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Undergraduate, 1st Place: Otolaryngologist and Speech-Language Pathologist (SLP) Collaboration in Head and Neck Cancer

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Otolaryngologist and Speech-Language Pathologist (SLP) Collaboration in Head and Neck Cancer

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CHAPTER 1

Introduction

Head and neck cancer (HNC) is an aggressive, complex diagnosis that accounts for approximately five percent of all cancers diagnosed in the United States (Kawashita et al., 2020; National Cancer Institute, n.d. A). There are various types of HNC and several tumor sites in which HNC can potentially occur. Because routine screening for HNC does not exist, it is difficult to diagnose and often found at advanced stages (National Cancer Institute, n.d. A).

Treatments for HNC may include surgery, radiation, chemotherapy, immunotherapy, or a combination of treatments (National Cancer Institute, n.d. A). Although there are many readily available treatment options, a patient's prognosis and general health can determine potential negative side effects and consequences of targeted HNC treatment impacting not only physical and emotional health, but also their quality of life (QoL) (Carvalho et al., 2021). HNC treatments like surgery, radiation therapy, or chemotherapy may have side effects such as oral motor and structural deficits, problems with function or regaining function, difficulty breathing, and problems adjusting or learning to adjust to new bodily conditions. A reconstructive procedure can result in a dramatic change in structure, potential nerve damage, and loss of oral motor function (National Cancer Institute, n.d. A; Govender et al., 2015). Problems regaining function can consist of, but are not limited to, muscle weakness, a lack of muscle coordination, a decreased range of motion, neck and shoulder pain, difficulty chewing, swallowing, or speaking, difficulty breathing, laryngeal penetration or aspiration, and deterioration of the voice (Carvalho et al., 2021; Govender et al., 2015; National Cancer Institute, n.d. A; Paleri et al., 2011; Russell, 2009; Verma et al., 2019). Other common consequences of HNC treatments are malnutrition, severe inflammation or redness, and oral cavity ulcerations (Sohn et al., 2020). Although HNC

treatments intend to be curative, many of the available treatment options cause an array of negative side effects that affect each patient's physical health, emotional health, and overall QoL. For this reason, it is important for a treatment management plan to be discussed and generated by a multidisciplinary team (MDT) comprised of uniquely trained healthcare individuals.

Primary members of the MDT for HNC patients include otolaryngologists, speech language pathologists (SLPs), surgeons, oncologists, pathologists, psychologists, dieticians, dentists or oral surgeons, specialized nurses, and primary care physicians (Bradley, 2012; Brar et al., 2014; Friedland, 2011; Hazzard et al., 2021, B; Jawad et al., 2015; Lamb et al., 2011; McCarter et al., 2018; Soukup et al., 2018; Talwar et al., 2016; Wiederholt et al., 2007). Other professionals may also be consulted to support treatment planning and ensure appropriate patient care in the management of HNC treatment. The purpose of consulting an MDT is to improve decision-making through the breadth of expertise and perspectives presented during interprofessional collaboration of healthcare professionals. An MDT reduces the risk of mortality by optimizing the benefits of treatment and providing the highest-quality care for HNC patients.

Otolaryngologists and SLPs are important members of the MDT; however, further collaboration between the two disciplines outside of the broader group is warranted due to their closely aligned roles in the area of HNC. The roles of otolaryngologists and SLPs intersect in areas such as HNC treatment management, voice disorders and rehabilitation of the voice, rehabilitation after partial or total laryngectomy, oral motor rehabilitation, speech, swallowing function, patient education, patient counseling, patient QoL management, supportive and follow-up care, and referrals (American Head and Neck Society, 2015; American Speech-Language-Hearing Association, 2016, B; Boominathan & Desai, 2012; Carroll-Alfano, 2019; Cuny et al., 2015; Landera et al., 2013; Naidu et al., 2013; Thong et al., 2010). An otolaryngologist diagnoses HNC and plays a significant role in leading the MDT to determine the best treatment

options for the patient and improve patient QoL. An SLP works with a patient before, during, and after treatment to rehabilitate communication and swallowing, which can impact QoL and survival. SLPs provide prophylactic treatment as well as counseling, education, evaluation, and treatment to address communication and swallowing deficits before, during, and after treatment for head and neck cancer (American Speech-Language-Hearing Association, 2016, B; De Felice et al., 2019; Hazzard et al., 2021, A; Hazzard et al., 2021, B; Rocke et al., 2019; Zuydam et al., 2020). It is necessary for both otolaryngologists and SLPs to be involved in patient care concerning voice disorders or rehabilitation; swallowing; oral motor rehabilitation; speech and communication; and other supportive care before, during, and after the patient's cancer treatment (Denaro et al., 2016). Is it critical for otolaryngologists and SLPs to follow-up with HNC patients, as they will need extensive methods of treatment and rehabilitation.

Given that the roles of otolaryngologists and SLPs intersect in the management of HNC, referral and collaboration between the disciplines should occur (Boominathan & Desai, 2012; Carroll-Alfano, 2019; Culton & Gerwin, 1998; Granda-Cameron et al., 2017; Thong et al., 2010.) However, limited research concerning the collaboration between otolaryngologists and SLPs has been conducted, and the available literature suggests that these professionals collaborate only in specific areas of HNC, such as laryngectomy rehabilitation, patient education for prognosis and treatment options, and patient counseling about prognosis (Carroll-Alfano, 2019; Culton & Gerwin, 1998; Longobardi et al., 2021; Naidu et al., 2013). There is an insufficient amount of substantial literature addressing collaboration between otolaryngologists and SLPs in other areas of HNC, such as preliminary patient education, voice rehabilitation, swallowing rehabilitation, oral motor rehabilitation, speech, and referrals (Boominathan & Desai, 2012; Granda-Cameron et al., 2017; Longobardi et al., 2021). This evident gap in the literature

surrounding interprofessional collaboration in HNC suggests this area of collaborative practice is still developing and requires further research to guide best practice for HNC patients.

The purpose of this survey study is to evaluate interprofessional collaboration between otolaryngologists and SLPs from the otolaryngologist perspective to identify potential barriers to collaborative practices with SLPs in the management of patients with HNC. It is important to understand that collaborative practices in HNC not only impact the quality of care provided to HNC patients, but also influence the patient's overall QoL. The documentation of interprofessional collaboration between otolaryngologists and SLPs in HNC is necessary and beneficial to HNC patients (Berrone et al., 2021; Boominathan & Desai, 2012; Bossi & Alfieri, 2016; Carroll-Alfano et al., 2018; Denaro et al., 2016; De Felice et al., 2018; Friedland et al., 2011; Granda-Cameron et al., 2017; Longobardi et al., 2021; Lo Nigro et al., 2017; Messing et al., 2018; Naidu et al., 2013).

CHAPTER 2

Literature Review

Current Knowledge of Collaboration and Referrals Between SLPs and Otolaryngologists

The scopes of practice of SLPs and otolaryngologists intersect in the management of HNC. Both SLPs and otolaryngologists study the head and neck and are trained to collaborate within several areas of HNC management to provide the highest quality of care for patients (Boominathan & Desai, 2012). Current literature surrounding areas of intersect between SLPs and otolaryngologists indicates that there *should* be collaboration between otolaryngologists and SLPs in HNC management, specifically across the following areas: QoL management; HNC symptom management; voice rehabilitation; partial or total TL rehabilitation; referrals; swallowing; oral-motor rehabilitation; speech and communication; and patient education and counseling related to diagnosis, and procedures. (Boominathan & Desai, 2012; Carroll-Alfano, 2019; Culton & Gerwin, 1998; Granda-Cameron et al., 2017; Thong et al., 2010). Unfortunately, few studies examine the current status of interprofessional collaboration between otolaryngologists and SLPs.

Ten articles recognized that collaboration between otolaryngologists and SLPs exists or is expected (Abdel-Aty et al., 2021; Boominathan & Desai, 2012; Carroll-Alfano et al., 2019; Cohen et al., 2016; Culton & Gerwin, 1998; Granda-Cameron et al., 2017; Longobardi et al., 2021; Naidu et al., 2013; Taberna et al., 2020; Thibeault, 2007). From these articles, only four reported specific known collaborative practices between otolaryngologists and SLPs in any area of HNC (Culton & Gerwin, 1998; Granda-Cameron et al., 2017; Longobardi et al., 2021; Naidu et al., 2013). Eleven articles mentioned *both* otolaryngologists and SLPs to be a necessary parts of an MDT for HNC patients (Berrone et al., 2021; Bossi & Alfieri, 2016; De Felice et al., 2018;

Friedland et al., 2011; Jawad et al., 2015; Licitra et al., 2016; Lo Nigro et al., 2017; Messing et al., 2018; Naidu et al., 2013; Rajkumar et al., 2017; Wood, 2005). However, of the same articles, only one reported methods of current collaborative practices between the two disciplines (Naidu et al., 2013).

Three articles stated that otolaryngologists and SLPs collaborated in partial or TL rehabilitation (Carroll-Alfano et al., 2018; Culton & Gerwin, 1998; Naidu et al., 2013). According to a study by Culton and Gerwin (1998), in a survey of SLPs, most reported that they worked closely in teams with otolaryngologists when working with partial or TL rehabilitation (Culton & Gerwin, 1998). No specific details about type of collaboration were reported. However, a poster study by Naidu et al., 2013 addressed the wide skill set that laryngectomy patients need to regain, including voice; speech function and intelligibility; neck function; swallowing; and respiration; and concluded that laryngectomy rehabilitation requires both an otolaryngologist and an SLP (Naidu et al., 2013).

One article recognized that collaboration between otolaryngologists and SLPs exists in counseling and educating HNC patients. This collaboration was specifically focused on education about TL procedures. Once again, no details about how otolaryngologists and SLPs collaborated on counseling and educating patients are given (Carroll-Alfano et al., 2018).

Only two articles noted that current collaborative practices between otolaryngologists and SLPs are not meeting the expected standards for practice (Granda-Cameron et al., 2017; Naidu et al., 2013). However, eight articles have made recommendations for future practice in collaboration between SLPs and otolaryngologists or declared the need for further research (Boominathan & Desai, 2012; Carroll-Alfano et al., 2018; Denaro et al., 2016; Granda-Cameron

et al., 2017; Longobardi et al., 2021; Nekhlyudov et al., 2017; Starmer & Gourin, 2013; Taberna et al., 2020).

Literature Gap

There is minimal literature indicating that otolaryngologists and SLPs collaborate in the areas of intersect within their fields. The handful of studies that demonstrate interprofessional collaboration between otolaryngologists and SLPs concur in that the "best practice standards" (Granda-Cameron et al., 2017) are not being satisfied; interprofessional communication and collaboration are insufficient, and because of this, HNC patients are not receiving the highest quality of care from otolaryngologists and SLPs (Carroll-Alfano, 2019; Granda-Cameron et al., 2017; Longobardi et al., 2021; Naidu et al., 2013). Improving the interprofessional collaboration between members of the HNC MDT, specifically otolaryngologists and SLPs, will potentially enhance the QoL and quality of care provided to HNC patients.

The present research seeks to identify barriers to collaboration between otolaryngologists and SLPs to provide support for improved collaborative practice between the two professions. The following questions are designed to reveal patterns of breakdown in collaborative practice between otolaryngologists and SLPs in the management of HNC:

1. Is there a difference between otolaryngologists and SLP collaborative practices for patients without head and neck cancer compared to otolaryngologists and SLP collaboration for patients with HNC (as reported by otolaryngologists)?
2. Is there a difference in patient symptoms and the amount of collaboration between otolaryngologists and SLPs (as reported by otolaryngologists)?
3. Is there a difference in cancer types and the amount of collaboration between otolaryngologists and SLPs (as reported by otolaryngologists)?

4. Is there a difference in rural versus urban practice and collaboration between otolaryngologists and SLPs (as reported by otolaryngologists)?
5. What factors were most frequently cited by otolaryngologists as barriers to collaboration with SLPs?

CHAPTER 3

Methods

Participants and Recruitment

This is a survey study evaluating the interprofessional collaboration between otolaryngologists and SLPs in the management of HNC. The survey assesses collaboration from the otolaryngologist's perspective. A minimum of 10 otolaryngologist participants are needed to conclude the collection of data for this project. Participants must be licensed otolaryngologists that are currently practicing and treating HNC patients. If participants do not meet the criteria for participation, they will be excluded from the study. Otolaryngologists will be recruited from hospitals and clinics in the Midwest region on the United States, from The Fall Voice Conference in San Francisco, CA, and via social media. The participants will take the online survey or be given a paper copy to complete.

Survey

Informed consent to participate in this study will be provided before collecting responses. On the online survey, informed consent is the first thing to be seen before continuing to the survey questions. On the paper surveys, a printed document of the informed consent will be attached to the paper copy of the survey. The research protocol was examined by the Eastern Illinois University Institutional Review Board (IRB) and certified to meet the federal regulations exemption criteria for human-subjects research. The study was approved on September 15th, 2022 and given the IRB number 22-106. This survey study will stop collecting responses on March 18th, 2023.

The survey is titled "Otolaryngology Survey: Interprofessional Practice with Speech-Language Pathologists (SLPs)." The purpose of this survey study is to assess the existing

interprofessional collaboration between otolaryngologists and SLPs and identify potential barriers to collaborative practices in the management of patients with HNC. There are a total of 12 questions included in the survey. The first three questions are demographic; to provide background information about the participants recruited. The demographic questions include information like if they are a licensed otolaryngologist currently treating HNC patients, how many years of post-residency experience they have, and the population in which they work. Questions four through six focus on current collaborative practices between otolaryngologists and SLPs, specifically in practices with versus without HNC patients. The next two questions (seven and eight) present specific choices to target information about collaboration and referral based on type of HNC and patient symptoms. Question nine addresses potential barriers to otolaryngologists and SLP collaboration and offers the option to choose all answers that apply. See the appendix for the finalized survey.

References:

Abdel-Aty, Y., Charney, S., & Lott, D. G. (2021). The role of speech-language pathologists in otolaryngology resident education. *Annals of Otology, Rhinology & Laryngology*, *130*(4), 377-381.

Alfieri, S., Orlandi, E., & Bossi, P. (2017). The case volume issue in head and neck oncology. *Current Treatment Options in Oncology*, *18*(11), 1-10.

American Head and Neck Society. (2015). American head & neck society statement of professionalism and ethics. *American Head & Neck Society*. https://www.ahns.info/about-ahns/ethics_statement/

American Speech-Language-Hearing Association. (2016, B). Head and Neck Cancer. *American Speech-Language-Hearing Association.* https://www.asha.org/practice-portal/clinical-topics/head-and-neck-cancer/#collapse_7

Berrone, M., Lajolo, C., De Corso, E., Settimi, S., Rupe, C., Crosetti, E., & Succo, G. (2021). Cooperation between ENT surgeon and dentist in head and neck oncology. *Acta Otorhinolaryngological Italica*, *41*(2 Suppl 1), S124.

Boominathan, P., & Desai, V. (2012). Synergy between speech language pathologists and ENT surgeons to promote patient care. *Journal of Laryngology & Voice*, *2*(2), 51–52. https://doi.org/10.4103/2230-9748.106977

Bossi, P., & Alfieri, S. (2016). The benefit of a multidisciplinary approach to the patient treated with (chemo) radiation for head and neck cancer. *Current treatment options in oncology*, *17*(10), 1-10.

Bradley, P. J. (2012). Multidisciplinary clinical approach to the management of head and neck cancer. *European Archives of Oto-Rhino-Laryngology*, *269*(12), 2451-2454.

Brar, S. S., Hong, N. L., & Wright, F. C. (2014). Multidisciplinary cancer care: does it improve outcomes?. *Journal of surgical oncology*, *110*(5), 494-499.

Carroll-Alfano, M. A. (2019). Education, counseling, support groups, and provider knowledge of total laryngectomy: The patient's perspective. *Journal of Communication Disorders*, *82*, 105938.

Carvalho, M. I., Gatti, M., Guedes, R. L., Froes, R. C., Costa, D. R., da Silva Vitor, J., da Silva Santos, P. S., & Berretin-Felix, G. (2021). Swallowing, nutritional status, and salivary flow in patients after head and neck cancer treatment, a pilot study. *Scientific Reports*, 11(1), 1–8. https://doi.org/10.1038/s41598-021-99208-w

Cohen, E.E.W., LaMonte, S.J., Erb, N.L., Beckman, K.L., Sadeghi, N., Hutcheson, K.A., Stubblefield, M.D., Abbott, D.M., Fisher, P.S., Stein, K.D., Lyman, G.H. and Pratt-Chapman, M.L. (2016), American Cancer Society Head and Neck Cancer Survivorship Care Guideline. CA: A Cancer Journal for Clinicians, 66: 203-239. https://doi.org/10.3322/caac.21343

Culton, G. L., & Gerwin, J. M. (1998). Current Trends in Laryngectomy Rehabilitation: A Survey of Speech-Language Pathologists. *Otolaryngology–Head and Neck Surgery*, *118*(4), 458–463. https://doi.org/10.1177/019459989811800405

Cuny, F., Babin, E., Lacau-Saint-Guily, J., Baujat, B., Bensadoun, R., Bozec, A., ... & Vergez, S. (2015). French Society of ENT (SFORL) guidelines for care pathway organization in

head and neck oncology (short version). Early management of head and neck cancer. *European annals of otorhinolaryngology, head and neck diseases*, *132*(4), 205-208.

De Felice, F., Tombolini, V., De Vincentiis, M., Magliulo, G., Greco, A., Valentini, V., Polimeni, A. (2019). Multidisciplinary team in head and neck cancer: a management model. *Medical Oncology*, 36(2). https://doi.org/10.1007/s12032-018-1227-z

Denaro, N., Merlano, M. C., & Russi, E. G. (2016). Follow-up in head and neck cancer: do more does it mean do better? A systematic review and our proposal based on our experience. *Clinical and experimental otorhinolaryngology*, *9*(4), 287.

Di Santo, D., Bondi, S., Giordano, L., Galli, A., Tulli, M., Ramella, B., & Bussi, M. (2019). Long-term swallowing function, pulmonary complications, and quality of life after Supracricoid Laryngectomy. *Otolaryngology–Head and Neck Surgery*, *161*(2), 307-314.

Friedland, P., Bozic, B., Dewar, J., Kuan, R., Meyer, C., Phillips, M. (2011). Impact of multidisciplinary team management in head and neck cancer patients. *British Journal of Cancer*, 104, 1246–1248. https://doi.org/10.1038/bjc.2011.92

Govender, R., Smith, C. H., Taylor, S. A., Grey, D., Wardle, J., & Gardner, B. (2015). Identification of behaviour change components in swallowing interventions for head and neck cancer patients: protocol for a systematic review. *Systematic Reviews*, *4*(1), 1–8. https://doi-org.proxy1.library.eiu.edu/10.1186/s13643-015-0077-4

Granda-Cameron, C., Pauly, M., DeMille, D., Mante, A., Null, S., Malkowski, J., ... & Lynch, M. P. (2017). Gap analysis: a strategy to improve the quality of care of head and neck cancer patients. *J Community Support Oncol*, *15*, 28-36.

Hazzard, E., Haughton, J., Fish, J., Milosavljevic, M., Dickson, V., Boehm, J., Walton, K., & Ashford, B. (2021, A). The experience of nutritional care according to patients with head and neck cancer involved with a combined dietitian, specialist nurse and speech pathologist clinic in a regional Australia: a qualitative longitudinal study. *Supportive Care in Cancer*, *29*(8), 4329–4337. https://doi-org.proxy1.library.eiu.edu/10.1007/s00520-020-05917-9

Hazzard, E., Walton, K., McMahon, A. T., Milosavljevic, M., & Tapsell, L. C. (2021, B). Healthcare professionals' perspectives on the role of dietitians within multidisciplinary head and neck cancer teams: A qualitative multi-site study. *Nutrition & Dietetics*, *78*(5), 506-515.

Jawad, H., Hodson, N. A., & Nixon, P. J. (2015). A review of dental treatment of head and neck cancer patients, before, during and after radiotherapy: part 1. *British dental journal*, *218*(2), 65-68.

Kawashita, Y., Soutome, S., Umeda, M., & Saito, T. (2020). Oral Management Strategies for radiotherapy of head and neck cancer. *Japanese Dental Science Review*, *56*(1), 62–67. https://doi.org/10.1016/j.jdsr.2020.02.001

Lamb, B. W., Sevdalis, N., Taylor, C., Vincent, C., & Green, J. S. A. (2011). Multidisciplinary team working across different tumour types: analysis of a national survey. *Annals of oncology*, *23*(5), 1293-1300.

Landera, M. A., Jocelyn, O., & Donna, L. (2013). Swallowing evaluation of the patient with head and neck cancer. *Perspectives on Swallowing and Swallowing Disorders (Dysphagia)*, *22*(2), 53–60. https://doi.org/10.1044/sasd22.2.53

Licitra, L., Keilholz, U., Tahara, M., Lin, J. C., Chomette, P., Ceruse, P., ... & Mesia, R. (2016). Evaluation of the benefit and use of multidisciplinary teams in the treatment of head and neck cancer. *Oral oncology*, *59*, 73-79.

Lo Nigro, C. L., Denaro, N., Merlotti, A., & Merlano, M. (2017). Head and neck cancer: improving outcomes with a multidisciplinary approach. *Cancer management and research*, *9*, 363.

Longobardi, Y., Savoia, V., Parrilla, C., Marchese, M. R., Morra, L., Mari, G., ... & D'Alatri, L. (2021). Pre-operative speech-language pathology counselling in patients undergoing total laryngectomy: A pilot randomized clinical trial. *Current Psychology*, 1-11.

McCarter, K., Baker, A. L., Britton, B., Halpin, S. A., Beck, A., Carter, G., ... & Forbes, E. (2018). Head and neck cancer patient experience of a new dietitian-delivered health behaviour intervention: 'you know you have to eat to survive'. *Supportive Care in Cancer*, *26*(7), 2167-2175.

Messing, B. P., Ward, E. C., Lazarus, C., Ryniak, K., Kim, M., Silinonte, J., ... & Lee, G. (2018). Establishing a multidisciplinary head and neck clinical pathway: an implementation evaluation and audit of dysphagia-related services and outcomes. *Dysphagia*, *34*(1), 89-104.

Naidu, S., Flack, P., & Rajaram, P. (2013). The hallmarks of successful voice rehabilitation with tracheo-esophageal speech: Perspectives of key role players. *University of Kwazulu-Natal.*

National Cancer Institute. (n.d., A). Head and neck cancers. *National Cancer Institute.* https://www.cancer.gov/types/head-and-neck/head-neck-fact-sheet.

Nekhlyudov, L., Lacchetti, C., Davis, N. B., Garvey, T. Q., Goldstein, D. P., Nunnink, J. C., ... & Siu, L. L. (2017). Head and neck cancer survivorship care guideline: American Society of Clinical Oncology clinical practice guideline endorsement of the American Cancer Society guideline. *Journal of Clinical Oncology*, *35*(14), 1606-1621.

Paleri, V., Carding, P., Chatterjee, S., Kelly, C., Wilson, J.A., Welch, A. and Drinnan, M. (2012). Voice outcomes after concurrent chemoradiotherapy for advanced nonlaryngeal head and neck cancer: A prospective study. *Wiley Online Library, Head Neck*, 34: 1747-1752. https://doi.org/10.1002/hed.22003

Rajkumar, A., Payne, K., Goodson, A., & Tahim, A. (2017). The impact of the multi-disciplinary team approach in managing palliative head and neck cancer patients-A review. *Biomedical Journal of Scientific & Technical Research*, *1*(7), 1823-1829.

Rocke, J., Mclaren, O., Hardman, J., Garas, G., Smith, M. E., Ishii, H., Constable, J., Tikka, T., Wie Liu, Z., & Williams, R. (2019). The role of allied healthcare professionals in head and neck cancer surveillance: A systematic review. *Clinical Otolaryngology*, *45*(1), 83–98. https://doi-org.proxy1.library.eiu.edu/10.1111/coa.13471

Russell, B. (2009). Voice therapy after radiation. *SpeechPathology.com.* https://www.speechpathology.com/ask-the-experts/voice-therapy-after-radiation-988

Sohn, H.-O., Park, E.-Y., Jung, Y.-S., Lee, J.-Y., & Kim, E.-K. (2020). Effects of the professional oral care management program on patients with head and neck cancer after radiotherapy: A 12-month follow-up. *Journal of Dental Sciences*, *16*(1), 453–459. https://doi.org/10.1016/j.jds.2020.09.010

Soukup, T., Lamb, B. W., Arora, S., Darzi, A., Sevdalis, N., & Green, J. S. (2018). Successful strategies in implementing a multidisciplinary team working in the care of patients with cancer: an overview and synthesis of the available literature. *Journal of multidisciplinary healthcare*, *11*, 49.

Starmer, H. M., & Gourin, C. G. (2013). Is speech language pathologist evaluation necessary in the nonoperative treatment of head and neck cancer?. *The Laryngoscope*, *123*(7), 1571-1572.

Taberna, M., Gil Moncayo, F., Jané-Salas, E., Antonio, M., Arribas, L., Vilajosana, E., ... & Mesía, R. (2020). The multidisciplinary team (MDT) approach and quality of care. *Frontiers in Oncology*, *10*, 85.

Talwar, B., Donnelly, R., Skelly, R., & Donaldson, M. (2016). Nutritional management in head and neck cancer: United Kingdom National Multidisciplinary Guidelines. *The Journal of Laryngology & Otology*, *130*(S2), S32-S40.

Thibeault, S. (2007). What Are the Roles of the Laryngologist and Speech Language Pathologist in Management of Patients With Dysphonia? Interview with Charles Ford, MD, and Diane Bless, PhD. *Perspectives on Voice and Voice Disorders*, *17*(3), 4-7.

Thong, J. F., Mok, P., & Loke, D. (2010). A quality assurance survey to improve communication between ENT specialists and general practitioners. *Singapore medical journal*, *51*(10), 796.

Verma, N., Tan, X., Knowles, M., Bernard, S., & Chera, B. (2019). Patient-reported outcomes for dental health, shoulder-neck dysfunction, and overall quality of life after treatment

with radiation for head and neck cancer. Laryngoscope Investigative Otolaryngology, 4(3), 300–306. https://doi.org/10.1002/lio2.262

Wiederholt, P. A., Connor, N. P., Hartig, G. K., & Harari, P. M. (2007). Bridging gaps in multidisciplinary head and neck cancer care: nursing coordination and case management. *International Journal of Radiation Oncology* Biology* Physics*, *69*(2), S88-S91.

Wilson, J. A., Carding, P. N., & Patterson, J. M. (2011). Dysphagia after nonsurgical head and neck cancer treatment: patients' perspectives. *Otolaryngology--head and neck surgery*, *145*(5), 767-771.

Wood, K. (2005). Audit of nutritional guidelines for head and neck cancer patients undergoing radiotherapy. *Journal of human nutrition and dietetics*, *18*(5), 343-351.

Zuydam, A. C., Rogers, S. N., Grayson, K., Probert, C. F. (2020). Routine Use of Swallowing Outcome Measures Following Head and Neck Cancer in a Multidisciplinary Clinic Setting. International Archives of Otorhinolaryngology. 2021, v. 25, n. 2 [<https://doi.org/10.1055/s-0040-1708896>. Epub 14 June 2021. ISSN 1809-4864. https://doi.org/10.1055/s-0040-1708896.

Appendix

Otolaryngology Survey: Interprofessional Practice with Speech-Language Pathologists (SLPs)

1. Are you a licensed otolaryngologist treating patients with head and neck cancer? If no, please discontinue the survey.
    a. Yes
    b. No

2. How many years of post-residency otolaryngology experience do you have?
    a. 0-5 years
    b. 6-10 years
    c. 10+ years

3. Do you work in an urban area (population 50,000 or more)?
    a. Yes
    b. No

4. How often do you refer to and collaborate with SLPs to manage patients WITHOUT head and neck cancer (i.e., muscle tension dysphonia, dysphagia after stroke, etc.)?
    a. Never
    b. Sometimes
    c. About half of the time
    d. Most of the time
    e. Often

5. How often do you refer to and collaborate with SLPs for any reason to manage patients WITH head and neck cancer?
    a. Never
    b. Sometimes
    c. About half of the time
    d. Most of the time
    e. Often

6. Do you refer MOST patients with head and neck cancer for prophylactic speech therapy?
    a. Yes
    b. No

7. Check the boxes below to indicate the amount of patients for whom you refer to or collaborate with an SLP for the following cancer symptoms.

Symptoms	**None**	**Some**	**Many**	**Almost All**
Dysphagia				
Difficulty Chewing				
Malnutrition/Dehydration				
Voice Dysfunction				
Articulation Deficit(s)				

8. Check the boxes below to indicate the amount of patients for whom you refer to or collaborate with an SLP for the following head and neck cancer tumor sites.

Types of cancer	**None**	**Some**	**Many**	**Almost All**
Mandible				
Retromolar Trigone				
Tongue				
Palate				
Salivary Gland(s)				
Base of Tongue				
Vallecula				
Epiglottis				
Pyriform Sinus(es)				
Pharyngeal Wall(s)				
Larynx				

9. Which of the following do you consider as barriers to referring to and collaborating with SLPs for management of HNC patients. Check all that apply.
    - ❑ SLP turnover
    - ❑ Lack of SLP availability
    - ❑ Collaboration is not a priority
    - ❑ SLP spread between multiple offices
    - ❑ Don’t see the need for collaboration

- ❑ Other health professionals are meeting patient needs
- ❑ Not enough time
- ❑ Distance between ENT and SLP offices
- ❑ Inexperience in collaboration
- ❑ Inexperience in practice
- ❑ Administrative barriers
- ❑ Productivity constraints
- ❑ SLP is unwilling to collaborate
- ❑ SLP is unable to collaborate
- ❑ Unfamiliar with the SLP in the area
- ❑ Delays in referral processing
- ❑ OTHER – Please list in the comment box below

Comment Box

10. If those barriers were removed, would you refer and collaborate more?
    a. Yes, definitely
    b. Yes, maybe
    c. No, maybe
    d. No, definitely

11. If you answered "No, maybe" or "No, definitely" to the previous question, why? Why would you not refer or collaborate more if the opportunity presented itself? Please be specific.

Comment Box

12. Do you have any additional information or comments you would like to add?

Comment Box