerges as a sign of intelligence and wisdom and T. S. Eliot and his teacher Santayana insist again and again.

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Locating Textuality in the City through “Literary Nonsense”: Reading Tagore’s *Khapchara* (1937)

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Abstract

It is very difficult to pin down the genre of literature named “Nonsense” for discussion and analysis. This paper will show how Tagore’s *Khapchara*, written in 1937, emerges as a ‘nonsense verse collection’ through mingling both the Western and Indian tradition of literary nonsense. This paper will also highlight how *Khapchara* combines nonsensicality and high seriousness. Finally, the paper would tend to locate the enmeshed textuality that can be traced in cities across the globe, especially Calcutta (presently known as Kolkata) through the lyrics written by Tagore.

Keywords: Rabindranath Tagore, *Khapchara*, City, Textuality, Literary Nonsense, Kolkata.

Participating in the realm of “literary nonsense”, Tagore critically examines a range of social, political and cultural issues of the Nineteenth century colonial Bengal in his *Khapchara*. He further illustrates the way Calcutta has suffered under the British Raj. It is pertinent to note that most of the lyrics written in *Khapchara* are deeply enmeshed in the politics of representing the city as a subject of colonial oppression and subjugation.

In *An Anatomy of Literary Nonsense*, Wim Tigges defines nonsense literature as “a genre of narrative literature which balances a multiplicity of meaning with a simultaneous absence of meaning” (Tigges 47). He further states that “this balance is affected by playing with the rules of language, logic, prosody and representation or a combination of these” (47). It is precisely in this context where I would like to posit *Khapchara*, a collage of hundred disjointed nonsensical lyrics written by Tagore, which acts as his motivational voyage into the realm of nonsense literature.

The Bengali word ‘khapchara’ means ‘incongruity’ or ‘mismatch’. Now, the title *Khapchara* is made up of two metaphorical terms- ‘khap’ and ‘chara’; the word ‘Khap’ is the allegorised representation of the very pre-imposed idea of ‘conventionality / the idea of sense-making’ and ‘chara’ is a keener invitation for ‘openness’ and an immense search for free play. Therefore, the title of Tagore’s verse collection is seen hovering between openness

and rationale and this hovering dominates almost all the lyrics of *Khapchara* to the fullest. Furthermore, it should be noted that *Khapchara* was written at a time which marked the emergence of the urban Bengali middle class 'Babus' in Kolkata.

In his discussion on literary nonsense, Walter Blumenfeld presents four types of nonsense. 'Semantic nonsense', according to Menninghaus, "arises from the disturbance or suspension of the 'relation between the sign and its reference'" (Menninghaus 11). 'Semantic nonsense' predominates most of the lyrics of *Khapchara*. For instance, "Lyric no. 60" not only violates the 'ideal framework', as termed by Husserl in his *Logical Investigations* to define the field of semantic nonsense, but it also disturbs the relationship between sign and its reference:

An eminent Engineer Crafts the plan
To build a bridge.
The bridge collapses, as usual,
And disappears into an unknown land. (Tagore 71).

"Telic nonsense or nonsense of purpose occurs", as Menninghaus opines, "when an intentionally guided behaviour is incompatible with its purpose" (Menninghaus 11). As an ideal 'Telic nonsense', "Lyric No. 97" introduces Khudiram / Khudubabu, "Khudubabu sits in the sun/And sings a song" (Tagore 134). The poem presents a deliberate purposelessness at once. But the poem also illustrates the typical colonial Babus of Kolkata who were full of idleness and lethargy which is Tagore critically questions in his rhymes.

It is the 'Logical nonsense' which is prominent in *Khapchara*. "Logical nonsense occurs between judgements and their grounds, and therefore", as Menninghaus suggests, "does not lie in the statement itself, but only in its justification" (Menninghaus 11). For example, conforming to Blumenfeldian logical nonsense, in "Lyric No 10", for instance, Tinkari eats less in order to balance his 'kinkor-kinkori' in his house: "I really eat very less / To keep myself thin and slim" (Tagore 13). The poem critically depicts the poverty-ridden condition of the city in the late nineteenth and early twentieth century Kolkata ironically.

Menninghaus further asserts that "Motivational nonsense is present when the relation between certain behaviour and its psychological conditions "does not correspond to our conscious feelings or to what we think we know about them" (Menninghaus 12). For instance, the very first apologia of *Khapchara* conforms to the typical Blumenfeldian motivational nonsense when Tagore, reacting to the spontaneous urge of an audience to write non serious verses, confesses that it is difficult to write nonsense: "You ask me to write simple words / But it's not easy to write simple words" (Tagore iii).

Gestalt nonsense attains its existence too in *Khapchara*. "In Eidetic or Gestalt nonsense", writes Menninghaus, "It is essentially a matter of the relationship of the parts to the whole. If we have no dominance, no ruling unity, then sense falls away"(Menninghaus

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12). Tagore's *Khapchara*, inspite of being a heap of disjointed diverse odd lyrics, emerges as a unified whole through collage and gives occurrence to, as Blumenfeld says, the 'Gestalt nonsense'. So, Tagore's *Khapchara* amalgamates all types of nonsense as explained in Blumenfeld's typology. Most of the lyrics of the collection, it would be pertinent to note, investigates the city of Kolkata and the tale of its citizens through humour as well as through irony.

Apart from these western traditions of literary nonsense, in the very veins of Tagore's *Khapchara* lies the indigenous Indian tradition of nonsense writing. Sumanyu Satpathy in *Tradition and Modernity in Indian Nonsense* opines that "modern or literary nonsense in India is a hybrid product that arose from colonial contact" (Satpathy et al. 27). He further argues that it is the "Bengali literary culture that responded to the foreign brand of nonsense first" (27). Both Sukumar Ray and Tagore brought to light the connection between the native Indian tradition and its modern counterpart by giving nonsense the phrase 'the rasa of whimsy'.

In Bengal, however, Tagore is one of the first to feel the unavoidable link between traditional 'chhora'(rhyme) and Indian literary nonsense. In 1893, in an essay named "Chele Bhulano chhora", he writes, "Ancient Rigveda was composed as panegyric to Indra, Chandra and Varuna; but chhorahas emerged from the panegyric meant for the twin gods enshrined in the mother's breast- little boys and girls. Neither of these can claim precedence over the other; the chhora may not be historically old but is so intrinsically". (Loka Sahitya)

Now, Tagore's *Khapchara* is not a 'chele bhulano chhora' at all. Combining the English tradition and the indigenous Indian traditions of nonsense, it rather participates in its project to portray the picture of the late nineteenth and early twentieth century colonial Bengal and to criticize the society from within. For instance, "Lyric no. 2" introduces Damoder Seth, the typical middle-class Babu who is dissatisfied even with 'ample food': "Damodor Seth is not satisfied with limited food" (Tagore 3) and urges for more. Through Damudor Seth's urge for more 'imported' food, Tagore in this lyric metaphorically presents the newly emergent urban middle class Babu's keener discontent even with adequacy and attacks the ramification of colonialism.

The satirical intention of Tagore takes another direction when in "Lyric no 24" he attacks the institution named marriage: "Father-in-Law cries for his Daughter / The Groom laughs ironically!" (Tagore 29). The tradition of marriage making is clearly satirized as in "Lyric no. 71" Tagore introduces Nobu who succeeds to release his tensions through five marriages (99). These Tagorian verses echo Sukumar Ray's poem named "Sat-Patra" ("A Marriage is Announced") where the name Gangaram is used to poke fun at the institution of arranged marriage. The tradition of dowry is also brought under question in "Lyric no. 48" and "Lyric no. 49":

Tagore through his nonsensical verses ridicules colonial education too. For instance, in “Lyric no.3” he writes: “Matilal Nandy yawns at the school” (Tagore 4). This act of yawning is highly symbolic of a vehement criticism against the colonial education system. Through Bholanath, Tagore radically attacks colonial education system in “Verse no. 63” as he celebrates for “writing more in spite of being mathematically wrong”(Tagore 88). Again, with his apparently nonsensical verses, Tagore directs his satire at the very nationalist agenda of the uncritical valorisation of the cultural past. Proper instance would be “Lyric no. 77”, “That point is not quoted in the notebook.” (Tagore 108)

The demand for historically defined art is a clear contribution of western education. The speaker of “Lyric no. 30” refuses to modernize himself. His attitude to music is purely emotional. So he hardly cares about others and continues singing in the midnight. His approach to music is purely emotional. He is the representative figure of the all-round decadence and larger Indian mindset. Like Vishwmalochan Sharma in Ray’s poem “The Power of Music”, this man is thrown out of the repository of traditional knowledge as he refuses to historicize himself and art. The verse again demonstrates the crisis of the people of Kolkata of that time who were subjugated economically due to British Raj. Tagore in this verse also attacks the idea of blindly following pre-imposed notions.

These attacks are the stepping stones for Tagore to further his criticism against the larger social discourses. What he is actually critiquing is the very mindset of the people. The refusal to open up, to adjust, to come to terms with the waves of modernity and this communal cultural religiosity is projected as the poet’s object of satire.

Interestingly, Tagore’s *Khapchara* does not only engage in criticizing certain institutions, but it also proposes probable solutions. In “Lyric no. 93”, being dissatisfied with traditionalism, Nilubabu informs Neyamat Dorji, “Listen, NeyamatDorji! / I no longer like the old fashion” (Tagore 129). Now, when Neyamat Miah designs a cloth with its button on the back and its whole on the front, Nilubabu cries out “Oh, what a surprise!” (129). Through this metaphor, Tagore here explores the urban inclination towards the new waves of modernism. Tagore suggests that the blind following towards modernity or a total negation to traditionalism would not suffice. Here, attacking the very mindset of the contemporary citizens of Kolkata, Tagore proposes the idea of a culture, i.e. the postcolonial construction of national culture as suggested by Frantz Fanon in his essay “On National Culture”, based on a proper synthesis of tradition and modernity. “Lyric no. 27” sums up the whole issue when Tagore writes “Leaving the comfort zone / She at last rises” (Tagore 35). Tagore’s *Khapchara* is actually a spontaneous urge to draw oneself out of one’s own comfort zone or ‘kholos’ to come to terms with the waves of modernity, but, along with a proper synthesis with tradition. Tagore not only portrays the characters through humour and fun, but also critiques the mindset of the people of the time.

In “Lyric no. 92”, Tagore explicates a journey towards Khulna and provides the vision of India which was undivided at that time, “If one needs to go to Khardah straight come for Khulna, / No matter how angry you get, who says this is wrong?” (Tagore 128). “Lyric no.104” introduces the urban space and its fleeting images graciously:

The tribe of foxes at Sealdah
Keeps laughing all day listening to its sneeze,
The Elephants of Hatibagan leave the city
Running towards Bhagalpur. (Tagore 143)

Although Tagore portrays fun and humour, he also focuses on the textual images of the city. “Lyric no 81” stands as a parody of the urbanization of the city. Tagore explores the politics associated with class difference in this lyric as he writes:

If he gets those pots,
River would flow through the city,
Only he could not
Because of the Potter's poverty. (Tagore 113)

“Lyric no 79” too introduces the character named Chintaharan who suffers economic crisis. “Lyric no 72” is again wrapped with humour. But the verse also showcases the city as a space full of crime ironically:

The path of Umedari
Those were partners
Where in Shyambazar,
Where in Chowrangi
...
That torn umbrella, the thief
Did not take, thanks to fate. (Tagore 101)

The hustle and bustle and the busy life of the urban space are explored through an unnamed character in “Lyric no 65”:

He lives in Kahalgah
Office in Kaputola
Arrives everyday at ten
He rides an Ekka.
Right when the corner arrived
The bridle got stuck,
As he was late,
He shivers to death,

Gripping the Horse's tail
He throws a fit. (Tagore 90)

Therefore, it would be pertinent to note that Tagore explores the urban space, especially Calcutta, through multiple perspectives. Playing with the established linguistic and literary conventions, Tagore infuses an element of high seriousness into *Khapchara*. This is evident when in the second prefatory verse, Tagore explains the four faces of Brahma, i.e. 'philosophy', 'Veda-recitation', 'poetry' and 'waves of excitement'.

Tagore's *Khapchara*, thus, is seen hovering between openness and rationale. 'Openness' is the use of nonsensical language and an attempt to criticize the mindset of the people and a proposal to maintain a culture based on a proper balance between tradition and modernity is the 'rationale'. A continuous tussle between openness and rationale is also evident in *Sahaj Path* where the speaker spontaneously questions, "Why does my father go to the office every day? / And not in a new country?" (Tagore 21). Here the speaker has a deliberate intention to ask his father to encounter the unknown new country instead of repeating his visit to the known portion named 'office'.

Tagore through his *Khapchara* inaugurates another broader question to the very idea of sense-making. The process of creation and reception of sense always function within 'the horizon of expectations'. The production of sense is dependent upon certain already existing norms and conventions. Tagorian nonsense follows these existing norms, codes of conduct, patterns of behaviour only to negate them. It also destroys certain traditional and conventional means of understanding 'sense' in order to foreground certain alternative ways of understanding sense. His nonsense is not merely about the rasa of whimsy, it is also about the creation of another kind of sense out of this apparently disordered arbitrary nonsensical world. The poems also argue the presence of enmeshed textuality of the city, especially Kolkata, through the genre of nonsense.

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The Efficacy of Think-Aloud Strategy in Reading Comprehension

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Introduction

Students who are learning a particular language are exposed to many different strategies to improve their respective skill. Elementary students learn how to read but gradually their level becomes high, and the same reading skill requires much more modification to make it perfect. At this level they are not only supposed to read the lines of a text, but they are to discover the intended meaning of that text. For this, their reading skill and the ability to express their own viewpoints need to be sharpened. There are many students who have the talent to read between the lines but require the proficiency to express them. In reading, especially in critical reading, this scarcity becomes a barrier to successful learning process. To rise above this problem linguists suggest several ways or strategies to practice; among them we consider Think-Aloud strategies more striking. Think-alouds (Davey, 1983) are times when students stop to describe their thinking process aloud while they are reading something. It is a kind of process which facilitates students to scrutinize their thoughts while reading a particular text. This research investigates how the performance of the students who are exposed to Think-Aloud strategies and who are not, differs from each other.

1. Hypotheses

Students who are exposed to Think-Aloud strategies before going through a text, are more successful critical readers than those who are not.

2. Methodology

To enrich our research, we wanted to collect information from Newspapers, journals and relevant books and articles which might help to probe deep into this matter, but as the current research is a unique one, secondary sources of data were not available that much. As a result, we

had to depend on only primary data. We have managed 4 (four) students who belong to same educational background and same level with whom we have arranged a test to evaluate our hypotheses. Two of them were exposed to the Think-Aloud strategies and another two were not. They were given a long paragraph of Francis Bacon's Of Marriage and Single Life as their text through which we kept on testing their ability to express their thought. All the four students were graduate students. So, it was easier for us to monitor their performance. The main focus of this research was the responses from two types of students. So, to evaluate the students' responses we arranged a test for both groups. Before that, the first group of two students was given direction, how to apply Think-Aloud strategies while reading. They were exposed to five Think-Aloud responses:

- Imagery/visual responses
- Making connections to personal experiences
- Making connections to other texts
- Predictions
- Stating understanding or confusion (Laurie, n. d.)

Both groups were given 20 minutes to answer three questions. The questions were in a different form. There were three blank spaces in their given passage. They were asked to write down the thoughts what come first in their mind when they read those sentences. The first group had to include which Think-Aloud strategies they had followed to respond to those sentences. As they finished their task, they were asked to read out what they had written. Their responses to the given sentences made our observation more explicit.

3. Findings

The text we selected for this research was appropriate for undergraduate students. So, we have chosen the four students who are at this level. In Appendix 1 the text is attached and also Appendix 2 presents the activity sheet they would use. Students who were exposed to Think-Aloud strategies their responses to the given sentences were like their comment. They seemed much more liberal to their responses. For example, when they were asked to respond to the line - 'Nay more, there are some foolish rich covetous men that take a pride, in having no children, because they may be thought so much the richer'. One of them responded - 'a wife may also consider the responsibility to her husband and children as burden, but this type of men and women have no right to consider themselves as human being'. The student mentioned he was making connection to his personal experience. On the other hand, the responses from the other group were like they were explaining the meaning of sentence. One of them responded to the same sentence in this way - 'in order to be richer some people are against marriage and having children because they consider them as unnecessary source of spending money'. These two comments indicate the difference between the two groups of students. The first group took more

time than the later one. The responses came from the former were qualitatively different from the responses of the second group. If a reader wants to go beyond conventional reading, he has to be familiar with the Think-Aloud strategy.

4. Revision of Hypotheses

After analyzing the responses of the two groups of students it has been established that - Students who are exposed to Think-Aloud strategies before going through a text are more successful critical readers than those who are not, but the first group takes more time than the second one. But we need to consider also whether the students not exposed to Think-Aloud strategies are following or have followed any other reading strategies.

5. Limitations

This present study is limited to a number of factors. The number of students is limited in terms of size because of time constraint. Though we have tried to gather as much information as we could to prove our hypotheses, this study has got some limitations too. There was scarcely any secondary data found that could have been used in this study. Above all, the responses of a few students cannot be considered as the standard research findings to establish a hypothesis.

6. Conclusion

Though there are some limitations, there is scopes for further study. This study will definitely help students to improve their critical reading skills. For them it would be the basis of their study in a much broader area.

Appendix 1 Of Marriage and Single Life

- Francis Bacon

Courtesy:

[https://en.wikisource.org/wiki/The Works of Francis Bacon/Volume 1/Essays/Of Marriage and Single Life](https://en.wikisource.org/wiki/The_Works_of_Francis_Bacon/Volume_1/Essays/Of_Marriage_and_Single_Life)

HE that hath wife and children hath given hostages to fortune; for they are impediments to great enterprises, either of virtue or mischief. Certainly the best works, and of greatest merit for the public, have proceeded from the unmarried or childless men; which both in affection and means, have married and endowed the public. Yet it were great reason that those that have children, should have greatest care of future times; unto which they know they must transmit their dearest pledges. Some there are, who though they lead a single life, yet their thoughts do end with themselves, and account future times impertinences. Nay, there are some other, that account wife and children, but as bills of charges. Nay more, there are some foolish rich covetous men, that take a pride, in having no children, because they may be thought so much the richer. **(1. Space**

for Student's Think-aloud response ...)

For perhaps they have heard some talk, Such an one is a great rich man, and another except to it, Yea, but he hath a great charge of children; as if it were an abatement to his riches. But the most ordinary cause of a single life, is liberty, especially in certain self-pleasing and humorous minds, which are so sensible of every restraint, as they will go near to think their girdles and garters, to be bonds and shackles. Unmarried men are best friends, best masters, best servants; but not always best subjects; for they are light to run away; and almost all fugitives, are of that condition. A single life doth well with churchmen; for charity will hardly water the ground, where it must first fill a pool. It is indifferent for judges and magistrates; for if they be facile and corrupt, you shall have a servant, five times worse than a wife. For soldiers, I find the generals commonly in their hortatives, put men in mind of their wives and children; and I think the despising of marriage amongst the Turks, maketh the vulgar soldier more base. Certainly wife and children are a kind of discipline of humanity; and single men, though they may be many times more charitable, because their means are less exhaust, yet, on the other side, they are more

cruel and hardhearted (good to make severe inquisitors), because their tenderness is not so oft called upon **(2. Space for Student’s Think-aloud response ...)** Wives are young men's mistresses; companions for middle age; and old men's nurses **(3. Space for Student’s Think-aloud response ...)** ...so as a man may have a quarrel to marry, when he will. But yet he was reputed one of the wise men, that made answer to the question, when a man should marry, - A young man not yet, an elder man not at all....



Appendix 2

Activity Sheet

References

Davey, B. (1983). *Think-aloud: Modeling the cognitive processes of reading comprehension*. *Journal of Reading*, 27(1), 44.

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Semantic Transparency and Productivity in Assamese Derivation

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Abstract

This paper explores how semantic transparency influences the phenomenon of morphological productivity in the Assamese language while looking into the fact whether phonological transparency has anything to do. There are shreds of evidence that certain affixes occur more frequently than others, or speakers prefer certain kinds of affixes to others in new word formations. There must be some underlying reasons because of which the speakers without being aware show preferences for some affixes. In this respect, the role of semantic transparency can be a considerable aspect to be investigated. Semantic transparency correlates with the cognitive understanding of speakers, which affects the productivity of a morphological process. However, in this process, phonological transparency may not always influence semantic transparency in Assamese morphology. The paper tries to discuss how semantic transparency is influenced by phonological transparency in Assamese, primarily focusing on derivative suffixes and its impact on productivity.

Keywords: Assamese morphology; semantic transparency; morphological productivity; phonological transparency; word-formation process; affixation

1. Introduction

The target language of this study, Assamese, is a dominant language of the state of Assam of the North-Eastern region of India which belongs to the Indo-Aryan language family. The language also works as the *lingua franca* of the region. It is also spoken in some parts of Arunachal Pradesh, Meghalaya, Nagaland, Koch Bihar, Bangladesh, and Myanmar, etc. and is

one of the twenty-two languages that is recognized and listed in the 8th Schedule of the Indian Constitution.

Assamese comprises numerous affixes for the inflectional and derivational word-formation processes. The categories of affixes that are found in Assamese are prefixes and suffixes. Although a language may have several affixes, every affix has its pattern of getting added to a stem or base, and not all of them can be used randomly for forming words. There are some patterns, because of which, if one affix can be used for producing a certain type of word, other affixes may not be an alternative to it. Every affix has certain conditions of getting attached to a base or stem in forming words and hence, adding an affix to a random base might not produce a valid or accepted word or word-form. For example, in Assamese, *-ɔk* works as an agentive, denominal, deverbal and deadjectival noun suffix, whereas *-aru* is an agentive noun-forming suffix which can be attached only to verb bases.

In an Indo Aryan language like Assamese, where a huge number of affixes exist for word formations (Morol 1974; Bora 2009; Bora 2015; Deka 2015; Deka & Deka 2009; Hakacham 7 2015; Goswami 1981; Goswami 2000), it is not a rare instance to observe that many affixes behave similarly, their selection of bases or stem and pattern of word-formation might be similar and sometimes they can be used as an alternative affix (E.g., *-uɔi* in *pɔrhɔi* ‘reader’ and *-uta* in *pɔrhuta* ‘reader’). These similar affixes that are used for new word formations can also be termed as competing morphological processes (Plag, 1999). In derivational morphology, most of the affixes share similar functions. For example, a lot of suffixes can form agentive and action nouns from different bases. For example, *-ɔk* in *k^hetijɔk* ‘Farmer’, *-ɔni* in *nasɔi* ‘dancer’, *-aru* in *zuzaru* ‘fighter’ etc. However, even if fewer differences may exist between two similar affixes, but they are not the same affixes and somehow every affix contains at least one unique feature.

According to Innateness hypothesis (Chomsky, 1957), the knowledge of language is inherent to the native speakers, which means it is programmed genetically to us. From this hypothesis, we can say that the knowledge of adding an affix to its acceptable stems or bases is often inherent to native speakers. They, without being aware, can identify a valid attested form and also can form nonce words without getting errors. Even though the process is unconscious to the native speakers, affixes follow certain criteria to get attached to bases. However, not all the affixes are being used equally in word-formations, some of them occur more frequently than others and this phenomenon is called productivity. There are some factors because of which speakers can readily identify some affixes as well as their stems or bases for a word over others. Semantic transparency can be a factor that may influence the phenomena of productivity, as some argue that productivity depends on the semantic transparency of the affix (Plag, 2004; Hay, 2001).

Semantic transparency is the degree to which the meaning of a whole word can be perceived from its constituents. It means the meaning of the whole is related to its parts. According to Auch, Gagne and Spalding (2020), “Semantic transparency is a theoretical construct referring to the extent to which the constituents of multi-morphemic words (e.g., fool+ish or re+hearse in derived words, or snow+ball or shin+dig in compound words) contribute to the meaning of the whole word.” It is widely used in the research field on multi-word lexemes. If a word’s meaning gets reflected in its constituents, then it can be said that the word is semantically transparent and if the meaning of a word is not related to its constituents, then it is opaque (Kiparsky 1973). For the investigation of semantic transparency, compounds are the preferred target of study, as they show a variety of changes in terms of the meaning of the words and their constituents (Bell & Schafer 2016). From this view, endocentric compounds are regarded as semantically transparent, as the meaning of the compound word can be inferred from its constituents. For example, the endocentric compound *bookshop* in English. The meaning is related to its constituents, or the meaning can be deciphered easily by the hearer from its constituent’s *book* and *shop*. Contrary to this, exocentric compounds are considered semantically non-transparent or opaque, because there is no semantic relation between the constituents and the entire word. For example, *blockhead* means a stupid person. The meaning of its constituents’ *block* and *head* does not correlate with the meaning of the word directly.

Regarding semantic transparency in affixation, let us look into the three principles mentioned by Arista and Escarza (2016). These three principles say:

STP 1: The attachment of an affix significantly modifies the meaning of the base of derivation.

STP 2: An affix performs one and the same lexical function in all the derivatives to which it is attached.

STP 3: A lexical function is performed by one and the same affix in all the derivatives where it applies.

These three principals have emphasised the idea that to be semantically transparent, an affix must adhere to meaning consistency. It should be consistent in defining its function or in adding meaning to a base in all the derivatives it applies to. Seuren and Wekka (1986) say that “Intuitively speaking, [semantic transparency] can be seen as a property of enabling listeners to carry out semantic interpretation with the least possible machinery and with the least possible requirements regarding language learning.” If this is the case, then semantic transparency in affixation refers to the meaning of consistency of an affix in all the derivatives which are formed by that affix. That means such affixes must have meaning predictability. Therefore, one can

easily predict in what type of bases that affix is attached, or what meaning it can imply if it is attached to an unknown base. For example, *-ness* in English forms abstract nouns from adjectives, e.g., kindness, unpleasantness, freshness, etc. From this, we can understand that it implies an attribute or a state of being. Now if one encounters *-ness* with a new base, then also s/he would be able to grasp an idea of the meaning the new word conveys. Therefore, from this angle, we can say that the *-ness* keeps semantic transparency while attaching to a base. Again, another view of semantic transparency says that if the meaning of the base readily reflects on the derived word as well or the meaning of the base can be traced in the derived word, then it can be said that it is semantically transparent. (Hay 2001).

Turning to productivity again, we know that language as a means of communication separates human beings from animals. Human beings are facilitated with a limited number of linguistic symbols from which they have to generate various linguistic expressions to convey their thoughts. Hockett (1960) defines this characteristic of language as productivity and labels it as one of the design features of languages. It is considered a fundamental characteristic of language which separates human language from the language of the animal. Productivity, from a linguistic point of view, refers to the unlimited use of language in innovative ways. It is possible to get an infinite number of outputs from a finite number of inputs (Hockett, 1960). This is the reason people can produce sentences or words they have never heard before. Bauer (2002) says that “The language system or grammar that describes that language system is productive because, and to the extent that, the individual processes involved in the system and described in the grammar are themselves productive”. Language is said to be productive because of the presence of productive processes in language.

As a component of language, the reflection of productivity can be observed at the morphological level. When talked about morphological productivity, it correlates with the mechanisms of forming words by different morphological or word-formation processes. Bauer (2002) states that “within morphology, the important discussions of productivity are individual ways of making words”. Some morphological or word-formation processes are more productive than others. Affixation is an integral part of the morphological process, which can yield several insights in terms of productivity. From this perspective, morphological productivity is the capacity of morphemes to produce new words or word forms. As Plag (1999) argues, “Having scrutinized the different criteria put forward in standard definitions of productivity, it can be stated that this notion boils down to the property of a given word-formation process or affix to be used to derive a new word in a systematic fashion.” The productivity of a morpheme implies how often a morpheme is used in a language. If it is productive, then it can be applied naturally in forming new words. New complex words are created by productive morphemes.

1.1 Semantic Transparency, Phonological Transparency and Productivity

A lot of research has been done on semantic transparency and its relationship with the decomposition of word forms as well as productivity (Baayen 1992, 1994; Bybee 1988, 1995a; Plag 2004; Hay 2001). Some researchers have examined the relationship between semantic transparency and productivity (Hay 2001; Plag 2004). In the discussions of semantic transparency, some argue that noncompositionality of derived forms leads to opacity, and hence such forms appear to be less productive and vice versa.

When talked about decomposition of words, it refers to the process through which a word can be segmented into its smaller parts. Some words can be easily broken down or segmented, while some others are not. For example, *kindness* can be segmented more easily into its base *kind* and suffix *-ness* than the word *business*. Hence, the decompositionality of *kindness* is more than *business*. The meaning of the base readily reflects in the derived word *kindness*, unlike *business*. From this, it was opined that semantic transparency is more in decomposable derived words.

Again, it is found particularly after studying the case of *-ness* and *-ity* (Aronoff and Schvaneveldt 1978; Cutler 1980) that the words which are formed by word boundary affixes are more productive than the words that are formed by formative boundary affixes. Cutler (1980) says that *-ness* derivatives which are more productive than the *-ity* derivatives are found more phonologically transparent, as it is a word-boundary affix.

Although we could not find a direct statement regarding the direct connection between semantic transparency and phonological transparency in literature, however, in the discussion of semantic transparency it is assumed that phonological transparency is also closely related with it. In morphological processing of decomposition model, discussion of decomposition comes down to the decomposition of words in the forms of phonotactic only.

Cutler (1980) further says that speakers prefer word boundary affixes over the formative boundary affixes for their transparency, i.e., the speakers want to offer an unchanged base, for it is easier to grasp the meaning of the newly derived words.

All these show that an unchanged base (i.e., without phonetic transformation at the boundary) helps the hearer to grasp the meaning of the newly derived words by tracing the meaning from the base. If there is any phonotactic or phonetic change on the base, in the case of nonce-formations, the hearers find it difficult to decipher the meaning as the base word is not visible to them.

Therefore, it shows that semantic transparency and phonological transparency are related to each other in the sense that the more phonological transparent it is, the more semantically transparent it becomes and vice versa. It also influences productivity in the same way.

However, most of these discussions are found in the English language, we are yet to explore this phenomenon in the languages of the other families too. In Assamese, the number of formative boundary affixes is relatively high, only a few formative boundary affixes exist and therefore, it may not always turn out that the phonological opacity means semantic opacity as well.

1.2 Research Questions

It is assumed in the discussion of semantic transparency and productivity that semantic transparency and phonological transparency are closely related to each other in influencing productivity. The research question here is “How is semantic transparency influenced by phonological transparency relevant in influencing the phenomenon of productivity in Assamese?”

2. Aims and Objective

This paper tries to examine the role of semantic transparency in morphological processing in the Assamese language. While semantic transparency is often tested in psycholinguistic experiments or theories, morphological productivity is the central issue in the study of word-formation in the morphological study. The study on the relation between these two is not exhaustive in literature though. This paper aims to discuss about the relationship between these two aspects of language while examining the influence of phonological transparency on semantic transparency in the Assamese derivational word formation process.

It explores primarily how semantic transparency is realized in Assamese affixation and how it marks an impact on productivity. However, the aim of the paper is neither to propose a measuring method nor any theory for semantic transparency and morphological productivity. As the nature of the study is qualitative, it also does not aim to measure the rates of semantic transparency as well as productivity. It only describes how these phenomena are realized in the language as well as the relation between the two.

3. Data

The example words mentioned in this paper are collected from a prominent Assamese dictionary *Hemkosh* (ed. 2016). Judgments of a few speakers are taken into consideration while investigating the transparency of meaning in affixation and preference of affixes for word-formation.

4. Discussion

Affixes are generally divided into two categories, word-boundary affixes and formative boundary affixes (Chomsky and Halle, 1968). Cutler (1980, 1981) discusses that as word boundary affixes are phonologically transparent, speakers frequently choose word-boundary affixes over formative boundary affixes in new word-formation. She states, “In other words, in choosing neologisms formed with word boundary affixes, subjects in this study were expressing a preference for derived words which were closer to their base words over those which were phonologically further away”. This way, word-formative affixes turn out to be more productive than the formative boundary affixes. Although Cutler has not specifically mentioned about semantic transparency here, but the study hints that the case of semantic transparency is intertwined with phonological transparency so far. The more phonologically transparent forms tend to be more semantically transparent, as the speaker’s preference shows a cognitive understanding of the meaning of the affix behind it. For an affix, if the base word as well as the affix has to undergo phonetic changes (in formative boundary), speakers show less preference for the same because it requires more effort to understand its usage and its meaning. In Assamese, however, we cannot declare that a particular affix is either phonologically transparent or phonologically non-transparent in isolation, i.e., we cannot say whether it is a formative boundary affix or a word boundary affix if it is not attached to any bases. Like in English, where *-ness* is always phonologically transparent irrespective of the base, in Assamese, phonological transparency differs with bases. An affix may be transparent with some bases, while it may not be with other. That means an affix can be a word boundary affix with certain bases, while it can be a formative boundary affix with some others. For example,

(i) Word-boundary forms

a. *ɔŋkurək* ‘shelter, nest’ (P. 3)

ɔŋkur+ək

sprout+N

c. *ɔntərək* ‘insulator’ (P. 65)

ɔntər+ək

midst+N

e. *kʰundɔna* ‘Mortar’ (P. 387)

kʰund +ɔna

to clash+N

b. *ɔpəkərək* ‘non-harmful’ (P. 70)

ɔ +ɔpəkər+ək

Pre+harm +N

d. *ɔŋkurən* ‘Process of sprouting’ (P. 3)

ɔŋkur +ən

A shoot+N

(ii) Formative boundary forms

a. *ɔŋgɔrɔikʰjək* ‘bodyguard’ (P. 8)

ɔŋgɔ+rɔikʰja +ək

organ+guarding+N

c. *dɔrxək* ‘a spectator’ (P. 665)

b. *dɔrpək* ‘Cupid’ (P. 665)

drip +ək

pride+N

d. *ɔkulən* ‘inadequate’ (P. 11)

drix+ɔk
see +N

ɔ +kula +ɔn
Pre+suffice+Adj

e. *ɔwɔxoxɔn* ‘descent’ (P. 106)
ɔwɔ+xoh +ɔn
Pre +absorb+N

f. *sepena* ‘forceps’ (P. 510)
sep +ɔna
To squeeze+N

g. *kekɔni* ‘A groan’ (P. 343)
keka+ɔni
groan+N

h. *ad^hɔrua* ‘incomplete’ (P. 148)
ad^ha+ɔrua
half +Adj

i. *guwal* ‘milkman’ (P. 443)
Go +al
cow+N

-*ɔk* is phonologically transparent in examples (i), whereas it is phonologically non-transparent in the examples (ii), because it has undergone morpho-phonemic changes at the boundary unlike (i). Similarly, we can observe this instance with -*ɔn* and -*ɔna*.

One point needs to be mentioned here that most of the Indo-Aryan languages suffer morphophonemic changes in more or less manner in affixation not only on the boundary but also it may occur at any part of the word. Only a few affixes, the majority of which are prefixes have word boundary forms. For example,

(iii)

a. *nijamɔk* ‘who makes rules’ (P. 757)
nijɔm+ɔk
rule +N

b. *pat^hɔk* ‘a reader’ (P. 816)
pat^h+ɔk
read+ N

c. *asarɔn* ‘behaviour’ (P. 137)
asar +ɔn
behavior+N

d. *krɔndɔn* ‘cry’ (P. 361)
krɔd+ɔn
cry +N

Viewing the nature of morphophonemic changes in Assamese, linguists have listed their systemic changes that occur at the boundaries this way (Morol 1974; Bora 2009; Bora 2015; Deka 2015; Deka & Deka 2009; Hakacham 2015; Goswami 1981; Goswami 2000):

a) /ɔ-/ and /-ɔ/ becomes /a/ together.

i. *sɔr +ɔsɔr = sɔrasɔr*
move+fixed = cosmos

- ii. *debɔ+ɔxur =debaxur*
god +demon= god and demon
- b) /ɔ-/ and /-a/ merge to form /a/ together.
- i. *him +alɔi =himalɔi*
snow +home= Himalaya
- ii. *bhɔi+atur =bhɔjatur*
fear+anxious=fearful
- c) /a-/ and /-ɔ/ become /e/ together
- i. *axa + ɔtit = axatit*
hope + past = hopeless
- ii. *xima + ɔntɔ = ximantɔ*
border + end = border
- d) /a-/ and /-a/ becomes /e/ together
- i. *bidja + alɔi = bidjalɔi*
education+ home = school
- ii. *xɔda + anɔndɔ = xɔdanɔndɔ*
Always + happy = Always happy
- e) /ɔ/ and /i/ becomes /e/ together.
- i. *debɔ+indrɔ=debendrɔ*
god+Indra =Indra (name of a Hindu God)
- ii. *pɔrɔmɔ+iswɔr =pɔrɔmeswɔr*
great+God = God
- f) /a/ and /i/ becomes /e/ together
- i. *zɔtha+isthɔ =zɔt^hesthɔ*
like+ many= Ample
- ii. *mɔha+iswɔr=mɔheswɔr*
great+God = Lord Siva
- g) /ɔ/ and /u/ merge to form /u/ together.
- i. *sɔndrɔ+udɔi= sɔndrudɔi*
moon+risen = Rising moon
- ii. *kal + usit = kalosit*
time+ appropriate= timely

We see that in Assamese, phonological transparency of an affix depends on the bases where it applies to. In English, we can draw an equation among phonological transparency, semantic transparency, and productivity. To be semantically transparent, an affix may require phonological transparency (e.g. *-ness*), which ultimately leads to productivity of an affix. However, in Assamese, semantic transparency does not depend much on phonological transparency because an affix is not consistent in terms of phonological transparency (e.g. *-ɔk*) most of the time. It means there is not a one-to-one correlation between semantic transparency and phonological transparency in Assamese, the level of complicity in semantic transparency depends on the speaker's ability to identify (comprehensibility) the base and affix. Therefore, the criteria of semantic transparency determined by phonological transparency is not applicable in assessing productivity of an affix in Assamese.

It is also found that many bases of Assamese have suffered language change across time or they are accommodated in the language from other languages with time. However, such words appear to be semantically less transparent if not non-transparent or opaque completely because of their non-independent bases only, not for the affixes. Most of the time, the bases of such words are not used independently, and their presence can be realized or observed only in an attached form. They certainly have a meaning which is not identifiable at the surface level. Even if their meaning is graspable, they are not used frequently at the other place in the language or they cannot stand alone. For example,¹

(iv)

a. *ɔd^hiropɔn* 'Transplanting' (P. 41)

ɔd^hi+ruh+ɔn

Pre+to germinate+N

b. *ɔd^hɔhk^hjepɔn* 'Throwing downwards' (P. 41)

ɔd^hɔh+k^hjip+ɔn

Pre +throw+N

c. *ɔɔni* 'A flint and steel for striking fire' (P. 96)

ri +ɔni

Movement+N

d. *dɔrpɔk* 'cupid' (P. 665)

dri +ɔk

Pride+N

e) *dɔrxɔk* 'on-looker' (P. 665)

drix+ɔk

See+N

f. *uddipɔk* 'Provocative' (P. 205)

ut+dip+ɔk

Pre+light+N

g. *akramɔk* 'aggressive' (P. 131)

a+krɔm+ɔk

Pre+move+Adj

h. *udb^hawɔk* 'inventor' (P. 207)

ut+b^hu +ɔk

Pre+happen+N

¹ Linguists and grammarians often consider that the source of these bases are mostly found in Sanskrit.

i. *pərikəlpək* (P. 799)
Pəri+krip +ək
Pre+imagination+N

j. *ussarən* ‘Pronunciation’ (P. 195)
Ut+sər +ən
Pre+move+N

k. *gap^hiləti* ‘carelessness’ (P. 418)
gap^hil +əti
careless +əti

Again, there are some affixes in the language which get attached only to the bases that cannot stand alone (most of them are from other language or that have gone through language changes), however, these affixes can hardly be found in other places unlike (iv). (Although in the above-mentioned examples in (iv), affixes are attached to non-independent bases, the same affixes may also be found with independent bases as well). They show less productivity in word-formation, as these are semantically non-transparent. It appears semantically non-transparent, because to form new words by these affixes, speakers find difficulty in choosing the appropriate bases, as non-independent bases like these are not used in ordinary context for which they are not confident about the meaning or usage of those bases. In this situation, they do not naturally opt for such affixes to avoid discrepancy. For example, *ut-* in *utpadən* ‘production’, *utxahi* ‘enthusiastic’; *xəm-* in *xəmb^həb* ‘possible’, *xəmbərd^həna* ‘felicitate’ etc. However, the number of such affixes is not very huge in the language.

On the other hand, many other affixes take both independent and non-independent bases during attestation (See examples (i), (ii) and (iv)). Therefore, it cannot be generalized about the semantic transparency of these affixes based on the bases it takes. Sometimes speakers are not even aware of the presence of such affixes and view such words as non-affixed lexicalised form. In this situation, till a particular affix can form words for independent bases, the presence of words formed with non-independent bases should not affect the productivity of these affixes.

Affixes of Assamese display different functions and patterns of addition with bases. Sometimes it is difficult to identify whether it should be considered as homophonous morpheme or the same affix having several functions. However, it is preferred to consider the later on the ground that meaning or the function is not completely out of the context or unrelatable although they have considerable differences. For example,

(v) –i

a. *rini* ‘Debted’ (P. 223)
rin +i
Debt+adj

b. *ekəb^haxi* ‘Monolingual’ (P. 228)
ekə+b^hax +i
one+language+N

c. *Pahi* ‘A petal of flower’ (P. 829)

pah +i
Petal+N

e. *agjabadi* ‘agnostic’ (P. 139)

agjabad +i
Agnosticism +Adj

g. *ɔnubadi* ‘Translator’ (P. 59)

ɔnubad +i
Translate+i

i. *bibeki* ‘Conscientious’ (P. 968)

bibek+i
inwit+Adj

k. *bahi* ‘A flute’ (P. 953)

bah +i
bamboo+N

(vi) -ual

a. *dɔtowel* ‘full of teeth’ (P. 660)
379)

dat +ual
teenth+Adj

c. *g^hatowel* ‘A ferryman’ (P. 455)

g^hat+ual
port+N

(vii) -aru

a. *dubaru* ‘A diver’ (P. 609)

dub+aru
sink+N

(viii) -ɔrua

a. *ad^hɔrua* ‘Half-done’ (P. 148)

ad^ha+ɔrua

d. *ɔkɔni* ‘An affectionate term for addressing children’ (P. 8)

ɔkɔn+i
little+i

f. *atjutxahi* ‘over-interested’ (P. 34)

atjutxah +i
Over interested+Adj

h. *ɔpɔkari* ‘Harmful’ (P. 70)

ɔpɔkar+i
Harm +i

j. *bɔhupɔdi* ‘Polynominal’ (P. 930)

bɔhu+pɔd+i
many+leg+Adj

l. *bandɔri* ‘Female monkey’ (P. 944)

bandɔr +i
monkey+N

b. *k^hatowel* ‘One occupying *khat*’ (P.

k^hat+ual
land+N

b. *zikaru* ‘A conqueror’ (P. 556)

zik+aru
Win+N

b. *batɔrua* ‘walker’ (P. 939)

bat+ɔrua

c. *hatɔrua* ‘Relating to a market’ (P. 1367)

hat +*ɔrua*

Market+Adj

It is observed that affixes with multiple meanings or functions, however, lack meaning consistency, while affixes with only one or two meanings or functions remain consistent in meaning delivery. For example, *-i* (v) follows several patterns of changes or projects several functions or meanings while the other suffixes ((vi)-(viii)) display limited patterns or functions. We see *-i* has been added to different bases as nominal suffix (agent noun, action noun, abstract noun), adjectival suffix, feminine suffix, diminutive suffix. It also works as a pleonastic morpheme with some bases. It can be added to noun, verb and adjective bases to form new words. Whereas suffixes like *-ual* (vi a-c) can be used only as denominal noun suffix and denominal adjective suffix, *-aru* (vii a-b) is used as deverbial agentive noun, *-ɔrua* (viii a-c) is used as a noun adjective denoting the sense or entity ‘related to’. Looking into semantic transparency, affixes like *-ual*, *-aru*, *-ɔrua* have limited usage which suggests that they have more meaning consistency than that of *-i*, which is far more dynamic in terms of meaning and pattern. Therefore, it is seen that as suffixes like *-i* is more dynamic and has several patterns, they lack semantic consistency, hence semantic transparency too unlike others. Speakers’ manner of selection proves that they take less time to identify the meaning of a given word which is formed by a suffix that retain meaning consistency i.e., more semantically transparent. But it might be the opposite in creating new words for a given base by choosing a suffix on their own which is explained in the following paragraph.

Although meaning consistency has a positive effect on semantic transparency, suffixes and prefixes behave differently in terms of productivity. Meaning consistency results in more semantic transparency; it, however, may not be a positive factor, particularly for suffixes in terms of productivity. Suffixes showing several patterns of changes or functions (e.g. *-i*) tend to be more productive than others as it is evident from the significant number of words found in the written corpora as well as day-to-day speech pattern. The suffix *-i* is undoubtedly turns out as the most used suffix for forming words in the language. It hints that productivity might be more for suffixes that have less meaning consistency and wider usages. One of the reasons behind this is that such suffixes have fewer restrictions in forming words because of which the speakers get more options or choices to pick up a suffix to form a word without much risk of getting an ‘awkward’ expression, rather than putting effort in choosing a suffix for a particular base keeping in mind the criteria it has to meet.

On the other hand, the picture is quite opposite for prefix. Prefixes with meaning consistency i.e., which are more transparent display more productivity than other prefixes. The reason is not very difficult to grasp, as prefix basically shows semantic relevance or their function is primarily of semantic, the correlation between meaning consistency and productivity, hence, go hand in hand.

Affixes are mono-morphemic (e.g. *-i*, *-aru*, *-ɔk*, *xu-*, *xɔ-* etc.) as well as multi-morphemic (e.g., *-ɔnia* (*ɔn+ia*), *-ual* (*u+al*) etc.) The etymological trace shows that sometimes many multi-morphemic suffixes are an extended form of other suffixes or a combination of two or more suffixes (Kakati, 1941). Again, some mono-morphemic suffixes are also reduced form of other suffixes (Kakati, 1941). It is again seen that affixes that carry multiple-meanings often turn out as mono-morphemic and vice versa. If this is the case, mono-morphemic suffixes show meaning consistency, as they generally project multiple-meanings or functions. On the other hand, multi-morphemic suffixes have more meaning consistency than mono-morphemic ones. In case of productivity, as stated above, mono-morphemic suffixes like *-i* are more productive than multi-morphemic suffixes like *-ual*, *-ɔrua*, etc. However, at the end, it has to be admitted that no phenomenon is absolute and cannot be divided always into binary sections as they always leave a grey area for exceptions.

5. Conclusion

It has already been mentioned at the beginning that in this study no measuring methods have been applied to examine this phenomenon quantitatively, it is only an indication of how semantic transparency is realized in Assamese affixation and how it may influence their productivity. Lack of availability of full-fledged resources in digital form (dictionaries and corpus) has limited an extensive quantitative study. The word-list that has been prepared from the dictionary takes a real amount of time, as it is completely done manually and therefore cannot be guaranteed the absence of flaws in the process. Whatsoever, the paper has tried to highlight the nature of semantic transparency as well as its probable impact on productivity in the Assamese affixation.

Summarizing the findings:

Firstly, we see that the criteria of semantic transparency brought by phonological transparency in affixation is not always applicable in assessing productivity of an affix in Assamese ((i), (ii)).

Secondly, some affixes like *ut-* and *xɔm-*, take only non-independent bases, meanings of which are non-transparent. These types of affixes are hardly observed in new word-formation in

the language. Non-independent bases with non-occurring affixes (affixes that do not occur with independent bases) are less productive in the language.

On the other hand, the majority of affixes have words with independent (-ɔk, -ɔn, -ɔni in examples (i) and (ii)) as well as non-independent (ɔk, -ɔn, -ɔni in examples (iv)) bases, of which, the meaning is less vivid for the words having non-independent bases. But in terms of productivity of such affixes, we cannot generalize about it merely by looking into semantic transparency, as such affixes do not only have words with non-independent bases, they also have words with independent bases. However, speakers tend to choose independent bases in new word-formation by these affixes.

Thirdly, the affixes of varied functions or meaning and dynamic pattern of changes lack meaning consistency (Examples (v)), thus also lack semantic transparency, whereas affixes having a limited function or fewer patterns (examples vi-viii) retain meaning consistency and they are semantically transparent. However, in this case, productivity does not go along with semantic transparency for suffixes. Instead, suffixes of multiple meaning or pattern of changes (examples v), that are semantically less transparent, are more productive than the suffixes having less function or variety of meaning (examples 6-8). The reason behind this can be explained this way that while forming new words, speakers take resort to the kind of suffixes that project minimal criteria because of which they are more dynamic than others to avoid discrepancies.

Fourthly, morphophonemic affixes that are not extensions of other affixes or which are of the diminutive form (example (v)) appear to be more dynamic in terms of meaning and pattern of changes than some of the multi-morphemic (examples (vi)-(viii)) affixes with constrained meaning or pattern of changes. That is, the first one is less transparent semantically due to its less meaning consistency and the later is more semantically transparent as they have more meaning consistency. The nature of productivity in this respect is already explained in the previous context.

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