

## RESEARCH ARTICLE

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# Speech-Language Pathologist's Pattern of Practice in the Rehabilitation of Head and Neck Cancer patients across Hospitals in India

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## Abstract

**Objective:** India has a significant burden of Head and Neck cancer (HNC) patients. Patients afflicted with HNC often encounter difficulties in speech, voice, and swallowing, either due to the disease itself or the treatment they receive. The rehabilitation of HNC patients is crucial, and Speech and Language Pathologists (SLPs) have a significant role in it. The current study aimed to understand the practices followed by SLPs in India while rehabilitating HNC patients. **Methods:** A questionnaire was developed and validated by five Speech-language pathologists, before circulation as an E-survey. The target participants were SLPs working in hospitals across India. The final online version of the questionnaire remained open for eight weeks. **Result:** A total of 75 Hospital-based SLPs working in India participated in the survey. The responses depict notable trends and differences in the assessment and management approaches. HNC patients who had undergone surgery were more likely to be referred for rehabilitation than those who received non-surgical treatments. Only 36% of the SLPs reported getting pre-operative referrals for HNC patients. The time point for initial assessment and intervention, as well as the protocols used, varied across different hospitals. About 50% of participants had instrumental swallow evaluation facilities in their hospitals, and the majority of hospitals only used instrumental swallow evaluation for 1-3 assessments per week. **Conclusion:** Variability exists in several aspects of SLP practice for HNC patients offered across Hospitals in India. All HNC patients do not get access to speech-language pathology services. Developing standardized protocols towards early evaluation, intervention and enhancing compliance could improve SLP-led rehabilitation of HNC patients in India.

**Keywords:** Head and Neck Cancer- rehabilitation- dysphagia- voice problems- speech and swallow

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## Introduction

In India, one in nine individuals are at risk of developing cancer during their lifetime [1]. Head and neck cancer (HNC) accounts for 26% of cancer cases in males and 8% in females [2]. Patients may experience speech, voice, and swallowing difficulties as a symptom of the disease or resultant effect of treatment. Cancer management options are surgery, radiation therapy, and chemotherapy [3]. However, surgery of the oral, pharyngeal, and laryngeal regions can affect speech and swallowing, while radiation therapy can cause xerostomia, mucositis, trismus, and pain [4]. Due to these reasons, speech-language pathologists (SLPs) play an essential role in the patient care pathway of HNC management. Countries such as the United Kingdom [5] and the United

States of America [6] have specified guidelines on the role of SLPs in managing HNC. There have been efforts to evaluate the standards of SLP rehabilitation for HNC patients in Australia [7], especially in rural areas [8], after which there have been collective efforts to improve the service delivery [9, 10].

Though recent studies from India have surveyed Speech-language pathologists, they have been restricted to the assessment and management patterns of dysphagia in general and not specially HNC patients [11, 12]. As there are no national guidelines in place, institutions and clinicians have to rely on creating their own protocols. With this study, we aimed to gain insight into the practice patterns of SLPs working with HNC patients and to understand the trends in service delivery nationwide.

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## Materials and Methods

### Development of Survey Instrument

For the study, a questionnaire was created with multiple domains that included both closed-ended and open-ended questions, utilizing skip logic. The questions on swallowing were based on the research done by Roe et al., [13] and Krisciunas et al., [14] after receiving prior permission from both authors. The questionnaire was initially content validated by five speech-language pathologists (SLPs) who had over five years of experience in HNC rehabilitation. The questions were then revised based on expert feedback, and the final version was pilot tested on three SLPs who worked with HNC patients. Since no further adjustments were proposed, this version of the questionnaire was approved for the study. (Supplementary-Material.1).

### Participants and Data Collection

The participants in this study were SLPs working in hospitals across India. The survey was made available online through Google forms and distributed via email with information about the study's purpose, inclusion criteria, and contact information for any questions. The first page of the electronic survey provided written consent options and the choice to decline participation. Only those who gave consent were able to access and complete the subsequent pages. The link for participation was also shared on social networking groups of Indian SLPs. Persons who were contacted by email were sent a reminder after two weeks. Snowball sampling was also done by contacting the SLPs who had already participated in the survey.

### Statistical Analysis

Descriptive statistics were used to analyze the closed-ended questions. Graphical and tabular presentations were used to summarize the data. Open-ended questions were analyzed using content analysis. Responses about intervention approaches were analyzed using deductive content analysis. The structure of the analysis was operationalized, coded, and allocated [15]. Other free-text answers were deduced using inductive content analysis to incept themes from the data [15].

## Results

The contact information of Speech-Language Pathologists was collected from the websites of various teaching and non-teaching hospitals located in different states of India. The survey link was then personally shared via email (n=211) and WhatsApp (n=89). Additionally, profiles of hospital based SLPs employed in India were searched on LinkedIn, and the survey link was messaged to them (n=198). The survey remained open for participation for eight weeks, from mid-April 2021 to mid-June 2021. A total of 76 Speech-language pathologists participated in the study with informed consent. Seventy-five responses were considered for analysis after excluding the responses of an SLP practicing outside India.

### Demographic details and clinician-related questions

As shown in Table 1, most of the respondents had post-graduate qualifications in their specialty and had "one to four years" of experience working with HNC patients.

Table 1. Demographic and SLP Related Details of Practice among the Participants (n=75)

Demographic Details	% (n)
Gender	
Female	78.7% (59)
Male	21.3% (16)
Educational Qualification	
Undergraduate	14.7% (11)
Postgraduate	81.3% (61)
Ph.D.	4% (3)
Years of experience working with HNC patients	
Less than a year	24% (18)
1 to 4 years	54.7% (41)
5 to 10 years	12% (9)
More than 10 years	9.3% (7)
Type of Hospital	
Academic Teaching Hospital	48% (36)
Stand-alone specialized cancer center	10.7% (8)
Urban or suburban Non-teaching Hospital	40% (30)
Rural Hospital	1.3% (1)
New referrals per annum	
0-25	33.3% (25)
25-50	28% (21)
50-75	5.3% (4)
75-100	8% (6)
100-125	5.3% (4)
125-150	2.7% (2)
Above 150	17.3% (13)
Location of workplace (State)	
Karnataka	41.3% (31)
Maharashtra	14.7% (11)
Kerala	10.6% (8)
Tamil Nadu	9.3% (7)
Delhi	5.3% (4)
West Bengal	4% (3)
Telangana	4% (3)
Punjab	2.7% (2)
Uttar Pradesh	1.3% (1)
Rajasthan	1.3% (1)
Odisha	1.3% (1)
Haryana	1.3% (1)
Gujarat	1.3% (1)
Assam	1.3% (1)
Additional certification or training	38.67% (29)
Fiberoptic endoscopic evaluation of swallowing (FEES)	48.2% (14)
Modified Barium Swallow Impairment Profile (MB-SImP)	10.3% (3)
Laryngectomy rehabilitation	13.8% (4)
Fellowship program in speech and swallowing disorders	10.3% (3)
Observer program in a cancer center	10.3% (3)
Post-graduate program in Deglutology	6.9% (2)

Table 2. Swallowing Interventions that were Usually Given by the SLPs Derived from the Free-Text Responses

Themes	Respondents mentioning this theme n (%)
Swallow Maneuvers	48 (64%)
Postural Modifications	42 (56%)
Airway protection Maneuvers	27 (36%)
Range of Motion exercises	19 (25.3%)
Consistency Modifications	15 (20%)
Oral Stimulation	4 (5.3%)
Pitch Glides	1 (1.3%)

Twenty- nine SLPs indicated that they had completed a certificate course or additional training.

#### Hospital services and referral policy

The data reveals that the largest proportion of respondents (48%, n=36) were employed in Academic Teaching Hospitals. Furthermore, the survey reports that 17.3% (n=13) of the SLPs had a referral rate of over 150 new HNC patients per year, while the majority (33.3%; n=25) indicated a yearly caseload of 0-25 patients. The detailed responses are reported in Table 1.

It was found that there were not many speech-language pathologists (SLPs) working in hospitals with a consistent policy for referring head and neck cancer patients to SLPs. The majority of cases (72%; n=54) were referred on a case-by-case basis at the discretion of the referring doctor for speech, voice, or swallowing issues. Only 11% (n=8) of SLPs reported routinely referring all HNC patients, while 13 SLPs were part of a multidisciplinary oncology team.

Table 3. Reasons for Poor Compliance to Speech and Swallow Therapy Derived from Free Text Responses

Themes	Respondents mentioning this theme n (%)
Low Patient motivation	29 (38.6%)
Treatment side effects-Pain, Mucositis	26 (34.6%)
Poor follow up	10 (13.3%)
Lack of awareness	10 (13.3%)
Travel distance	7 (9.3%)
Lack of family support	6 (8%)
Financial issues	4 (5.3%)

A multi-answer question asked which professionals refer head and neck cancer patients to the SLP. The results indicated that surgeons, particularly onco-surgeons and Ear, Nose, and Throat (ENT) surgeons, made the most referrals among all specialties, with a percentage of 78.7% (n=59) for each. Medical oncologists followed with a percentage of 60% (n=45), radiation oncologists with 54.7% (n=41), and general physicians with 40% (n=30).

Sixty out of the seventy-five participants stated that most of their HNC patients were those who underwent surgery as their main treatment. Referrals were mainly given after the surgery, with only 27 participants (36%) reporting receiving pre-operative referrals. The time for the initial access to the SLP after surgery varied greatly across different clinical settings. Thirty-two speech language pathologists received patient referrals within the first week following surgery, while 10 received referrals two weeks after surgery, and 3 received referrals one-month post-surgery. Forty percent of the SLPs received referrals during follow-up visits with the surgeon.

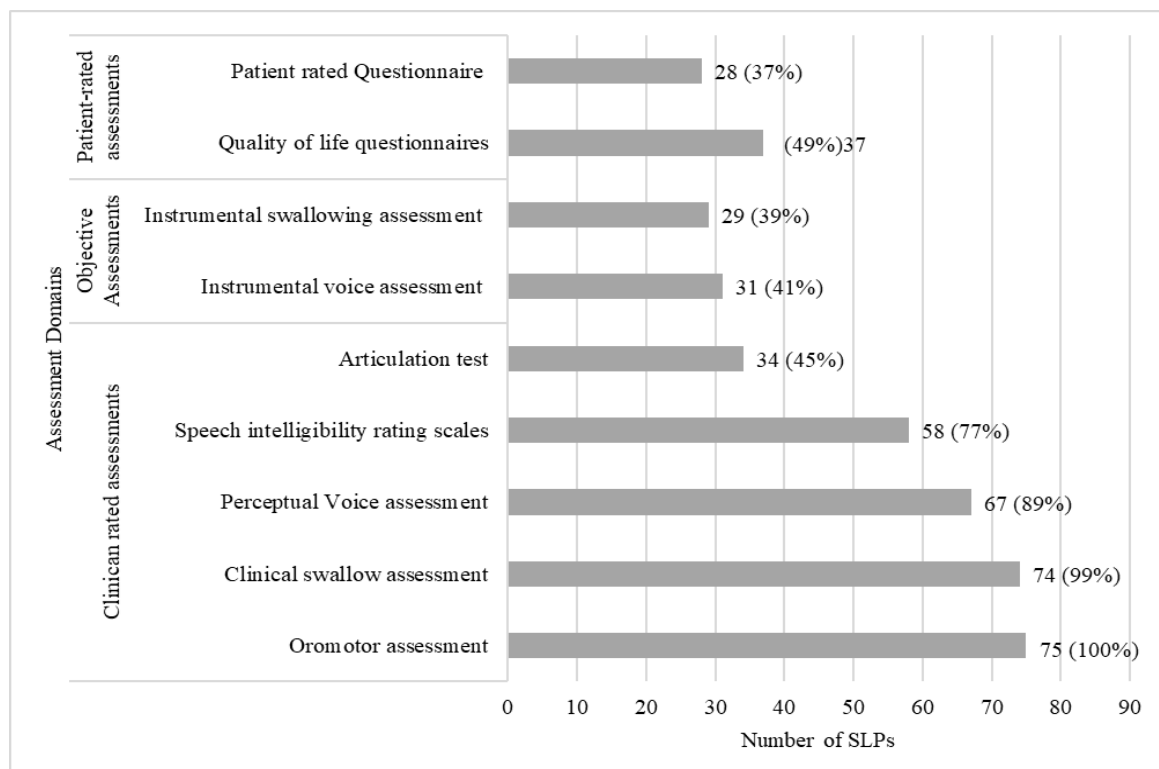


Figure 1. Components of assessment Battery and SLPs Usage Percentages

According to the responses of the SLPs, their HNC caseload comprised mainly of patients who had undergone glossectomy (n=29) and laryngectomy (n=22).

Additionally, 34.7% (n=26) of SLPs revealed that they did not receive any referrals for patients undergoing organ preservation protocols. Moreover, out of the 49 individuals who received referrals, the timing of referrals was inconsistent. Only thirteen SLPs indicated that patients are referred to them before or during radiation therapy, regardless of the presence of dysphagia. Conversely, 17 participants reported that only patients with swallowing difficulties are referred to them. Most responses (32.7%, n=16) suggested that patients are referred on a “case-to-case referral basis,” depending on the judgement of the referring physician. Only one speech language pathologist (SLP) reported routinely assessing all HNC patients who underwent radiation therapy after the completion of treatment, while two SLPs mentioned conducting assessments during follow-up visits post-completion of radiation therapy.

#### *Assessment procedures followed in different centers*

The survey participants were asked about the components of their patient assessment. Figure 1 illustrates the assessment domains and proportion of SLPs who incorporate them into their assessment protocol. The following instruments were reportedly used for evaluation: Fiberoptic endoscopic evaluation of swallowing (FEES) (n=43); Videofluoroscopic Swallow Study (VFSS) (n=37); Stroboscopy (n=39); Computerized Speech Lab (CSL™) (n=24); VAGHMI (n=27); Dr Speech (n=24); Nasometer (n=18); sEMG (n=13); Digital swallow station (n=4).

It is noteworthy that, only Forty-three SLPs had access to Fiberoptic endoscopic evaluation of swallowing (FEES), and 37 SLPs reported having a Videofluoroscopic Swallow Study (VFSS) facility. According to the results, 29 SLPs carried out FEES and VFSS assessments on “1 to 3 patients weekly”. Additionally, 5 and 9 SLPs reported weekly assessments on “4 to 6” patients for VFSS and FEES, respectively. Two SLPs carried out “7 to 10 assessments per week” for FEES, while one SLP did the same for VFSS. Higher usage of instrumental swallow assessment of more than 10 cases a week was reported by 2 SLPs for VFSS and 3 SLPs for FEES.

Twenty-six SLPs routinely assessed olfactory skills, while thirty-four SLPs reportedly performed gustatory assessment. The results showed that most SLPs used informal methods to assess their patients. These methods often involved asking patients to describe their self-perception of taste (11 responses) and smell (17 responses). Other SLPs used different stimuli to evaluate patients, such as asking them to rate the intensity of taste (19 responses) and smell (8 responses). According to free-text responses, the items utilized to informally assess taste included citrus fruits like lemon and orange, as well as honey, sugar, salt, sour candy, and biscuits. Similarly, the items used to informally assess smell reportedly included coffee, oranges, perfumes, and sanitizer.

According to responses, four SLPs used different tools for assessing taste, including a self-developed taste

assessment kit (n=1), a patient-reported checklist (n=1), the EORTC QLQ H&N35 (n=1), and the Nair Hospital Swallowing Assessment Scale (n=1). Additionally, one participant evaluated smell using a self-developed olfactory assessment kit.

#### *Usual Practices of Intervention*

In the survey, free text options were provided to describe the intervention approaches employed by the SLPs to improve speech, voice and swallowing skills. The approaches and the proportion of survey respondents that mentioned each approach are listed below.

To improve speech, Oromotor exercises were the most favored method (n=26). Additionally, other techniques such as articulatory drills (n=9), open mouth approach (n=6), exaggerated articulation (n=2), rate reduction (n=2), sensory stimulation (n=2), compensatory articulation (n=2), and reading aloud (n=1) were reportedly used to a lesser extent.

The following voice therapy techniques were recommended: Relaxation exercises (n=30); Vocal Function exercises (n=14); Resonant voice therapy (n=17); Semi Occluded Vocal Tract (n=2); Pitch Gliding (n=3); Speech breathing (n=1); Vocal hygiene program (n=3); Chewing (n=2); Yawn sigh (n=2); Push-pull exercises (n=8); Digital Manipulation (n=4); Laryngeal manipulation (n=2); Half-swallow Boom (n=2) and Humming (n=1).

Swallowing therapy techniques that the participants reported are depicted in Table 2. Postural techniques such as head rotation, head tilt, chin tuck, side-lying, etc., have been mentioned under the theme of “postural modifications;” Effortful swallow, Mendelson Maneuver and Masako technique under “swallow maneuvers;” supraglottic swallow and super supra-glottic swallow under “airway protection maneuvers;” finally, “Range-of-motion exercises” were inclusive of exercises for tongue, lip, mouth opening and neck stretches.

According to a survey, 38 participants used strategies to enhance their patient’s ability to recognize taste. The most frequently mentioned recommendations were experimenting with various textures and flavours (mentioned 37 times) and trying thermal stimulation (mentioned 7 times). Additionally, nineteen SLPs suggested informal techniques to improve smell recognition through “olfactory stimulation,” with items such as lavender and jasmine essential oils, coffee beans, and Indian spices used for stimulation.

#### *Prophylactic dysphagia intervention during radiation therapy*

Fifty participants (66.7%) recommended swallowing exercises to patients undergoing radiation therapy, while the remaining did not. Among those who recommended exercises, most (50%, n=25/50) advised “Range of Motion exercises”, while 16 out of 50 suggested “Effortful swallows”. “Airway protection maneuvers” were mentioned by seven participants, and five suggested the “Mendelson maneuver”. The “Masako technique” was mentioned by three clinicians, and two suggested the “Shaker exercise”.

Forty SLPs (80%) felt that fewer than 50% of their patients on radiation therapy were compliant with prophylactic swallowing exercises, and compliance of more than 50% was reported by only 10 SLPs. The following themes were mainly derived from the responses for reasons for poor adherence to therapy- “Low motivation”, “Pain”, “Fatigue”, “Financial issues”, and “Low prioritization of swallowing skills”.

#### *Laryngectomy Rehabilitation by SLP*

Two-thirds of the participants (n=50) reported carrying out laryngectomy rehabilitation. Tracheoesophageal speech (n=28/50) was the most preferred mode of alaryngeal voice rehabilitation, followed by oesophageal speech (n=10/50) and artificial larynx (n=9/50).

Three SLPs carried out insertion, removal and troubleshooting of voice prosthesis independently. Eleven SLPs reported that the ENT surgeon handled it, while another 11 indicated that both the SLP and ENT surgeon handled it equally. Three reported handing by HNC surgeon. Out of all the devices, Provox voice prosthesis was the most preferred by 16 participants, followed by Blom-Singer by eight respondents. Interestingly, two respondents preferred indigenous voice prostheses over the other options.

#### *Feeding tube-related questions*

The recommendations from SLPs concerning oral intake while utilizing a feeding tube were varied. Out of the 75 participants, 43 SLPs suggested taking a “small, controlled amount of oral intake” along with using the feeding tube as the primary source of nutrition. Ten recommended refraining from any oral intake while using a feeding tube, and 11 advised taking in “as much oral intake as possible”. In addition, 11 SLPs indicated that the decision to permit oral intake while using a feeding tube was dependent on the patient’s evaluation.

#### *Treatment compliance, Reasons for poor adherence, and Duration of follow up*

Twenty-four SLPs reported that less than a quarter of their patients were following the prescribed swallowing intervention. About 33 % of the patients of 14 participants and 50 % of 24 participants were committed to speech and swallowing intervention. Only thirteen participants reported that over 50% of their patients were adhering to the intervention. Possible causes of low adherence were identified in Table 3 based on the free-text responses.

Fifty-four SLPs reported conducting follow-ups as required on a “case-to-case” basis. Nine SLPs mentioned following up their patients until “three months post-cancer until treatment, while others stated following up “until one year”. Five participants claimed to conduct long-term follow-up of “more than a year”. However, patient compliance with follow-up was not consistent. Thirty-six participants informed that only 25% or fewer patients adhered to follow-up, while 17 SLPs mentioned that 50% of their patients followed up. nine SLPs mentioned that 33 % of their patients followed up. Only thirteen SLPs reported a higher follow-up rate of more than 50% of the caseload.

#### *Additional themes*

A free-text box was provided at the end of the survey for additional information. Among those who responded, 18 mentions were of the theme that medical professionals in their workplaces are “unaware of the range of SLP services” that can be offered for rehabilitating HNC patients, which leads to inadequate referrals. Another common theme mentioned 11 times is the “need for a team approach” to patient care. By having a multidisciplinary team, patients can be better managed and have improved access to care. Nine of the respondents also emphasized the “need for facilities”, particularly instrumentation for swallow assessment.

## **Discussion**

The findings from this study highlight the significant variability in SLP-led service delivery for HNC patients in India. The initial time point of referral of HNC patients depends entirely on institutional practices. However, in the absence of a standard operating procedure, the judgment of “when to refer” for rehabilitation is often at the discretion of the treating physician/surgeon.

From the additional comments of the survey respondents, it is evident that many SLPs vouch for the need for heightening awareness about speech and swallow rehabilitation among medical professionals to facilitate more referrals and prevent patients from missing the potential benefit of SLP services. The HNC caseload of the respondents comprised majorly of patients who underwent surgical resections than patients treated with organ preservation regimens. A similar preference was reported in the study by Roe et al., [13]. Only a third of the respondents carried out a pre-operative evaluation, and the time point to initiation of speech and swallow rehabilitation after surgery was highly variable across different facilities. This is contrary to the recommendation by the National Comprehensive Cancer Network (NCCN) [16], which mandates pretreatment speech and swallow assessment for patients with baseline issues and those whose treatment is likely to affect speech and swallow problems. Therefore, all patients with head and neck cancer must undergo a speech and swallow evaluation pre-operatively.

The UK guidelines for speech and swallow rehabilitation in head and neck cancer patients [5] and the American Head and Neck Society recommends baseline evaluation of HNC patients [6], as it may help identify patients who may require additional support such as enteral nutrition during cancer treatment, voice rehabilitation etc. In addition, early teaching of swallowing strategies is advised to maximize function and reduce the time required for removing tube feeding.

The group of HNC patients most frequently referred to the SLP were those who underwent glossectomy, with laryngectomy patients following closely behind. This is likely due to the overt communication and swallowing difficulties experienced by patients after the procedure, which necessitates a referral for speech and swallowing rehabilitation. Moreover, it is worth noting that India has

the highest incidence of tongue cancer worldwide [17], and surgical intervention is the most favored approach to treating this form of cancer [18, 19]. This could explain the increased number of patients with glossectomy.

Fifty SLPs reported carrying out laryngectomy rehabilitation. Even though tracheoesophageal speech was the preferred rehabilitation mode for 28 SLPs, it is noteworthy that only 14 SLPs reported handling voice prostheses independently or with ENT specialist's assistance. It has been reported in other studies that there are only few centers in India that possess the necessary expertise to implement post-laryngectomy voice rehabilitation effectively [20]. It would be beneficial for future studies to investigate why there are fewer SLPs involved in laryngectomy rehabilitation.

Although there were some similarities in the assessment protocols used, there were also variations across different settings. While clinical swallow assessments were performed regularly, not all hospitals had access to Fiberoptic Endoscopic Evaluation of Swallowing (FEES) and Videofluoroscopic Swallow Study (VFSS). Furthermore, even when these instruments were available, their utilization was limited.

Access to instrumental swallow assessments in India is restricted due to a range of factors, including a dearth of clinical proficiency, limited experience, high expenses, and inadequate support from physicians, as reported by Rangarathnam and Desai [12]. However, these assessments are essential in comprehending the biomechanics of swallowing and ensuring its safety, which cannot be determined by a clinical examination alone [21]. Given the importance of instrumental swallow assessments in patient care, it is imperative for healthcare professionals to address these obstacles and work towards more widespread availability of instrumental assessments.

According to the responses received from participants, it appears that patient-reported outcome measures (PROMs) have not been widely utilized. One possible explanation for this is the absence of tools that are customized for specific cultures and languages in various regions. This is compounded by the existence of different dietary habits in different regions. As Dang et al. [22] have noted, PROMs developed in Western countries may not be appropriate due to differences in culture and region [22].

Speech issues were usually assessed using articulation tests and intelligibility rating scales. There was a consensus preference toward "Oromotor exercises" and "articulatory drills" in improving speech precision. The use of Oromotor exercises among Indian SLPs has been reported in another survey [23]. However, research over the past two decades has criticized the efficacy of Oromotor exercises in speech disorders [24]. Despite this, the popularity of this approach among clinicians depicts an equivocal perspective on this topic. The use of this approach may be due to the benefits of range of motion exercises and resistance training in reducing trismus and improving articulatory precision in patients with head and neck cancer [25].

Clinicians often find themselves relying on informal methods to assess and intervene in patients' taste and smell, likely due to a lack of established best practices for managing these sensory skills. However, patients

frequently express concern about these domains [26], as they synergistically impact food consumption and dysphagia. As a result, clinicians often resort to explore various approaches to rehabilitate taste and smell.

According to reports, the level of adherence to intervention regimens and follow-ups was suboptimal. The reasons for this were attributed to poor patient motivation, lack of awareness regarding the potential benefits of the intervention, and financial constraints that hindered patients from attending follow-up hospital visits. Overall, the rehabilitation of HNC in India led by SLPs is making progress, and the approach to practice is changing to align with the trends observed in Western countries. SLPs in India are transitioning to a proactive approach to minimize the expected decline in speech and swallowing during cancer treatment and initiate rehabilitation as early as possible instead of waiting until after cancer treatment. A recent survey [27] compared the usual care practices for dysphagia management of HNC patients in the USA with an earlier survey [14] and reported that the practice pattern had improved significantly, with increased early referrals and implementation of intervention during the period of HNC treatment. This positive change can be attributed to the implementation of evidence-based practice in the assessment and management of swallowing disorders. The clinical arena of speech-language pathology in India is also influenced by clinical and scientific e-resources such as journal articles, webinars, and seminars from Western countries, which shape and modify the practice patterns [23].

One of the limitations of this study is the low representation of participants from states in the Northeast-which has the highest HNC incidence as per National Cancer Registry Programme Report, 2020 [28]. Moreover, it should be noted that this survey only covers care patterns provided by hospital based SLPs. Thus, it does not account for the care provided by SLPs in private practice or non-hospital work settings who may also work with this patient population. Additionally, we have yet to capture care patterns in hospitals without an in-house SLP.

There is an estimated 12% rise in cancer cases in India over the next five years [28]. Improving early identification and treatment of cancer is undoubtedly essential. However, we should also prioritize rehabilitation and survivorship to ensure that patients receive the best possible care. To achieve this, we need to sensitize oncologists and surgeons regarding rehabilitation and enhance referral pathways for patients with HNC cancer. Early referrals and interventions can improve patient functionality and overall quality of life [29]. A multidisciplinary team approach is needed for effective assessment and management [5]. Additionally, the capacity building in the SLP community can be improved by leveraging the benefits of special interest groups.

Advocating for the needs of head and neck cancer patients is crucial for SLPs in India. It is also important to conduct vanguard studies that can identify barriers to accessing SLP services and come up with potential solutions. These solutions should be tested, evaluated, and implemented to overcome the barriers.

In conclusion, the current study shows that few

observable trends exist, along with a lack of consensus on the rehabilitation of HNC patients in India. Formulations of national guidelines on HNC management are warranted to align the current clinical practice in India with that in developed countries. SLPs are a crucial component of the medical team and must be involved in all aspects of patient care, from diagnosis to survivorship to end-of-life care. By prioritizing rehabilitation services, we can achieve better patient outcomes and enhance patient satisfaction.

### Author Contribution Statement

All authors participated in conceptualizing the idea and designed the study. JJV carried out the data collection, analysis and prepared the draft manuscript. VA, BR and KS revised the draft for intellectual content. All authors agreed on the final version.

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### Ethical Declaration

The current study is a preliminary part of an ongoing doctoral study approved by the Institutional Ethical Committee of Kasturba Hospital, Manipal (IEC No.362/2020). Written informed consent was taken from all the participants.

### Conflict of Interest

All the authors declare no conflicts of interest. Part of this study was presented as an oral presentation at the 53rd Annual Conference of the Indian Speech and Hearing conference held virtually on 19-20 February 2022.

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