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A Student-Led Tele-Expiratory Muscle Strength Training (EMST) Program for Head and Neck Cancer (HNC) Survivors—A Pilot Implementation Study

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ABSTRACT

Background: Expiratory muscle strength training (EMST) is a non-invasive, evidence-based treatment that is used to improve swallowing in head and neck cancer (HNC) survivors. This prospective, pilot implementation study evaluated the feasibility, acceptability, and potential clinical effectiveness of a novel student-led tele-EMST program for HNC survivors.

Methodology: HNC survivors ($n = 13$) completed an eight-week tele-EMST program. Acceptability was measured using the Theoretical Framework of Acceptability Questionnaire (TFAQ) and the Telehealth Usability Questionnaire (TUQ). Feasibility was tracked weekly. Swallowing performance, airway clearance, and quality of life were evaluated using the Timed Water Swallow Test (TWST), peak expiratory flow rate (PEFR), and SWAL-QoL, respectively. Data were collected with REDCap. Descriptive and non-parametric statistics were performed.

Results: Acceptability of the tele-EMST program was high, as evidenced by high ratings on the TUQ (mean: 88.1/100%, SD: 16.3) and significant improvement on the TFAQ ($p < 0.05$). Technical issues occurred in 24% of sessions but were all resolved. Swallowing performance (TWST, $p < 0.05$), self-reported dysphagia symptoms, and mental health scores (SWAL-QoL, $p = 0.03$; $p = 0.02$) significantly improved. No significant changes in PEFR were observed ($p = 0.59$).

Conclusion: The findings of this small pilot feasibility suggest that a student-led, tele-EMST program is a promising, scalable approach to reduce treatment inequities and support survivorship care for HNC survivors with dysphagia.

1 | Introduction

Head and neck cancer (HNC) is a common and debilitating disease, with an estimated 660 000 new diagnoses annually [1, 2]. While the 5-year survival rate is relatively high (72%) [3], oncologic treatment, including radiotherapy and chemoradiation, causes long-term swallowing impairments that increase the risk of mortality, hospitalization, and negatively impact quality of life [4–6]. Chronic aspiration occurs in approximately 30% of head and neck cancer survivors [7, 8]. Those who aspirate are more likely to have impaired cough and airway clearance mechanisms [8] and are 4.6 times more likely to develop aspiration pneumonia [9]. Of those who develop aspiration pneumonia, 84% will require hospitalization and 32% will be admitted to intensive care, increasing their risk of mortality by 42% [9, 10]. Aspiration pneumonia is the

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leading cause of non-cancer-related death in HNC cancer survivors [11, 12]. Thus, access to evidence-based rehabilitation to improve swallowing and respiratory function is of substantial importance.

1.1 | Expiratory Muscle Strength Training (EMST) for HNC Survivors

EMST is a non-invasive, low cost, evidence-based dysphagia rehabilitation [13, 14]. Emerging evidence supports its role as a promising dysphagia rehabilitation for HNC survivors, as evidenced by enhanced maximum expiratory pressures (MEPs), swallowing safety, as measured on the Dynamic Imaging Grade of Swallowing Toxicity (DIGEST), and diet improvements following 8 weeks of EMST [11, 15]. EMST is traditionally delivered in-person, weekly, in hospital and clinical settings under the guidance of a speech-language pathologist [11, 15]. However, this mode of service delivery imposes a significant travel burden and costs for HNC survivors, especially for those who live far from specialist centers, thereby widening disparities in survivorship care.

1.2 | A Novel Model of EMST Service Delivery

Telehealth has become an increasingly viable and acceptable model of service delivery in speech pathology [16, 17]. Dysphagia tele-assessment was reported to be safe, valid, and cost-effective, without compromising patient or caregiver satisfaction [18, 19]. Among HNC survivors, dysphagia telerehabilitation, comprising oro-pharyngeal motor exercises, educational content, and remote monitoring, was associated with improvements in swallowing safety, oral feeding, nutritional status, and swallowing-related quality of life, with high patient satisfaction and cost-effectiveness [20–22]. Several barriers and facilitators were identified [22]. These included managing the side effects of radiotherapy, balancing the intensity, frequency, and duration of telehealth sessions, managing motivation, providing education, feedback, and support, and managing technical problems [22]. EMST is highly amenable to a telehealth model of delivery, as has been shown in other patient populations [17]. Therefore, the aim of this pilot implementation study was to evaluate the acceptability and feasibility of a student-led tele-EMST program for HNC survivors. As a secondary aim, changes in swallowing performance and quality of life for HNC survivors were evaluated.

1.3 | Study Aims

The primary aim of this pilot implementation study was to evaluate the acceptability and feasibility of a student-led tele-EMST program for HNC survivors. As a secondary aim, changes in swallowing safety, performance, and quality of life for HNC survivors were evaluated.

Unique components of this study were the student led and tele-EMST modes of service delivery. We hypothesized that these would have substantial benefits for speech pathology students and local health districts by optimizing speech pathology resources, enhancing access to EMST for HNC survivors, and by providing valuable clinical experience for speech pathology students. Thus, the acceptability and feasibility of the program for student speech pathologists was also evaluated.

2 | Materials and Methods

2.1 | Implementation Framework

The Generic Implementation Framework (GIF) [23] was the guiding framework for this study. Table 1 outlines the core components of the GIF and their application to the student-led, tele-EMST program.

2.2 | Ethical Considerations

Approval by the Northern Sydney Local Health District Human Research Ethics Committee (2022/ETH00007) was granted prior to data collection. All participants (i.e., HNC survivors and student speech pathologists) provided informed written consent to participate in the study.

2.3 | Participants

HNC survivors were recruited between February 2022 and October 2023 from two large metropolitan hospitals in Sydney, Australia. HNC survivors who met the inclusion criteria, outlined below, were invited to participate in the study at the time EMST was clinically indicated by their managing speech pathologist. All participants were engaged in Speech Pathology services for assessment and management of HNC-related dysphagia but were not receiving intervention during the study. Participants retained the option to decline or withdraw from the study at any time, with continuation of their standard speech pathology care. This ensured that the tele-EMST program aligned with the current clinical workflow of the participating hospitals. All participants were screened to ensure they had no contraindications to EMST as per EMST150 recommendations [24].

Inclusion criteria:

- History of HNC treatment (i.e., surgery, radiotherapy with or without chemotherapy)
- Self-reported dysphagia following HNC treatment.
- Minimum of 3 months following cancer treatment.
- Swallowing rehabilitation of EMST is deemed suitable for routine clinical management by the managing speech pathologist.
- Available during the university semester student placement dates

Exclusion criteria:

- History of uncontrolled hypertension, abdominal hernia, or recent abdominal surgery (EMST contraindication).

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TABLE 1 | Application of the Generic Implementation Framework.

GIF component	Application to dysphagia tele-rehabilitation program
1. Implementation objectives	*Primary*: to evaluate the acceptability, feasibility and clinical effectiveness of a student led, tele-EMST program for HNC survivors
2. Intervention	Student led, tele-EMST program for HNC survivors
3. Context analysis	*Setting*: Hospital, university clinic, telehealth *Stakeholders*: patients, students, clinicians, management, funding body *Potential barriers & facilitators*: time for device delivery prior to initial session, potential challenges with remote device calibration, managing the side effects of radiotherapy, balancing the intensity, frequency and duration of telehealth sessions, managing motivation, providing education to students, providing feedback and support to HNC survivors and managing technical problems with video conferencing [22].
4. Implementation strategies	Embed within student clinical placement Student training on tele-EMST Clinician oversight and supervision Technical assistance REDCap-based monitoring for adherence and fidelity Local clinical champions to drive implementation
5. Implementation process	*Preparation*: student training, assessment of baseline acceptability *Monitoring*: student supervision, technical issues, patient side effects
6. Evaluation	Acceptability outcomes Feasibility outcomes Clinical outcomes
7. Adaption and sustainability	Program modification based on feedback

- Moderate-to-severe cognitive impairment impedes the ability to complete informed consent and/or participate in the EMST therapy via telehealth.

Student speech pathologists at The University of Sydney were invited to participate in the study as part of their intermediate clinical placement. They were given the choice to opt out of the study while continuing with their clinical placement.

2.4 | Procedures

All student speech pathologists involved in the study had completed university-level coursework in swallowing disorders and were familiar with the purpose and clinical application of EMST. Prior to delivering the intervention, students participated in a one-hour, in-person practical session facilitated by two researchers (KB and EW). During this session, students were trained in using their EMST device (EMST150) and were required to demonstrate correct technique and explain the calibration process. By the end of the workshop, all students had successfully met these requirements, ensuring consistency and fidelity in the delivery of the tele-EMST program.

Telehealth sessions were delivered via a university-managed Zoom account, with user authentication and virtual waiting rooms enabled to ensure participant privacy and session security. Upon enrolment, EMST devices (EMST150) and a peak flow meter (Mini Wright) were sent to HNC survivors prior to their first scheduled tele-EMST session. Baseline tele-assessments were conducted with HNC survivors by a student and qualified speech pathologist (JT, EW, or KB). Each student speech pathologist was assigned to one HNC survivor to facilitate continuity of care and rapport building.

As per published EMST protocols, participants followed the "rule of fives" comprising five sets of five exhalations, five times per week [25]. Individuals' baseline expiratory pressure was established using the EMST device. Expiratory pressure was increased a quarter turn from the lowest device pressure (30 cm H_2O) until MEP was established (i.e., insufficient airflow to open the valve on the device). Once established, the expiratory pressure was decreased a quarter turn and used as the starting point.

HNC survivors completed 8 weekly tele-EMST sessions with their student speech pathologist. During each session, individuals' technique was checked, the expiratory pressure was incrementally increased or decreased (by a quarter turn) based on performance and five sets of five exhalations were completed. Clinical supervision was provided for all sessions by a qualified speech pathologist (JT, EW, or KB), as a required component of the student placement. The supervisor's role was to be available to support students as needed during sessions and to provide written feedback on their clinical performance. Students provided a rating of the acceptability of the tele-EMST session via an online data collection form in Research Electronic Data Capture (REDCap).

Between weekly tele-EMST sessions, HNC survivors completed four days of training offline independently. Written and verbal instructions were provided. Adherence, barriers to training, and questions for clinicians were documented by HNC survivors via an online data collection form in REDCap. Following the 8-week tele-EMST program, HNC survivors were re-referred to their practicing clinicians for ongoing management and EMST maintenance.

2.5 | Outcome Measures

Outcome measures are presented in Table 2. Acceptability of the program for HNC survivors was measured using the Theoretical framework of acceptability questionnaire (TFAQ) [26] and the Telehealth Usability Questionnaire (TUQ) [27]. The TFAQ included seven questions that were rated by HNC survivors on a five-point Likert scale from

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TABLE 2 | Summary of outcome measures.

Domain	Outcome measure	Timepoint
Acceptability Outcomes	Theoretical framework of acceptability questionnaire [26]	Pre- and post-EMST
	Telehealth Usability Questionnaire (TUQ) [27]	Post-EMST
	Student acceptability questionnaire	Weekly post-EMST
Feasibility Outcomes	Set-up time Session duration Technical issues Unplanned clinician involvement	Weekly
Clinical Outcomes	Peak expiratory flow rate	Pre- and post-EMST
	Timed water swallow test	Pre- and post-EMST
	SWAL-QoL	Pre- and post-EMST
	Functional Oral Intake Scale	Pre- and post-EMST

strongly disagree to strongly agree (Table 4). The TUQ is a psychometrically robust questionnaire that was developed to evaluate the usability of telehealth implementation services [27]. It included 16 questions that were rated by HNC survivors on a seven-point Likert scale from disagree to agree. Students completed weekly questionnaires, comprising six questions related to rapport, audio quality, visual quality, ability to check the participants technique, assessment of adverse effects and ability to recalibrate the device, that were rated on a five-point Likert scale from strongly disagree to strongly agree (Table 5). Feasibility was evaluated from measures of the set-up time (patient and student), session duration, technical issues (as rated by the clinician during the session) and unplanned supervisor involvement. All data were collected via RedCap.

2.6 | Analysis

Non-parametric analyses (Wilcoxon signed rank test) were used to evaluate changes in the Theoretical framework of acceptability questionnaire (TFAQ), Timed Water Swallow Test (TWST), Peak Expiratory Flow Rate (PEFR), SWAL-QoL and Functional Oral Intake Scale (FOIS) from baseline to post-EMST. Feasibility outcomes, the TUQ and the student acceptability questionnaire were analyzed descriptively. For the TUQ, a percentage score was calculated for each participant (i.e., participant score/maximum test score × 100). Statistical analyses were conducted using SPSS, version 29.0.

3 | Results

3.1 | Participants

All HNC survivors invited to participate ($n = 15$) in the program by their managing speech pathologist agreed to participate. Two participants opted out of the study after recruitment due to conflicting medical commitments that prevented them from attending weekly tele-EMST sessions. Thirteen HNC survivors were included in the final analysis.

The mean age of participants was 70 years, with the majority being male ($n = 11$, 85%). Most had oropharyngeal tumors ($n = 11$, 85%) classified as T-stage 0–2 ($n = 9$, 69%), and all were treated with radiation therapy, with or without chemotherapy. The majority were retired ($n = 9$, 70%) and lived at least 30 min from their treating hospital in Sydney ($n = 11$, 85%). A summary of HNC survivor demographics is presented in Table 3. Thirteen intermediate student speech pathologists were invited to participate. No students declined or opted out of the study.

3.2 | Acceptability

HNC survivor self-reported ratings of effort, ability, effectiveness and understanding increased from baseline to post-EMST ($p < 0.05$), as measured on the TFAQ (Table 4). The mean (SD) score on the TUQ post treatment was 88.1 (14.1) %, with 100% indicating maximum usability and acceptability.

Student self-reported acceptability was high following EMST. Students mostly 'strongly agreed' (mode rating = 5) that tele-EMST facilitated rapport building with participants and provided adequate audio and visual quality to conduct and monitor EMST technique. They also 'agreed' (mode rating = 4) they were able to accurately assess adverse effects and provide appropriate instructions for EMST delivery online. Students' ratings of acceptability of the tele-EMST program are outlined in Table 5.

3.3 | Feasibility

The mean (SD) set-up time for tele-EMST sessions across all participants was 4.7 (7.6) min and the mean (SD) assessment and therapy session durations were 44 (11.0) and 27 (10.7) min, respectively. Technical issues during the set-up occurred in 4% of sessions for HNC survivors. These comprised difficulty opening the videoconferencing link ($n = 1$), internet quality ($n = 2$) and difficulty connecting the computer speakers ($n = 1$). Technical issues during the session occurred in 20% of sessions. These comprised internet quality ($n = 9$) and audio issues ($n = 11$). All issues were resolved within the session to allow session goals

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TABLE 3 | Demographics of HNC survivors.

Number (*n*)	Recruited	15
	Opt-outs	2
	Final	13
Age (years)	Mean	70
	Range	53–81
Biological sex	Male	11 (85%)
	Female	2 (15%)
T-stage	0–2	9 (69%)
	3–4	4 (31%)
N-stage	0	2 (15%)
	1	5 (38%)
	2	6 (47%)
HNC site	Oro-pharyngeal	11 (85%)
	Laryngeal	2 (15%)
HNC treatment	CRT	7 (54%)
	RT	3 (23%)
	Surgery + RT	3 (23%)
Work status, *n* (%)	Retired	9 (70%)
	Working	4 (30%)
Living distance from the hospital (min)	0–15	0
	15–30	2 (15%)
	30–45	7 (55%)
	45–60	3 (23%)
	90+	1 (7%)

Abbreviations: CRT = chemo-radiotherapy, RT = radiotherapy.

to be achieved. Unplanned support from the clinical educator to check patients' technique and to answer challenging clinical questions occurred in 15% of sessions.

3.4 | Clinical Outcomes

Changes in secondary clinical outcomes are outlined in Tables 6 and 7.

4 | Discussion

The findings of this pilot implementation study suggest that a novel student-led tele-EMST model of service delivery is acceptable, feasible, and potentially improves swallowing performance and QoL for HNC survivors, potentially mitigating disparities in dysphagia treatment in HNC survivorship.

4.1 | Acceptability and Feasibility

The student led, tele-EMST model was perceived by HNC survivors to be convenient, minimally disruptive, less effortful and equally effective as in-person models of service delivery. This aligns with prior research demonstrating high patient satisfaction with telehealth models of dysphagia service delivery for HNC survivors [28–30]. The TFAQ, used to evaluate acceptability in this study, was designed for pilot implementation studies and provided valuable insights on multidimensional aspects of acceptability, including convenience, satisfaction, disruption, perceived effort, ability, effectiveness and understanding, thus, providing actionable feedback for service redesign. Ratings of perceived ability, effectiveness and understanding of the tele-EMST program were lower at baseline, suggesting that additional information and education (e.g., video demonstrations) prior to the initial tele-EMST session may be valuable. Ratings of convenience, satisfaction, disruption and effort were rated highly at baseline and post-intervention, suggesting that the tele-EMST program met HNC survivors' expectations in these domains.

With respect to feasibility, there were no unresolvable technical issues and few instances of speech pathology students requiring unplanned contact with their clinical educator, supporting the implementation of the student led component of service delivery. The findings suggest that educational videos on how to open the videoconferencing link and connect to the computer speakers are needed. Despite the low number of instances of unplanned support by the clinical educator, clinician oversight and clinical supervision were necessary for this student-led tele-EMST model of service delivery.

4.2 | Clinical Swallowing Outcomes

Improvements in secondary clinical outcomes, the TWST, FOIS, and SWAL-QoL, were observed. The median TWST post EMST was within the range of published normative data, using male, 70–79 years as the reference range for the study sample [31], suggesting improvements may be clinically, as well as statistically meaningful. Significant improvements in self-reported dysphagia symptoms, specifically secretion management and total symptom score, and dysphagia related mental health were observed from baseline to post-EMST, as measured on the SWAL-QoL. Given the small sample size and implementation nature of this study, no definitive conclusions can be drawn from these findings. However, the findings suggest that the TWST and SWAL-QoL may be useful outcome measures for future studies in EMST for HNC survivors with larger sample sizes.

There was no significant improvement in PEFR. One potential reason for this finding may be related to the use of a peak flow meter to measure PEFR via telehealth with student speech pathologists. PEFR is most accurate when measured with a well-trained clinician and can vary with motivation and instructions [31]. While student speech pathologists were trained in how to collect PEFR prior to data collection, their confidence and competence in collecting this outcome measure may have influenced HNC survivors' performance on the test. The choice to measure PEFR was based on feasibility and costs. However, it is acknowledged that PEFR does not directly measure changes in respiratory muscle strength but rather the maximum expiratory airflow generating capacity, which can be influenced by airway diameter. In future implementation of the program, measuring

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TABLE 4 | Changes in the Theoretical Framework of Acceptability Questionnaire from baseline to post-intervention for HNC survivors.

	Baseline		Post-intervention			
Statement	**Median**	**Mode**	**Median**	**Mode**	***p*[a]**	***Z***
Convenience—EMST via telehealth is more convenient than EMST face to face.	4	4	5	5	0.12	1.6
Satisfaction—I am looking forward to doing EMST via telehealth.	4	4	5	5	0.07	1.8
Disruption—Doing EMST via telehealth will be less disruptive to my daily activities than EMST face to face.	4	5	5	5	0.05	1.9
Effort—EMST via telehealth will require less effort than EMST face to face.	4	4	5	5	0.04*	2.0
Ability—I am confident that I can perform all tasks required to participate in EMST via telehealth.	4	3	5	5	0.008*	2.6
Effectiveness—EMST via telehealth will be as effective as EMST delivered face to face.	4	3	5	5	0.03*	2.2
Understanding—I understand the intervention and how it works.	3	3	5	5	0.003*	3.0

Note: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.
*Sig = $p < 0.05$, SPSS (V29.0).
[a]Wilcoxon signed ranks test.

TABLE 5 | Student ratings of tele-EMST acceptability.

				Range	
Statement	**Median**	**Mode**	**IQR**	**Min**	**Max**
I am happy with the level of rapport gained with the participant to conduct EMST via telehealth.	5	5	1	3	5
The audio quality was appropriate to conduct EMST via telehealth.	4	5	1	1	5
The visual quality was appropriate to conduct EMST via telehealth.	4	5	1	2	5
I was able to check the participant's EMST technique via telehealth.	4	5	1	2	5
I was able to accurately assess any adverse effects of EMST.	4	4	1	2	5
I was able to instruct the participant to recalibrate the EMST pressure over telehealth.	4	4	1	3	5

Note: 5 = strongly agree, 4 = agree, 3, neutral, 2 = disagree, 1 = strongly disagree.

TABLE 6 | Changes in clinical outcomes from baseline to post-intervention.

		Pre-EMST	Post-EMST		
Measurement		**Median (IQR)**	**Median (IQR)**	***p*[a]**	***Z***
Peak Expiratory Flow Rate (L/min)		550 (270)	520 (255)	0.59	−0.54
FOIS		5 (1)	6 (1)	0.008*	−2.65
TWST	# of swallows	9 (4)	6 (3)	−2.40	0.016*
	Time (s)	12.28 (31)	7.5 (6)	−2.97	0.003*
	Rate (time/#)	12.22 (15)	20 (12.5)	−2.76	0.006*

Note: *Sig = $p < 0.05$, SPSS (V29.0).
[a]Wilcoxon signed Rank test.

MEP in an in-person visit at baseline and follow-up may be valuable to more accurately measure changes in respiratory muscle strength. Among this sample of HNC survivors, median PEFR was within the normal range at baseline, using a 70-year-old male as the reference range for the study sample, suggesting a potential ceiling effect.

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TABLE 7 | Changes in SWAL-QoL from baseline to post-intervention.

			Pre-EMST mean (SD)	Post-EMST mean (SD)	p[a]	Z
SWAL-QoL	Burden		57.7 (32.5)	63.5 (30.4)	0.22	−1.22
	Eating desire		67.3 (35.6)	76.3 (28.4)	0.20	−1.34
	Eating duration		47.1 (43.0)	50.0 (37.2)	0.40	−0.78
	Food selection		56.7 (37.7)	68.3 (28.2)	0.09	−1.67
	Communication		79.8 (24.8)	79.8 (20.8)	0.90	−0.17
	Fear		72.1 (29.7)	81.7 (22.9)	0.08	−1.73
	Mental Health		57.7 (33.1)	70.4 (25.7)	0.02*	−2.38
	Social		65.0 (34.2)	74.3 (31.3)	0.05	−1.95
	Fatigue		60.1 (24.1)	65.4 (24.3)	0.20	−1.33
	Sleep		57.7 (27.3)	58.3 (26.8)	0.80	−0.31
	Symptoms	Oral	77.7 (20.0)	85.9 (17.5)	0.10	−1.66
		Pharyngeal	52.5 (24.3)	61.8 (21.1)	0.05	−1.92
		Secretions	44.3 (38.7)	59.6 (32.3)	0.02*	−2.38
		Total	59.5 (21.7)	68.5 (17.8)	0.03*	−2.12
	Total SWAL-QoL		62.1 (28.4)	68.9 (22.5)	0.06	−1.85

Note: *Sig = $p < 0.05$, SPSS (V29.0).
[a]Wilcoxon signed rank test.

4.3 | Implementation Process

The GIF guided the stages of implementation and key considerations for this study. The results suggest that additional student training and educational videos for participants in the preparation phase are needed. Integrating synchronous (e.g., weekly telehealth sessions) and asynchronous (e.g., student training videos, participant-facing educational tutorials) modes of information delivery may enhance the efficiency of the program by reducing technical issues and minimizing the need for unplanned clinician support during sessions. Reassuringly, there were no logistical challenges with posting EMST devices and peak flow meters to participants and calibrating their devices via video conferencing.

Embedding the implementation of the tele-EMST program within student clinical placements strategically leveraged existing resources to support innovation and service development. This approach had dual benefits: optimizing speech pathology service delivery within the public health system and providing valuable, real-world clinical experience for speech pathology students. This model also facilitated strong stakeholder engagement across both healthcare and academic sectors, fostering institutional buy-in and supporting implementation success. However, student clinical placements occur at specific times within the university semester. This was a barrier to recruiting some HNC survivors who needed more flexibility in the timing of their EMST sessions.

Key limitations of our implementation included a limited focus on the domains of adoption and sustainment. As a pilot study, broader engagement with clinical supervisors, service managers, and healthcare system stakeholders was not undertaken. Their input would have provided insights into external factors that may influence implementation and strengthened the foundation for long-term adoption and sustainability. Additionally, although clinicians observed all student-led sessions, there was no formal assessment of implementation fidelity to evaluate whether the intervention was delivered consistently and as intended across students. As this was a pilot feasibility study, the sample size was small.

5 | Conclusion

This pilot implementation study demonstrated that delivering EMST through a student-led telehealth model for HNC survivors was acceptable, feasible, and potentially effective in improving swallowing performance and quality of life. Future directions will focus on scaling up access to this program to reach a broader cohort of HNC survivors. Clinically, this model has the potential to enhance service provision, optimize the use of public health resources, and offer meaningful clinical training opportunities for speech pathology students.

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Conflicts of Interest

The authors declare no conflicts of interest.

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Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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