Oncologists Perception about the Role of Speech and Language Therapy in management of Communication and Swallowing Difficulties of Head and Neck Cancer Patients.

By

Md. Hashibul Hasan

Session: 2014-2015

Bachelor of Science in Speech & Language Therapy

Bangladesh Health Professions Institute (BHPI)

(The academic institute of CRP)

Faculty of Medicine, Affiliated by

University of Dhaka

Oncologists Perception about the Role of Speech and Language Therapy in management of Communication and Swallowing Difficulties of Head and Neck Cancer Patients.

A research presented to the

Bangladesh Health Professions Institute

(*The academic institute of CRP*)

University of Dhaka

Md. Hashibul Hasan

hashibulslt101@gmail.com

Supervisor

MD. Shohidul Islam Mridha

Lecturer of Speech and Language Therapy

Department BHPI, CRP, Savar, Dhaka-1343

In partial fulfillment of the requirements for the degree of

B.Sc. in Speech and Language Therapy

[February, 2019]

APPROVAL

We the under signed certify that we have carefully read and recommended to the Faculty of Medicine, University of Dhaka, for the acceptance of this dissertation entitled- **"Oncologists Perception about the Role of Speech and Language Therapy in management of Communication and Swallowing Difficulties of Head and Neck Cancer Patients"**

Submitted by- **Md. Hashibul Hasan**

Bachelor of Science in Speech and Language Therapy (B. Sc. in SLT**)**

……

Md. Shohidul Islam Mridha

Supervisor

Lecturer of Speech and Language Therapy Dept.

BHPI, CRP, Chapain, Savar, Dhaka-1343.

……..

Md. Sazzad Hossain

Head of the department

Department of Speech and Language Therapy BHPI, CRP, Chapain, Savar, Dhaka-1343.

……..

Professor Dr. Md. Omar Ali Sarker

Principal

BHPI, CRP, Chapain, Savar, Dhaka-1343.

Declaration

I am **Md. Hashibul Hasan;** declare that the work presented here is my own. All sources used have been cited correctly. Any mistakes or inaccuracies are my own. I also want to make sure that any single discussion of the study will not be harmful to participants.

Signature: Date:

Md. Hashibul Hasan

4th year student of

Bachelor of Science in Speech and Language Therapy

(B. Sc. in SLT)

Session: 2014-2015

BHPI, CRP, Savar, Dhaka-1343.

Dedication

Dedicated to my……

Beloved Father & Mother

CONTENT

List of Annexure

LIST OF FIGURES

LIST OF TABLE

ACKNOWLEDGEMENTS

At first I want to express my gratitude to the Almighty Allah who has given me enough ability, patience and intelligence for completion of this study successfully in time. I am grateful to my family members for supporting and encouraging me in crucial time of the study.

I would like to thank my honorable and praiseworthy supervisor Md. Shohidul Islam Mridha for his excellent guidance, thoughtful suggestions and encouragement during conducting this project study. Due to his endless support during the crucial of the study it was possible for me to conduct the research from beginning to the ending. I also would like acknowledge the name of my honorable teachers Sazzad Hossain and Nahid Parvez Tonmoy to help me by providing valuable guidelines.

I am thankful to Dr. Abdullah Al Mamun, registered of NICRH and Dr. Rownak Jahan, radiation oncologist of NICRH for their support to collect the sample.

I am very much thankful to all of my classmates specially Taiyeba, Mim, Fatema and Farjana for their inspiration and direct help in my study. I would like to remember some of my junior Nusrat and Miraj for helping me to translate my questionnaire.

Finally my endless thanks to all of the participants to participate in my project and made my research successful.

ABBREVIATIONS

AHP: Allied Health Professional

BHPI: Bangladesh Health Professions Institute

RT: Radiotherapy

CT: Chemotherapy

CRT: Chemo-radiotherapy

CRP: Centre for the Rehabilitation of the Paralysed

HNC: Head and Neck Cancer

HPV: Human Papilloma virus

HNSCC: Head and Neck Squamous Cell Carcinoma

NICRH: National Institute of Cancer Research and Hospital

SLT: Speech & Language Therapy

DMCH: Dhaka Medical College & Hospital

SPSS: Statistical Package for Social Science

ABSTRACT

Title: “Oncologists Perception about the Role of Speech and Language Therapy in management of Communication and Swallowing Difficulties of Head and Neck Cancer Patients”.

The aim of the study is to find out oncologists perception about the role of SLT in management of communication and swallowing difficulties of head and neck cancer patients.

To identify the scope of Speech and Language therapy practice in head and neck cancer patients from oncologist’s point of view.

The study is based on a quantitative type of cross sectional survey design paradigm. 40 samples were selected using a purposive (non-probability) sampling technique in accordance with the inclusion and exclusion criteria. Bangla translated semi-structured self-inventory questionnaire was used for data collection. Data was analyzed by Descriptive statistics and presented in a table and bar graph.

Communication and swallowing difficulties is a life threatening problem in head and neck cancer patients. Investigator just completed his study in two hospital and got average number of participants who were oncologists. The major findings of this study were based on oncologists’ perception about role of speech and language therapy in management of communication and swallowing difficulties of head and neck cancer patients. According to the study in 40 participants (oncologists), 55% participants was male on the other hand 45% participants was female. Overall investigator find that participants provide treatment to head and neck cancer patients with communication and swallowing problem and in spite of having communication and swallowing problem less than half number of participants did not refer this patients to speech and language therapists. Investigator found not significant between referral rate to speech and language therapists from oncologist because sample size was small and there was many more limitation so that this association was not significant. The investigator found that a large number of participants (oncologists) believed speech and language therapists play vital role in treating HNC patients in a multidisciplinary team. The speech and language therapist has a bigger role in the head and neck cancer specialist team that supports the person with HNC who taking

RT, CT and CRT to improving their communication and swallowing problem. It was a small study the participant's number was small expectantly in future there are more study will be done in this topic with large number of sample. SLTs have vast role in HNC area. SLT has large area to work and more study is needed in our country so that SLTs can strongly establish their role in HNC and provide the standard treatment to the patients and thus improve patient's quality of life. We all know about SLTs have major role in HNC area but most of the SLTs don't show much interest in this area. If more study will be conducted in this area it will open scope for SLTs in our country.

.

Chapter- I Introduction

1.1 Introduction

Bangladesh is a developing country. There are numerous kind of diseases present in our country and cancer is one of the most common. Cancer in non-communicable disease, in cancer head and neck cancer is one of the major part of cancer disease. There are lots of people are suffering from this cancer in our country. Speech and Language therapy is a very new profession in our country many people they don't know about it and its role. Head and neck cancer is one of biggest areas where speech and language therapist can work. According to (Hussain, 2013) Bangladesh is world's 9th most populous country where 142 million people live, the number of cancer patients in Bangladesh is 13 to 15 lakh and among them every year 2 lakh patients newly assessed with HNC and it come out that mainly male suffer from esophagus cancer, stomach cancer, lymphomas, and multiple myeloma. Lung cancer and oropharynx cancer is most common and high ranked in male and cervix uteri cancer and breast cancer is common in female. Mouth and oropharynx cancer, lung cancer, and esophagus cancer these are another type of cancer which may also affect women. According (Shaikh et al., 2017) it is a sensational ascent in the rate of Human papillomavirus (HPV) – related head and neck squamous cell carcinoma (HNSCC) in the earth. And the disease varies by geology, sex and ethnicity. In Bangladesh, Tobacco and areca nut is very common in men and for that most of the male suffer from related cancer of Tobacco and areca nut. Around 600,000 people suffer from these diseases and in developing countries the death rate is 300,000. So it measures that it has become vast medical problem in overall world. Chaturvedi et al. (2011) states that in US from 1988 to 2004 oropharyngeal cancer patients increased. And total number is 225% (95% CI, 208% to 242%), it decreased into 50% for HPV negative cancers. According to (Perry & Frowen, 2006) Head and neck cancer patients have to suffer from swallowing problem, speech and many voice problems and speech pathologists are the professionals who work with those patients with head neck cancer who face these problem. The treatments of HNC affects persons speech and swallowing it also decrease a person's activity, performance and their daily life and for speech pathologist head neck cancer is most critical and specialized part. If

oncologists refer the patients to speech pathologist before treatment for guideline, it would be helpful for the patients to follow the guidelines during and after treatment of HNC and if needed, there are many scientific and evidence based treatment which patients can get from the SLP's. Appropriate guideline and after taking treatment of HNC proper diagnosis and evidence based therapy can reduce their complication of speech and swallowing difficulty. According to (Murthy et al., 2017) In India 60% tobacco user's intake direct tobacco. It increases the possibility of their oral cancer. In 2009- 2010 global adult tobacco surveyed 34.6% adults intake tobacco and from them 25.1% were only smokers, 59.5% were direct tobacco consumers and 15.4% of them are both smokers and tobacco consumers. The threat of HNSCC increases in smokers than nonsmokers and it also depends on the timing of smoking and amount of smoking. It also reveals that tobacco and alcohol intake is a basic factors for HNSCC all over world. According to (University College London Hospitals, 2017) Speech language therapists work on voice, swallowing and communication rehabilitation of patients with HNC and they provide treatment to the head and neck cancer patients as inpatients and outpatients. According to (Lazarus, 2000) for the management of patients with head and neck cancer a multidisciplinary team is very important where the surgeon, radiation oncologist, medical oncologist, speech-language pathologist, radiologist, maxillofacial prosthodontics, social worker (or psychiatrist), and physical therapist, and oncology nurse will be included. And before treatment SLP should perform an assessment of swallowing and speech of patients which helps the SLP to treat the patients properly on voice, speech, swallowing.

This research study investigates oncologists' perception about the role of speech and Language therapy in management of communication and swallowing difficulties of HNC patients. The research examines the perceptions of oncologists toward SLT and role of SLT in treating communication and swallowing difficulties of HNC patients.

1.2 Literature Review:

According to (ward et al., 2017) Head and neck cancer (HNC) as a complex heterogeneous disease, that requires treatment from a bunch of health specialists multidisciplinary team including speech language pathology (SLP). The main objective of various telepractice models is to help patients with HNC and services optimize management of swallowing and communication disorders. International practice guidelines guides that patients should be managed within a team of multidisciplinary cancer care specialists, including speech language pathology (SLP).

In a multidisciplinary team (MDT) of a patient with HNC all health professionals work towards a goal for enhancing the life quality reducing the symptoms of diseases and disorders. Clarke, Radford, Cofeey and Stewart (2016) Recommended in their study that all HNC patients should have an assessment of their speech and swallowing before they start their oncological treatment: radiotherapy, chemotherapy etc. as these treatment procedures directly affect the patient's speech (voice) and swallowing. Post treatment assessment and following therapeutic techniques are also essential for voice restoring and improving the quality of swallowing the patients with HNC. Ongoing treatment is a must for a quick recovery according to the needs of the patient with HNC by the guidelines of SLP is greatly recommended for maintaining vocal hygiene, swallowing maneuvers appropriately. (Clarke et al., 2016) Interprofessional collaboration is very essential for the patients with HNC where all the professionals: oncologist, radiologist, speech and language therapist work together to improve the health as well as quality and standard of life of the patient. To know each other's specific role is necessary in a team for the continuous development and progress of a specific client: making exact goal for each patient with HNC according to their needs and desires. Again, desirable outcome will never come out if the members health professionals are not aware of their specific referral to other health related professionals and roles to the patients. Sufficient knowledge on SLT among the health professional may lead a patient having perfect treatment for lifetime. Doctors too work with SLPs cross worldwide, and knowledge and perception of them on SLP profession changed overtime. Florance, and Rabidoux, (1980) cited in (Norgard, Damms, DeGreen and Lestrade. (2017) that Doctors are unaware bout the diseases and conditions treated by SLTs. Again, a study done in 2011 on doctors' knowledge on SLPs role that still found huge gap on the understanding of doctors on SLPs

working areas on different aspects. (Norgard et al, 2017) According to (Shah et al., 1995) Squamous cell carcinoma is the most common cause behind all HNC rest of the patients have adenocarcinomas of salivary origin, or tumors of somatic soft tissues melanomas. Almost 4% HNC in Us are malignant tumors but in case of developing and south Asian countries it is more prevalent and the rate is 35% for Oral cancers. With 15% patients there may be a viral cause leading to carcinoma of HNC. According to (Pauloski et al., 2002) Head and neck cancer patients may report a complaint of dysphagia before and after treatment for their disease. Before treatment patient with oral, pharyngeal or laryngeal lesions demonstrate swallow function that is significantly different form that of control subjects treated head and neck cancer patients also demonstrate impaired swallowing function. According to (Logemann et al., 1997) Rehabilitation is much needed for the patients with HNC as they face difficulty in speech and swallowing with the ongoing treatment of HNC that makes a barrier in the patient's life standard, life style and day to day life activities. Some patients may not know about the role of SLP so pretreatment counselling should be ensured by all the team members: surgeon, medical oncologist, radiologist for the continuous treatment. Total 102 patients were used as sample in the study were participants showed effects of oral cancer resection and reconstruction procedures related with speech and swallowing. Participants were assessed before and after the treatment (1- 3 months). 102 and 92 patients got therapy for respectively speech and swallowing problems. According to (South East Scotland Cancer Network, 2018) Speech and Language Therapist in dealing head and neck cancer patients. A speech and language therapist (SLT) working with head and neck cancer patients will- Provide detailed assessment, treatment and management of communication and swallowing problems. These problems may be temporary or permanent effects of the tumor or treatment. Possess an in depth understanding of the impact that communication and swallowing problems caused by cancer or its treatment can have on patients and their family. Aim to maximize a patient's communication and / or swallow potential and provide supportive care in order to help the patient (and family) achieve their optimum quality of life. Speech and Language Therapist will also assess and treat are- Communication Problems (Speech impairment as result of oral cancer, Voice impairment as a result of laryngeal cancer, Voice restoration (voice prosthesis) and alaryngeal voice (artificial larynx communication aid) as a result of a laryngectomy. Eating, Swallowing and Drinking Problems (Dysphagia), Problems chewing,

controlling the food / liquid in the mouth and also Problems swallowing, restricted oral movements (i.e. tongue and jaw). According to (Starmer et al., 2011) Authors tried to find out the impact of perfect referral styles and perfect treatment procedure on HNC patients, so they used 118 patients with HNC through retrospective cohort study, these study population were referred having SLP service before starting radio or chemotherapy. Participants who joined SLP during and after treatment of HNC where the outcomes were measured between two groups: those patients who started following MDT guidelines and patients whose conditions were not evaluated by MDT. Authors got that patients who started by MDT service had more SLP visit rather than patients who were not started with MDT. So, it is crucial to start following guidelines by MDT with SLP for the best outcomes of speech, voice swallowing during and after HNC treatment. According to (Koike et al., 2002) Kitasto University in Japan completed a study using 65 laryngectomee patients and evaluated their speech after their rehabilitation done by SLP and got a surprising result that among them that they showed quick recovery of speech. From the total 65 patients with HNC 41.5% acquired practical esophageal speech and 90.8% acquired esophageal speech and the rest 9.2% could not acquire alaryngeal speech and the percentage were very low compared to other studies (12.5-33%) done in Japan.

1.3 Significance of the study:

In Bangladesh Speech and Language therapy is a new profession. Still there is no study available on Oncologists‟ perception about role of Speech and Language Therapy in management of head and neck cancer patient's communication and swallowing difficulties. This study would be helpful for finding the attitudes and expectation among health professionals about the role of Speech and Language Therapy (SLT).

Because it would increase awareness among oncologists about the role of Speech and Language Therapy (SLT). This study also would help to establish this service as an individual consultant side by side oncologist. Increase the interaction level between oncologist and Therapist that would be optimized to enhance delivery of Speech and language Therapy (SLT). By knowing the need of SLT oncologist would give value the role and contribution of Speech therapist. As there have not been any research papers that explore the concepts such as oncologists‟ perception and expectations towards the role of Speech and Language Therapy in Bangladesh. So to increase referral of patient and also patient's benefit from those health professionals it need to conduct such kind of research. Through this study, the researcher would be able to achieve its aim and objectives which become helpful to explore the oncologist's perception about Speech and Language Therapy. To investigate oncologists‟ perceptions of Speech therapists as members of the health team because this study arise from the current emphasis that is placed on good multidisciplinary teamwork for effective rehabilitation and the awareness that different team members often have different perceptions of their respective roles within the team. Research and clinical experience demonstrate that quality of life after head and neck cancer treatment is significantly improved when a patient has early access to a SLP in a multidisciplinary setting. (Ellie & Allen, 2018)

Investigator search the online database but did not found any study on the oncologists‟ perception of the role of Speech and Language Therapy (SLT) in management head and neck cancer patient's communication and swallowing difficulties. Even there have not been any similar study in the developed country to explore the perception of Speech and Language Therapy (SLT) because of their well-established health system.

Key words: Speech and Language Therapy, Oncologists‟ perception, Head and Neck Cancer.

1.4 Operational Definitions:

Speech and Language Therapy:

SLTs assess and treat speech, language and communication problems in people of all ages to help them communicate better. They also assess, treat and develop personalized plans to support people who have eating and swallowing problems.

Speech and language therapy profession is similar health profession in Bangladesh though it is new in Bangladesh. Speech and language therapists (SLTs) provide life-improving treatment, support and care for children and adults who have difficulties with communication, eating, drinking or swallowing. (Sylvia Tay, 2005)

In this study investigator will use the term ‘Speech and Language Therapy’ as Speech and Language Therapy is the part of health profession. They work with children and adults who have difficulties with communication, speech (fluency, voice, articulation) language (receptive, expressive) or with eating, drinking and swallowing.

Perception:

The term perception is described as sensory processing. The sense organs transduce physical energy from the outside world, which is encoded and then referred to the brain through sensory neurons for understanding. In more, perception is being conscious, or phenomenal, experience of watching, listening, understanding, touching, etc. (Elizabeth, 2005)

In this research investigator will use the word “Perception” as interpretation of oncologists understanding about role of SLT regarding handling head neck cancer patients with communication and swallowing difficulties.

Head and Neck Cancer:

According to (The American Speech-Language-Hearing Association, 2018) Head and neck cancer (HNC) is a type of carcinoma that occurs due to malignant tumors that

most commonly arise from the moist squamous cell mucosa as well as the lining of the HN areas. These are categorize to their primary site of beginning as malignancies of the oral and nasal area (lip, anterior two-thirds of the tongue, gums, oral mucosa, floor of mouth, hard palate, maxilla, and mandible), pharynx, including the nasopharynx, oropharynx (soft palate, tongue base, tonsils, and adenoids), and hypo pharynx, larynx (supraglottic, glottic, and subglottic regions) and salivary glands. HNC usually originates within one of these primary sites. Occasionally, it can be described as secondary in nature, with the primary site elsewhere in the body.

In this study Investigator used the term 'Head and Neck cancer' because the aim of this study is to find out the perception of oncologist about the role of SLT regarding management head and neck cancer patients with communication and swallowing difficulties.

Oncologist:

According to (National Cancer Institute, 2017) A doctor who has special degree, training in diagnosing and treating cancer in adults are known as Oncologist. They may have special areas of knowing on: radio therapy, chemotherapy, hormonal therapy, biological therapy, and targeted therapy. A medical oncologist often is the main health care provider for a carcinoma patient. A medical oncologist also gives supportive care and coordinate with other health professionals (medical doctors, radiologist, nurse, Speech Language Therapist) for ensuring the better quality service and speedy recovery of a carcinoma patient.

In this study investigator use the word "Oncologist" as Head and Neck Cancer Specialist/ Surgeon.

1.5 Aim and objectives of the Study:

Aim:

To explore oncologists perception about the role of SLT in management of communication and swallowing difficulties of head and neck cancer patients.

Specific objectives:

- ✓ To explore the socio-demographic status of oncologists.
- ✓ To know the oncologists knowledge about role of SLT in head and neck cancer patients.
- ✓ To identify the scope of Speech and Language therapy practice in head and neck cancer patients from oncologist's point of view.

Chapter- II Methodology

2.1 Study Design:

In this study the quantitative type of cross sectional survey design used where investigator tried to explore oncologists' perception about the role of SLT in management communication and swallowing difficulties of head and neck cancer patients. The cross sectional survey provides information about large population from a smaller number of samples (Bailey, 1997). As cross sectional study is a survey design and this study requires collection of data from the sample within a time frame (Depoy & Gitlin, 1998).There will be another reason for choosing the cross-sectional survey because cross-sectional survey is less expensive (Depoy & Gitlin, 1998). According to (Hicks, 2000) Quantitative research is techniques of research which collect numerical information from subject. A survey is used to describe characteristics of a population and is the way by which the number of population is described on or more variable (age, sex etc.) (Frankel & Wallen, 2000)

In this study investigator used cross sectional survey study because he wants to know the oncologists knowledge about role of SLT in head and neck cancer patients. Cross sectional survey is also time saving process, it takes only little time also less expensive because investigator collected information meet with the participants for a single period of time and investigator asked role of SLT related questionnaires.

2.2 Study Population:

In this study population were the oncologists those who were diagnosed with head & neck cancer patients treated by radiotherapy, chemotherapy or chemo-radiotherapy.

2.3 Study Place:

The study place is Dhaka.

- National Institute of Cancer Research and Hospital (NICRH) Mohakhali, Dhaka.
- Bangladesh Cancer Society Hospital & Welfare Home, Mirpur, Dhaka.

2.4 Sample size:

A sample is a smaller group taken from the population. Sometimes the sample size may be big and sometimes it may be small, depending on the population and the characteristics of the study (Bailey, 1997).According to Hicks (2000) usually a survey takes large number of sample. A large sample is more likely to be representative of the population than a smaller one. There is no available oncologists' perception about the role of SLT in management communication and swallowing difficulties of head and neck cancer patients. That's why investigator will use the standard sample size estimation. The equation of standard sample size is as-

We know that-

Sample size:

$$n = \frac{z^2pq}{d^2}$$

$$n = \frac{z^2p(1-p)}{d^2}$$

$$n = \frac{(1.96)^2 \times (0.5) \times (1 - 0.5)}{(0.05)^2}$$

$$n = 384.16$$

Where,

Percentage of population, P= 0.5

Prevalence, q= 1-0.5= 0.5

Confidence level, Z= 1.96 at 95% (Standard value of 1.96)

Degree of accuracy, d= 0.05 (Standard value of 0.05)

Required sample size, n=?

So, Estimate Sample size 384. But due to time limitation, 40 oncologists selected as study sample.

2.5 Sampling Procedure:

In this study the sample was selected through purposive sampling procedure to accomplish the aim and objective. The purposive sampling was used as its comparatively easy, cost effective and quickest sampling method (Bailey, 1997).

Finding the appropriate number and type of people take part in the study is called sampling (Hicks, 1999). Subjects were collected by using purposive sampling from the population who met all inclusion criterions. Here purposive sampling was used because the investigator could not find out whoever was available, but could use judgment or inclusion and exclusion criteria to select a sample (Frankel and Wallen, 2000). Another reason for using purposive sampling was that it would be the easiest, cheapest and quicker method of sample selection.

2.6 Sample Selection Criteria

Inclusion Criteria:

- Oncologists who are practicing in Dhaka city.
- Both male and female oncologist selected.
- Clinical experienced (01 year) oncologists will be taken.

Exclusion Criteria:

- Non practicing oncologists will be excluded.
- Intern doctors and no clinical experience oncologist are excluded.
- Participants who are not willing to take part in this study.

2.7 Data Collection tool:

A semi structured questionnaire was used as a data collection instrument. The English questionnaire were converted into Bangla to ask the participants during the interview. In that time some other necessary materials also were used like pen, pencil, white paper and clipboard. The investigator took permission from each participants by using a written consent from.

2.8 Data Collection Procedure:

Investigator will use semi- structured self-inventory questions and collected data from the participants through face to face interview. Investigator clarified that the participant had the right to refuse to answer of question during completing questionnaire. The interview was conducted in Bangla to make it easier for all participants to understand but also allowed them to respond more freely as English is not their first language. Answers were recorded on a recorder and notes were also

taken. Consent forms, questionnaires, tape recorders, pens and papers were used for data collection. To conduct the interview the researcher will make a time schedule for individual participant according to their will and the interview will be conducted in a quiet and secure room. According to (Bailey, 1997) "Face to face interview will performed because it allows the interviewer to interact directly and to develop rapport with the interviewee and also permits a full range of non-verbal behaviors to be observed in more natural setting"

2.9 Data Analysis:

Investigator used descriptive statistics for data analysis. Because descriptive statistics are commonly used to make sense of survey data (Hicks, 2000). Bailey (1997) suggested that descriptive statistics are those that describe, organize, and summarize data. It includes such things as frequencies, percentages, description of central tendency and descriptions of relative position. Data will analysis through the software named Statistical Package for Social Science (SPSS). A computer program statistical package for social science. Version 22 (SPSS) will as a data analysis tool. To show the findings or result investigator will use bar graph investigator will use bar graph, pie chart and table.

2.10 Pilot Study

Investigator conducted a pilot study in Dhaka before starting the main data collection. Investigator chooses 4 participants who were not included in the main study. Pilot study is a preliminary run of the main study to highlight any problems which can then be corrected and it is important always to run some pilot study before starting the experiment. Because it would conducted for appropriate subject selection and also check the appropriateness of data collection tool. From this study investigator knew how much time is needed for completing data collection. If investigator face any unexpected situation then investigator would be aware in final data collection. So the researcher performed a pilot study before starting the main study. Researcher took one week for pilot study and visited oncologists' chamber in Dhaka and consulted with qualified speech Therapist to identify the oncologists' perception. After finishing the pilot study consider some points based on Bangladeshi aspects among oncologists and according to this aspects modified some questionnaire, find out the questionnaire that

would help to seek the actual perception among oncologists'. By this process it took 10 minutes to collect data and extra 7-8 minutes to explain the purpose of the study.

2.11 Ethical consideration

The project protocol of this study was presented in front of the ethics committee for approval.

Permission was granted for this study. Permission was also provided by the head of the institutions from where the researcher collected data. Each and every participant in this study was informed about the purpose of the study. Participants were assured that they have right to refuse to answer any question during interview session if they are not comfortable with the question and also assured that the study would have no harm to the participants physically and mentally because it was a survey study and was not any experiments. All information and the personal identity of participants were kept confidential.

Chapter- III Result

Data were analyzed by descriptive statistics and calculated as percentages and presented by using bar graphs, pie charts, and tables.

3.1.1 Gender

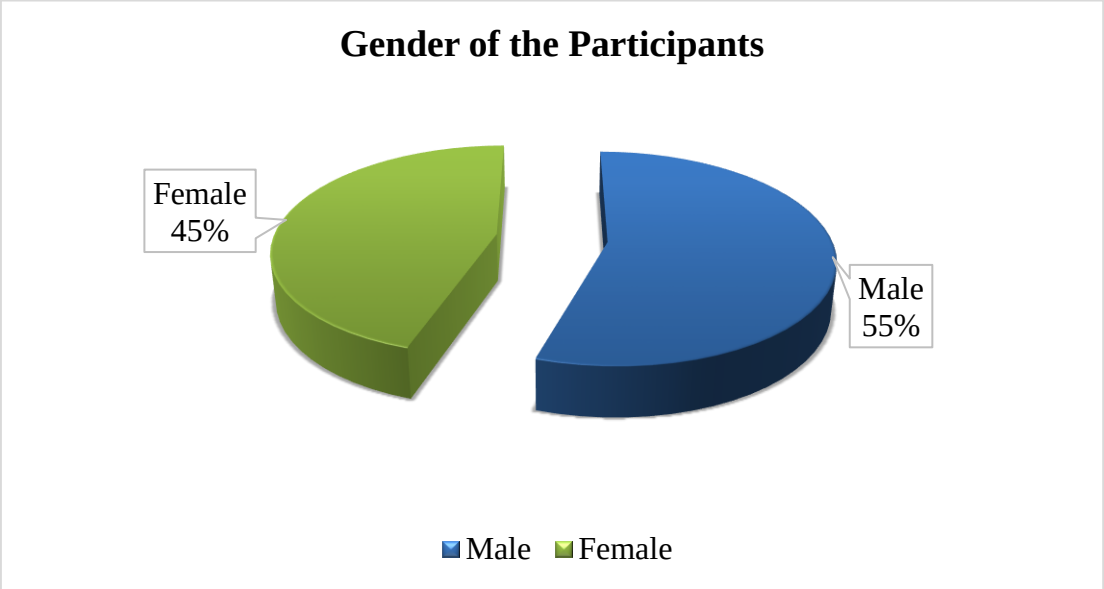

Figure- 1: Gender of the participants

The pie chart represented that majority of participants 55% (22) were male and others participants 45% (18) were female.

3.1.2 Educational Qualification

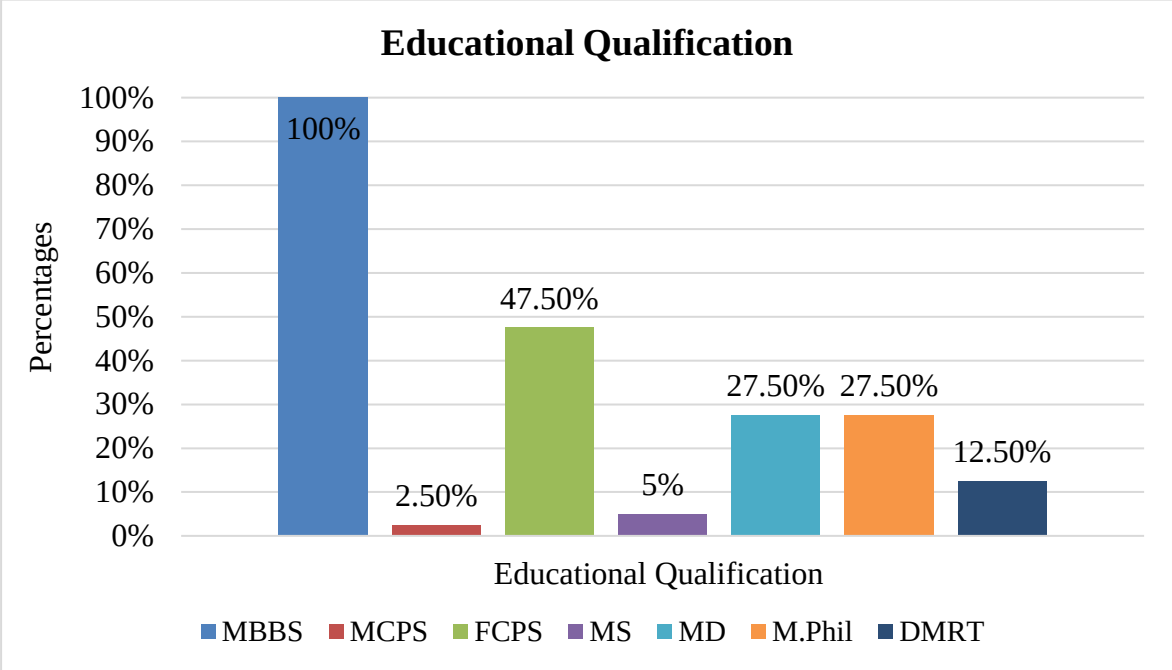

Figure-2: Educational Qualification

In this graph, horizontal part represents the qualification level of the participants and the vertical part represents percentages. Maximum participants 100% (40) were MBBS. Among the participants 47.50% (19) were FCPS, 27.50% (11) of them were MD and M.Phil. Minimum participants 2.50% (1) were MCPS and 5% (2) were MS. However 12.50% (5) participants had DMRT degrees.

3.1.3 Area of Specialty of the Oncologist

Area of Specialty of the Oncologist	Frequency (*n*)	Percentage (%)
Gynecologic Oncologists	**1**	**2.5**
Medical Oncologists	**6**	**15**
Pediatric Oncologists	**0**	**0**
Radiation Oncologists	**30**	**75**
Surgical Oncologists	**3**	**7.5**
Hematologist Oncologists	**0**	**0**
Other	**0**	**0**

Table- 1: Area of Specialty of the Oncologist

The table shows that among the 40 participants more than half of the participants 75% (30) were radiation oncologists. Some of the participants 15% (6) were medical oncologists. Limited participants 7.5% (3) were surgical oncologists and 2.5% (1) were gynecologic oncologists.

3.1.4 Clinical Experience of Oncologist

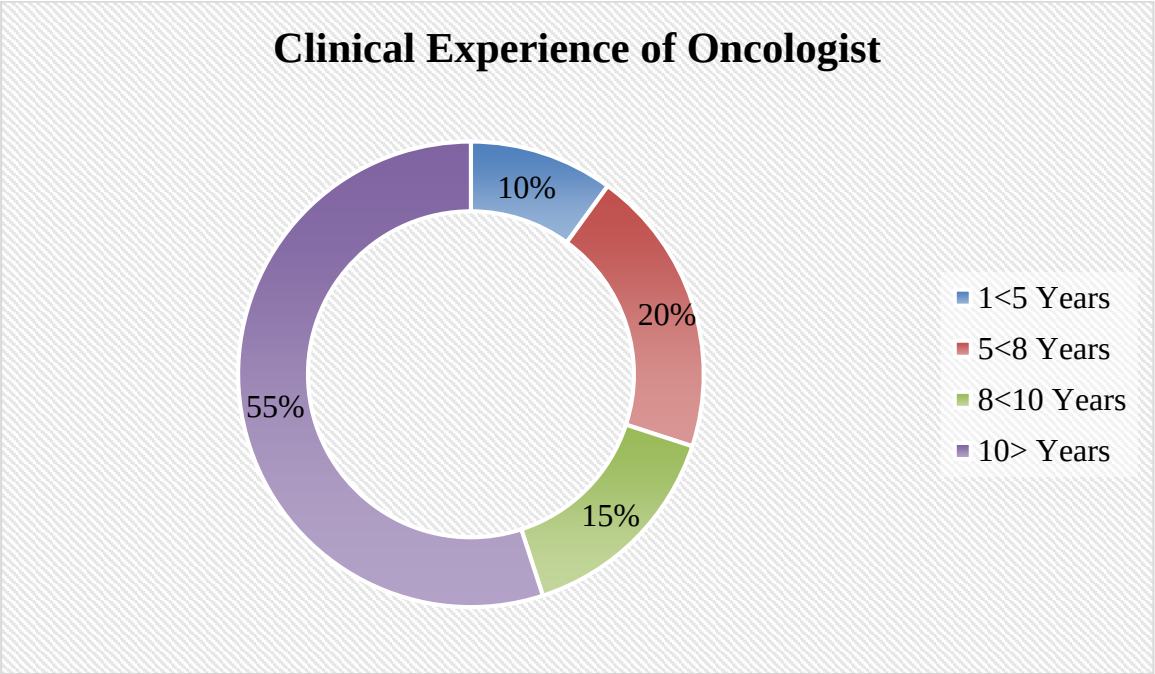

Figure- 3: Clinical Experience of Oncologist

In the pie chart almost half of the participants 55% (22) have more than 10 years of clinical experience. Among them 20% (8) participants have 5<8 years of clinical experience. 15% (6) participants have 8<10 years of clinical experience where 10% (4) have only 1<5 years of clinical experience.

3.2.1: Experience regarding providing consultation of HNC patients with communication and swallowing difficulties

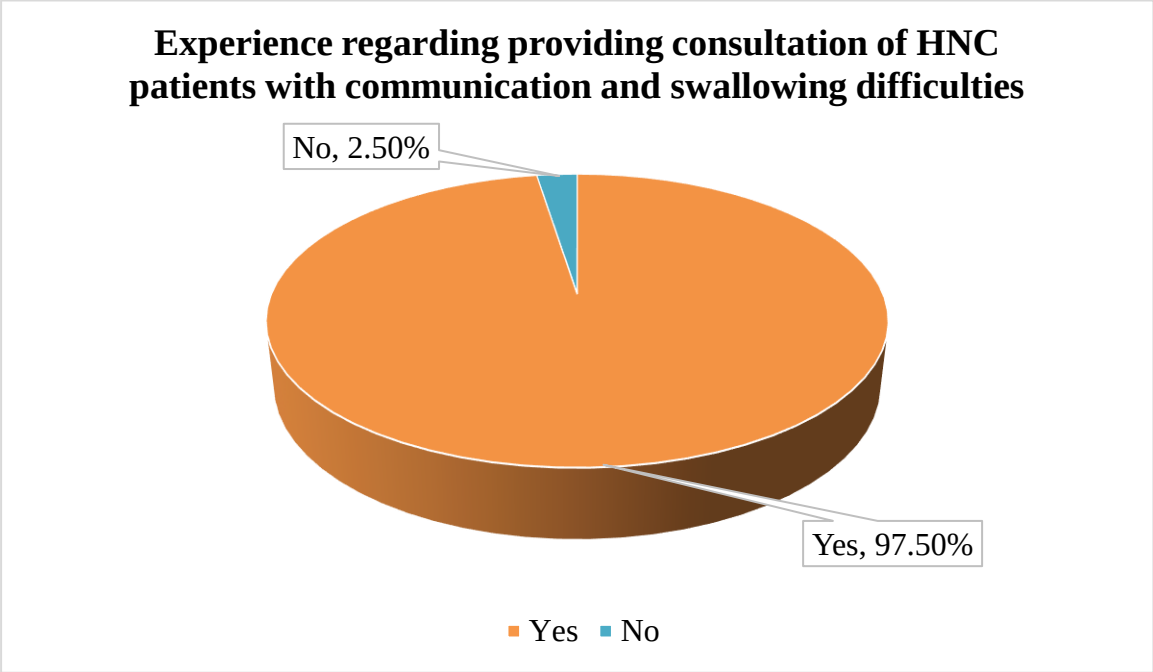

Figure- 4: Experience regarding providing consultation of HNC patients with communication and swallowing difficulties

In this pie chart, almost everyone 97.50% (39) participants responded yes and 2.50% (1) participants responded no.

3.2.2: Types of major problem related to SLT were complained by the patient with HNC

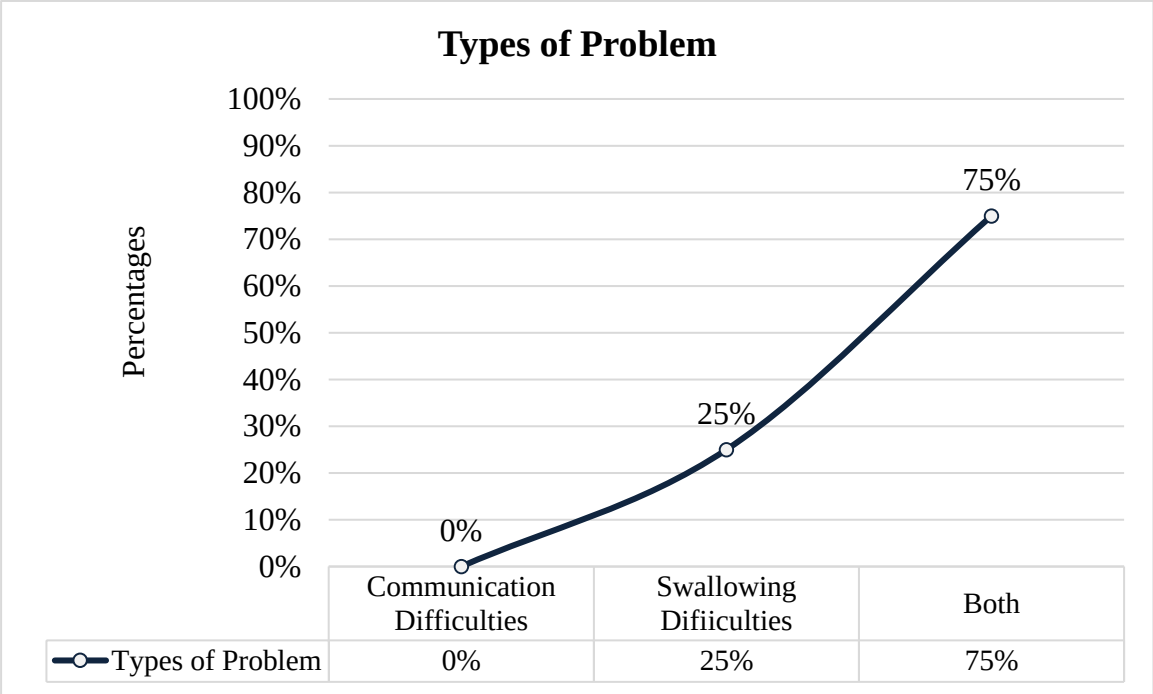

Figure- 5: Types of Problem

In this line graph the horizontal part represents the types of major problem related to SLT were complained by the patient with HNC which is categorized in three types- communication difficulties, swallowing difficulties and both. Most of the participants 75% (30) said both where 25% (10) said only swallowing difficulties.

3.2.3: Common complication of RT, CT and Surgery with HNC as per oncologist

Common Complication	Frequency (*n*)	Percentage (%)
RT		
Mucositis	**37**	**92.5**
Pain	**34**	**85**
Salivary gland infection	**34**	**85**
Nausea/Vomiting	**27**	**67.5**
Mucosal infections	**23**	**57.5**
Skin Problem	**11**	**27.5**
Hair loss	**26**	**65**
Loss of appetite	**33**	**82.5**
Change of taste	**31**	**77.5**
Change in voice	**2**	**5**
Other	**0**	**0**
CT		
Change of taste	**33**	**82.5**
Tooth decay and gum disease	**8**	**20**
Inflamed mucous membranes in the mouth	**31**	**77.5**
Dry mouth	**22**	**55**
Bacteria in the mouth	**26**	**65**
Other	**8**	**20**
Surgery		
Nerve trauma	**19**	**47.5**
Thoracic duct injury	**4**	**10**
Vascular injury	**8**	**20**
Facial nerve injury	**34**	**85**
Laryngeal nerve injury	**29**	**72.5**
Other	**8**	**20**

Table- 2: Common complication of RT, CT and Surgery with HNC as per oncologist

The table displays that after radio therapy the common complications faced by head and neck cancer patients are mucositis 92.5% (37), pain 85% (34), salivary gland infection 85% (34), nausea/vomiting 67.5% (27), mucosal infections 57.5% (23), skin problem 27.5% (11), hair loss 65% (26), loss of appetite 82.5% (33), change of taste 77.5% (31) and change in voice 5% (2). As like radio therapy chemo therapy also creates some complications and the common complications confronted by the head and neck cancer patients are change of taste 82.5% (33), tooth decay and gum disease 20% (8), inflamed mucus membrane in the mouth 77.5% (33), dry mouth 55% (22), bacteria in the mouth 65% (26) and others 20% (8). Most head neck cancer patients have to go through surgery and met some complications and they are nerve trauma 47.5% (19), thoracic duct injury 10% (4), vascular injury 20% (8), facial nerve injury 85% (34), laryngeal nerve injury 72.5% (29) and others 20% (8).

3.2.4: Familiarity of oncologist to speech and language therapy profession in Bangladesh

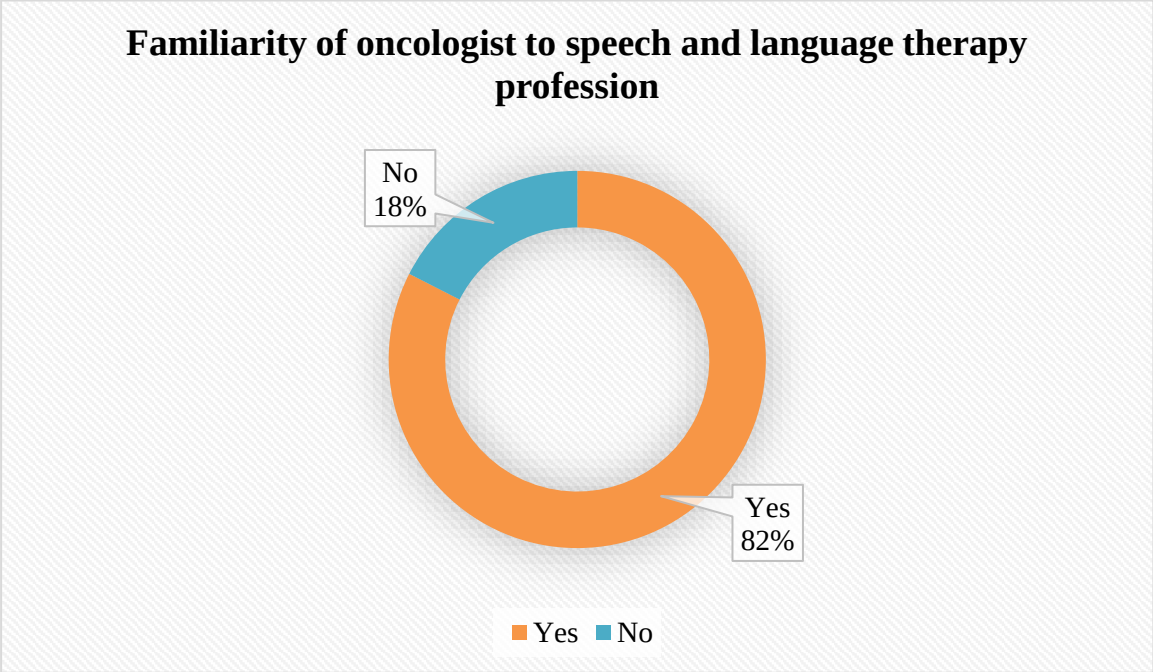

Figure- 6: Familiarity of oncologist to speech and language therapy profession in Bangladesh

In the pie chart most of the participants 82% (33) are familiar with speech and language therapy profession in Bangladesh where 18% (7) are still unfamiliar.

3.2.5: Role of speech and language therapist in treating communication and swallowing problem of head and neck cancer patients as per oncologist

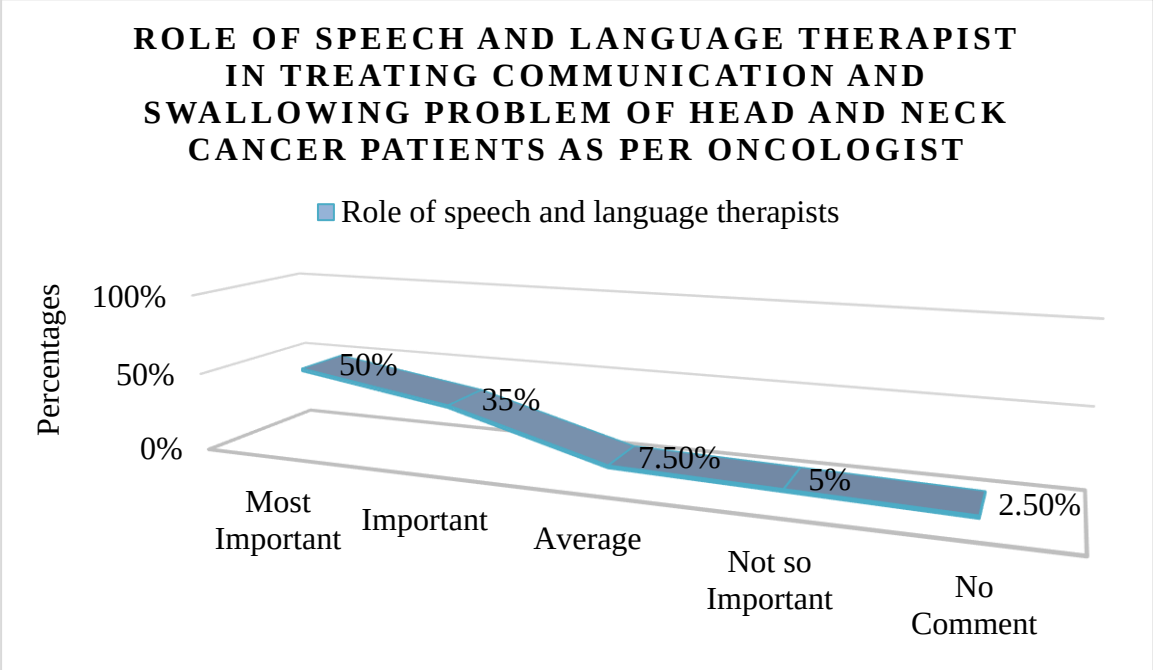

Figure- 7: Role of speech and language therapist in treating communication and swallowing problem of head and neck cancer patients as per oncologist

The horizontal part signifies the role of speech and language therapists and the vertical part signifies percentages of participants. Almost half of the participants 50% (20) feel speech and language therapists is most important where 35% (14) participants feel it is important. Only a few 7.50% (3) participants feel average, 5% (2) participants feel it is not so important and 2.50% (1) participant did not comment.

3.2.6: Referral rate to speech and language therapists from oncologist

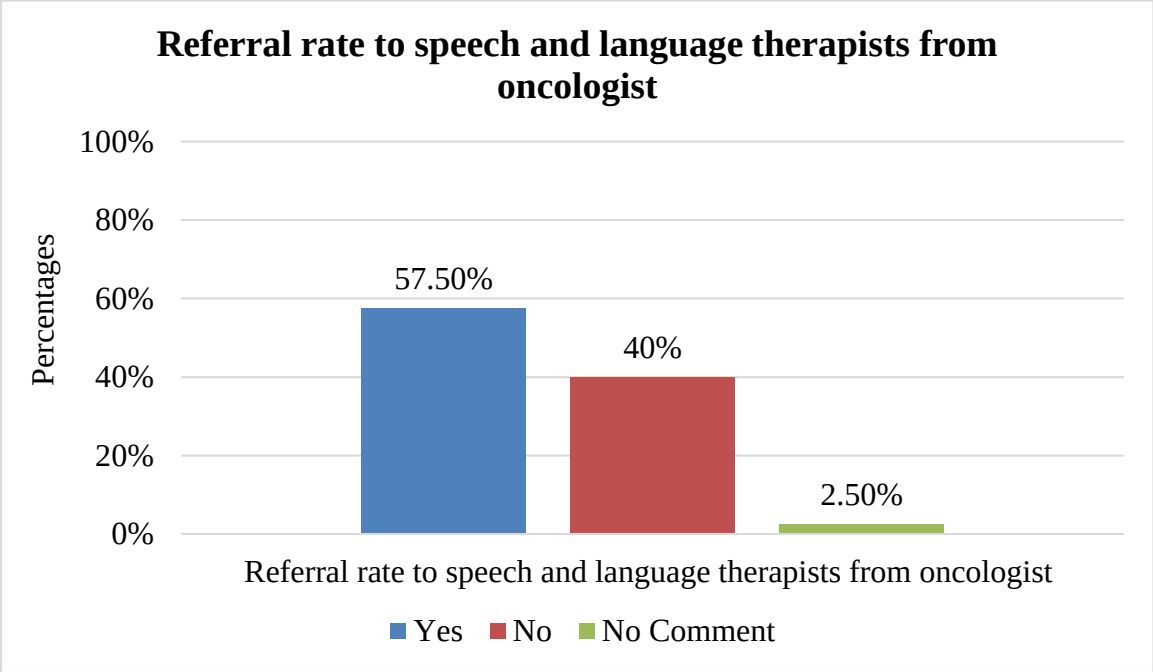

Figure- 8: Referral rate to speech and language therapists from oncologist

In this graph, the horizontal part signifies the referral rate to speech and language therapists while the vertical part signifies the percentages of participants. Most of the participant 57.50% (23) refer to speech and language therapist but 40% (16) participant never refer and 2.50% (1) participant did not comment.

3.2.7: Speech and language therapy required in every cancer hospital as per oncologist

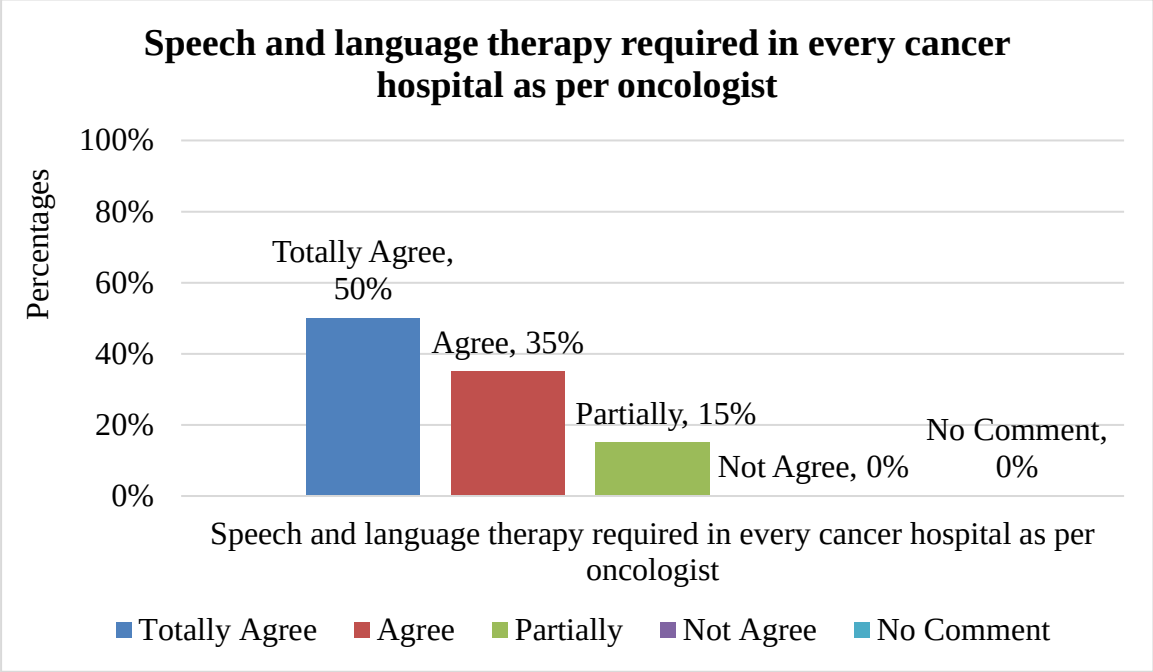

Figure- 9: Speech and language therapy required in every cancer hospital as per oncologist

In this graph, the horizontal part indicates the speech and language therapy required in every cancer hospital as per oncologist while the vertical part indicates the percentages of participants. Among 40 participants maximum 50% (20) participants totally agreed with the statement, 35% (14) participants agreed and 15% (6) participants were partially agreed.

3.2.8: Association between Experience regarding providing consultation of HNC patients with communication and swallowing difficulties and Referral rate to speech and language therapists from oncologist

Association between Experience regarding providing consultation of HNC patients with communication and swallowing difficulties and Referral rate to speech and language therapists from oncologist was examined using chi-sq test. The association was not significant ($p>0.05$)

Table 3: Association between Experience regarding providing consultation of HNC patients with communication and swallowing difficulties and Referral rate to speech and language therapists from oncologist

Referral rate vs Experience regarding		Referral rate to speech and language therapists from oncologist			
		Yes	No	No Comment	Total
Experience regarding providing consultation of HNC patients with communication and swallowing difficulties	Yes	23	15	1	39
	No	0	1	0	1
Total		23	16	1	40

$x^2 = 1.538$ df = 2 p = 0.463

3.2.9: Association between Speech and language therapists play vital role in treating HNC patients in a MDT team and Speech and language therapy required in every cancer hospital as per oncologist

Association between Speech and language therapists play vital role in treating HNC patients in a MDT team and Speech and language therapy required in every cancer hospital as per oncologist was examined using chi-sq test. The association was not significant ($p>0.05$)

Table 4: Association between Speech and language therapists play vital role in treating HNC patients in a MDT team and Speech and language therapy required in every cancer hospital as per oncologist

SLT service required vs SLT agreed role in MDT		Speech and language therapy required in every cancer hospital as per oncologist			
		Totally Agree	Agree	Partially	Total
Speech and language therapists play vital role in treating HNC patients in a MDT team	Yes	20	12	4	36
	No	0	0	1	1
	No Comment	0	2	1	3
Total		20	14	6	40

x^2 = 9.312 **df = 4** **p = 0.054**

Chapter- IV Discussion

The data collected from renowned hospitals by self-perceived questionnaire from two hospitals in Dhaka.

Among the total respondents the gender percentage was 55% male and 45% was female.

In this study all participants were completed MBBS. Among them highest participants has completed the FCPS (47%) degree in order to be an oncologist, besides that MD and M Phil (27%) in this area were in second choice of oncologist as post-graduation degree. In few cases the DMRT, MCPS, MS degree were found. So no oncologist has found without any post-graduation degree that ultimately is an indication of their level of knowledge and experience in the field of head and neck cancer.

In this study highest no of participants were radiation oncologist 75% and minimum no of participants were medical oncologist 15%. There were other oncologist whom were specialist in different sector (surgical oncologists, gynecologic oncologists). But Beisecker et al (1994) revealed in similar study that maximum participants were 75% medical oncologist and in minimum number of participants were 40% surgical a radiation oncologist. So it can be assume that the limited number of surgical oncologist were in that hospital which is not enough to treat the large number of patients.

In this study among the participants most of the participants were experienced more than 10 years. And minimum of the participants were experienced less than 5 years'. Rest of the oncologist had less than 10 years' experience. Result indicated that almost half of the oncologist have more than 10 year's clinical experience and most experienced oncologist can treat the patient with HNC more specifically.

In this study nearly 97.50% participants responded that they have provided consultation of HNC patients with communication and swallowing difficulties and only 2.50% participants responded that they did not provide consultation of HNC patients with communication and swallowing difficulties. So it can be assume that most of the oncologist had provided consultation of HNC patients with

communication and swallowing difficulties. This indicates the Oncologist is the first referral source to speech and language therapist for the communication and swallowing intervention. The later part of the study revealed this in a systematic way.

Amongst total participants, highest number of the 75% participants said both means they get complain about communication and swallowing difficulties where minimum of the 25% participant complain only for swallowing difficulties. Aplak et al (2007) interpreted in his study that head and neck cancer patients have problems with communication and swallowing difficulties. So it can be inferred that communication and swallowing difficulties are common difficulties faced by patient with HNC.

The study result demonstrate that, majority of the participants claim common complication of RT, which have to face by patients with HNC are mucositis , pain and salivary gland infection average . Very small number of patient have to go through on change in voice, loss of appetite, skin problem, change in taste. A study also found that type of complications of patients with radio therapy mucositis, change in taste, voice, and pain. (Rose et al., 2002). Common complication complained by patient taking CT as per oncologist change of taste, inflamed mucus membrane in the mouth and very small number of person claim tooth decay and gum disease, other complication like Dry mouth, bacteria in the mouth are also happened. Another study also found that complication of chemotherapy in head and neck cancer patients such as- change of taste, dry mouth, inflamed mucus membrane in the mouth. (National Cancer Institute, 2002). Surgery is a common treatment for HNC and that time maximum of the patients complain to the oncologist about facial nerve injury, laryngeal nerve injury .where very minimum has complained about nerve trauma and other complication like thoracic duct injury, vascular injury, and more. There is a study conducted by Prathamesh, (2010) where investigator found head and neck cancer patient's complication with surgery they have gotten facial nerve injury, laryngeal nerve injury, vascular injury and nerve trauma. So it can be inferred that according to the oncologist these complication are very common in patient with HNC with RT, CT, and surgery.

Amongst all participants maximum 82% participants were familiar with speech and language therapy profession in Bangladesh where minimum 18% participants were still unfamiliar with SLT. So it can be assume that Speech and Language therapy is a known profession than before in Bangladesh.

In this study almost half of the participants feel that speech and language therapists are most important where minimum of the participants feel it is not important. In a study conducted by Lazarus, (2000) where indicated that SLP/SLT give treatment in management communication and swallowing deficit of head and neck cancer patients. So it can be assume that as SLT treat communication and swallowing patient so SLT are most important in treating communication and swallowing problem of head and neck cancer patient and can help the oncologist.

The study of the result demonstrated that a large number of participant 57.50% refer to speech and language therapist. Few participants 40% never refer to SLT. So it can be said that oncologist refer patients with communication and swallowing difficulties but they do not go to speech and language therapists to take intervention or oncologists never referred the patients to SLT. It also can be happen because of knowledge gap regarding speech and language therapy profession they deny to take treatment or rehabilitation.

In this study half of the participants were totally agreed with the statement that Speech and language therapy required in every cancer hospital as per oncologist, very small number of participants were partially agreed. So it can be inferred that because of a conflict decision among them and authority still now there is no unit of SLT and it hamper patient's treatment. So every cancer institute should recruit SLT.

In these study there is no significant relationship (p=0.463) found in the association. So it can be inferred that as they had limited knowledge about SLT so that their referral is also limited which is not significant with consultation of HNC patients with communication and swallowing difficulties and according to problem their referral rate to SLTs'.

Association between Speech and language therapists play vital role in treating HNC patients in MDT and Speech and language therapy required in every cancer hospital as per oncologist showed no significant relationship (p=0.463) between them. But Clarke et al (2016) state that there a huge responsibility SLTs' have in treating HNC patients in a multi-disciplinary team. So it can be assume that though association said that speech and Language therapy is not necessary for MDT but it is clear from the another study that for treating the patient with HNC with communication and

swallowing difficulties SLT have vital role and to create multidisciplinary team SLT recruitment is necessary.

The findings of the study tells us that oncologist find communication and swallowing difficulties during consultation of patients with HNC and these are very common difficulties, and there are some common complication face by patient with HNC after taking RT, CT, and surgery like change of taste, dry mouth, inflamed mucus membrane in the mouth, mucositis, voice, and pain etc. To treat them SLT can help the oncologist but half of the oncologist never refer them (patients) to SLT and half of the oncologist refer patients to the SLT but because of their knowledge gap perhaps they (patients) never go to the SLT. Finding also showed that every cancer hospital should create a SLT unit to serve the patients and though majority of the participants didn't agree that SLT plays vital role in MDT but it prove by evidenced literature that SLT have vital role in MDT.

Chapter- V Limitations

The investigator found some limitations of the study throughout the study period in different aspects. The investigator found the limitations in finding the literature on oncologists' perception about role of SLT in management of communication and swallowing difficulties of head and neck cancer patients. The investigator only covered small area of subject for this reason result cannot be generalize. The study was conducted only 2 setting in Dhaka. The data cannot therefore be generalized for practice of documentations by all Speech and Language Therapy profession in Bangladesh. Time and resources were limited that have a great impact on the study. The duration of data collection is also a challenge because of limited availability of the participant in given time. The investigator not able to access large number of participants.

Chapter- VI Policy Implication

The study will be helpful for the people with communication and swallowing difficulties, their family, speech and language therapists and other professionals. From the study SLT will able to know that there is a big area to work with HNC patients. The study will be helpful for SLTs to make plan for the intervention of people with communication and swallowing difficulties. Other professionals will able to know the importance of Speech and Language Therapy in HNC area. This study also will be helpful to establish our role in HNC patients. This study will help Speech and Language therapy service providers to start new practice of management and assessment for the people with HNC patients who had present communication and swallowing difficulties. SLT professional body can approach to the policy maker of health service provider and government to recruit the SLT that will ensure more standard treatment and rehabilitation.

Chapter- VII Recommendation

Conducting this study the investigator found oncologists perception about role of speech and language therapy in management of communication and swallowing difficulties of head and neck cancer patients. But following things could be done in future including Speech therapy services in different organization those were working in this area. Randomization and large number of participants are recommended for further study. The sample could be collected more different places. As far investigator knows this was first ever study of oncologists' perception about role of SLT in management of communication and swallowing difficulties of HNC patients in Bangladesh. Further study could be conducted speech problem after taking RT, CT and CRT of HNC patients.

Chapter- VIII Conclusion

Communication and swallowing difficulties is a life threatening problem in head and neck cancer patients. Investigator just completed his study in two hospital and got average number of participants who were oncologists. The major findings of this study were based on oncologists' perception about role of speech and language therapy in management of communication and swallowing difficulties of head and neck cancer patients. According to the study in 40 participants (oncologists), 55% participants was male on the other hand 45% participants was female. Overall investigator find that participants provide treatment to head and neck cancer patients with communication and swallowing problem and in spite of having communication and swallowing problem less than half number of participants did not refer this patients to speech and language therapists. Investigator found not significant between referral rate to speech and language therapists from oncologist because sample size was small and there was many more limitation so that this association was not significant. The investigator found that a large number of participants (oncologists) believed speech and language therapists play vital role in treating HNC patients in a multidisciplinary team. The speech and language therapist has a bigger role in the head and neck cancer specialist team that supports the person with HNC who taking RT, CT and CRT to improving their communication and swallowing problem. It was a small study the participant's number was small expectantly in future there are more study will be done in this topic with large number of sample. SLTs have vast role in HNC area. SLT has large area to work and more study is needed in our country so that SLTs can strongly establish their role in HNC and provide the standard treatment to the patients and thus improve patient's quality of life. We all know about SLTs have major role in HNC area but most of the SLTs don't show much interest in this area. If more study will be conducted in this area it will open scope for SLTs in our country.

References List

Aplak, B., Malkoç, M., Gelecek, N., & Sen, M. (2007). Quality of life of Turkish patients with head and neck cancer. *Turkish Journal of Cancer*, *37*(4), 129.

Beisecker, A. E., & Moore, W. P. (1994). Oncologists' perceptions of the effects of cancer patients' companions on physician-patient interactions. *Journal of Psychosocial Oncology*, *12*(1-2), 23-39. Doi: 10.1300/J077V12N01_02

Bailey, D. M. (1997).*Researcher for the health professional: A practical guide* (2nded.). USA: Davis Company.

Chaturvedi, A. K., Engels, E. A., Pfeiffer, R. M., Hernandez, B. Y., Xiao, W., Kim, E., & Liu, L. (2011). Human papillomavirus and rising oropharyngeal cancer incidence in the United States. *Journal of clinical oncology*, *29*(32), 4294-301. Doi: 10.1200/JCO.2011.36.4596

Clarke, P., Radford, K., Coffey, M., and Stewart, M. (2016). Speech and swallow rehabilitation in head and neck cancer: United Kingdom National Multidisciplinary Guidelines. *The Journal of Laryngology & Otology*, 130:176-180. Doi: 10.1017/S0022215116000608

David Eisele., & Richard V. Smith. (2009). *Complications in Head and Neck Surgery* (2nded.). USA: Mosby.

Depoy, E., & Giltlin, L. N. (1998). *Introduction to research; understanding and applying multiple strategies* (2nded.). New York: Mosby.

Elizabeth A. Styles. (2005). *Attention, Perception and Memory: An Integrated Introduction* (1sted.). Hove and New York: Pychology Press.

Ellie. M & Allen S. Ho. (2018). *Multidisciplinary Care of the Head and Neck Cancer Patient (1sted.*). Switzerland: Springer International Publishing.

Frankel, J., and Wallen, N., (2000). *How to design and evaluate Research in Education.* USA: McGraw Hill.

Hicks, C. M. (1999).*Research methods for clinical therapists* (3rded.). New York: Churchill Livingstone.

Hussain, S. M. A. (2013). Comprehensive update on cancer scenario of Bangladesh. *South Asian journal of cancer,* 2(4), 279-284. Doi: 10.4103/2278-330X.119901

Koike, M., Kobayashi, N., Hirose, H., & Hara, Y. (2002). Speech rehabilitation after total laryngectomy. *Acta Oto-Laryngologica*, *122*(4), 107-112.

Lazarus CL. (2000). Management of swallowing disorders in head and neck cancer patients: optimal patterns of care. *Seminars in Speech and Language*. 21(4):293-309. Doi: 10.1055/s-2000-8383

Logemann, J. A., Pauloski, B. R., Rademaker, A. W., & Colangelo, L. A. (1997). Speech and swallowing rehabilitation for head and neck cancer patients. *Oncology-Huntington,* 11(5), 651-658.

Murthy, V., Calcuttawala, A., Chadha, K., d'Cruz, A., Krishnamurthy, A., Mallick, I., & Patil, A. (2017). Human papillomavirus in head and neck cancer in India: Current status and consensus recommendations. *South Asian journal of cancer*, *6*(3), 93-98. Doi: 10.4103/sajc.sajc_96_17.

National Cancer Institute (2002). *Oral Complications of Chemotherapy and Head/Neck Radiation (PDQ®).* Retrieved August 2018, from https://www.cancer.gov/about-cancer/treatment/side-effects/mouth-throat/oral-complications-pdq#section/_5

Norgard, M., Damms, C., DeGreen, C., and Lestrade, G. (2017). Knowledge and Perception of Speech-Language Pathologists by Allied Health Personnel in the Acute Care Hospital Setting. *The W's Undergraduate Research Journal*.1:6. https://www.muw.edu/images//colleges/gordy/merge/vol1/King_F inal.pdf

National Cancer Institute, (2017). *Definitions of Oncology*. Retrieved August 2018, from https://www.cancer.gov/publications/dictionaries/cancer-terms/def/medical-oncologist

Pauloski, R. B., Rademaker W. A., Logemann A. J., Lazarus L. C., Newman, L., Hamner, A., MacCracken, E., Gaziano, J., and Stachowiak, L. (2002). Swallow function and perception of dysphagia in patients with head and neck cancer. *Head Neck.* 24:555 65. Doi:10.1002/hed.10092

Perry, A., & Frowen, J. (2006). Speech and swallowing function in head and neck cancer patients: what do we know? *Cancer forum*. 30(3): 178-183.ISSN:0311-306X

Prathamesh S pai. (2010). Complications in Head and Neck Surgery. *Otorhinolaryngology Clinics*, 2(1), 61-67

Rose-Ped, A. M., Bellm, L. A., Epstein, J. B., Trotti, A., Gwede, C., & Fuchs, H. J. (2002). Complications of radiation therapy for head and neck cancers: the patient's perspective. *Cancer nursing*, *25*(6), 461-467.

Shah, JP and Lydiatt W. (1995). Treatment of cancer of the head and neck. *A cancer Journal for Clinicians*, 45:352-368. Doi: 10.3322/canjclin.45.6.352

Shaikh, H. M., Khan I. A., Sadat, A., Chowdhury, H. A., Jinnah, A. S., Gopalan, V., Lam, K. A., Clarke, T.W. D., McMillan, J.A. N., Johnson, W. N. (2017). Prevalence and types of high-risk human papillomaviruses in head and neck cancers from Bangladesh. *BMC Cancer*, 17: 792. Doi: 10.1186/s12885-017-3789-0

South East Scotland Cancer Network. (2018). *Role of speech and language therapist.* Retrieved January 2018, from http://www.scan.scot.nhs.uk/Documents/Role of SLT - professional doc April 13.pdf

Sroussi, H. Y., Epstein, J. B., Bensadoun, R. J., Saunders, D. P., Lalla, R. V., Migliorati, C. A., & Zumsteg, Z. S. (2017). Common oral complications of head and neck cancer radiation therapy: mucositis, infections, saliva change, fibrosis, sensory dysfunctions, dental caries, periodontal disease, and osteoradionecrosis. *Cancer medicine*, *6*(12), 2918-2931. Doi: 10.1002/cam4.1221

Starmer, H., Sanguineti, G., Marur, S., & Gourin, C. G. (2011). Multidisciplinary head and neck cancer clinic and adherence with speech pathology. *The Laryngoscope*, *121*(10), 2131-2135. DOI: 10.1002/lary.21746

Sylvia Tay. (2005). RCSLT's Clinical Guidelines (Royal College of Speech & Language Therapists) (1st ed). United Kingdom: Speechmark

The American Speech-Language-Hearing Association, (2018). *Definition of Head and Neck Cancer*. Retrieved August 2018, from https://www.asha.org/Practice-Portal/Clinical-Topics/Head-and-Neck-Cancer/

University College London Hospital. (2017). *Speech and Language Therapy Service Head and Neck Cancer*. Retrieved January 2018, from https://www.uclh.nhs.uk/OurServices/ServiceA-Z/Cancer/HNCAN/Pages/SLT.aspx

Vokes, E. E., Weichselbaum, R. R., Lippman, M. S., and Hong, K. W. (1993). Head and Neck Cancer. *The New England Journal of Medicine.* 328:184-194.Doi: 10.1056/NEJM199301213280306

Ward, C. E., Wall, R. L., Burnsb, L. C., Cartmill, B., and Hill, J. A. (2017). Application of telepractice for head and neck cancer management: a review of speech language pathology service models. *Current Opinion in Otolaryngology & Head and Neck Surgery*. 25:169-174. Doi: 10.1097/MOO.0000000000000357

Annexure

Annexure – I

নাক কান গলায় ক্যান্সার আক্রান্ত রোগীদের যোগাযোগ ও গলধঃকরণ জনিত সমস্যায় স্পীচ এন্ড ল্যাঙ্গুয়েজ থেরাপির ভূমিকা সম্পর্কে ক্যান্সার বিশেষজ্ঞদের মতামত/ধারণা সম্পর্কিত প্রশ্নাবলী

১. ব্যক্তিগত তথ্য সমূহ

ডাটা কোড ঃ ☐☐

ক্রমিক নং	প্রশ্ন	কোডিং ক্যাটাগরি	কোড
১.১	লিঙ্গ	১= পুরুষ ২= মহিলা	☐
১.২	যোগ্যতা	১= এমবিবিএস ২= এমসিপিএস ৩= এফসিপিএস ৪= এমএস ৫= এমডি ৬= এমফিল ৭= পিএসডি ৮= অন্যান্য	১ ২ ৩ ৪ ৫ ৬ ৭ ৮ একাধিক উত্তর গ্রহণযোগ্য
১.৩	যে বিষয়ে বিশেষজ্ঞ	১= রেডিয়েশন অনকোলজিষ্ট ২= মেডিক্যাল অনকোলজিষ্ট ৩= পেডিয়াট্রিক অনকোলজিষ্ট ৪= সার্জিক্যাল অনকোলজিষ্ট ৫= গায়নেকোলজিক অনকোলজিষ্ট ৬= হেমাটোলজিষ্ট অনকোলজিষ্ট ৭= অন্যান্য ----------	☐
১.৪	ক্লিনিক্যাল অভিজ্ঞতার সময়কাল	১= ১<৫ বছর ২= ৫<৮ বছর ৩= ৮<১০ বছর ৪= >১০ বছর	☐
১.৫	বর্তমানে কর্মরত প্রতিষ্ঠানের নাম	১= DMCH ২= NICRH ৩= BSMMU ৪= DLMCH ৫= BCSH ৬= অন্যান্য ----------	☐
১.৬	পদবী	১.প্রফেসর / সিনিয়র কনসালটেন্ট ২.সহযোগী প্রফেসর / কনসালটেন্ট ৩.অ্যাসিসটেন্ট প্রফেসর / জুনিয়র কনসালটেন্ট ৪.সিনিয়র লেকচারার / রেজিস্টার ৫.লেকচারার/ মেডিক্যাল অফিসার	☐

২. গবেষণার মূল প্রশ্নসমূহ

ক্রমিক নং	প্রশ্ন	সম্ভাব্য উত্তরসমূহ	উত্তর
২.১	আপনি কি কোন নাক কান গলায় ক্যান্সার আক্রান্ত রোগী দেখেছেন যার যোগাযোগ অথবা গলধঃকরনজনিত সমস্যা ছিল?	১=হ্যাঁ ২=না ৩=মন্তব্য নেই। ** যদি হ্যাঁ হয় দয়া করে তাহলে ২.২-২.৪ প্রশ্নগুলোর উত্তর দিন অন্যথায় এড়িয়ে যান	☐
২.২	আপনি কি ধরনের সমস্যাগুলো বেশি পেয়ে থাকেন?	১.যোগাযোগ জনিত সমস্যা ২.গলধঃকরণ জনিত সমস্যা ৩.উভয় ৪.কোনটিই নয়	☐
২.৩	সে সকল রোগীর মধ্যে আপনি কোন ধরণের যোগাযোগ জনিত সমস্যা লক্ষণ করেছেন?	১.কথায় জড়তা ২.কণ্ঠস্বর বসে যাওয়া/ ভেঙ্গে যাওয়া ৩.উচ্চ/ নিম্ন তীক্ষ্ণ কণ্ঠস্বর ৪.অন্যান্য ৫.প্রযোজ্য নয় ----------	১ ২ ৩ ৪ ৫ একাধিক উত্তর গ্রহণযোগ্য
২.৪	সে সকল রোগীর মধ্যে আপনি কোন ধরণের গলধঃকরণজনিত সমস্যা লক্ষণ করেছেন?	১.গলধঃকরণের সময়ে কষ্ট হওয়া ২.শ্বাসকষ্ট ৩.মুখ ও গলা শুকিয়ে আসা ৪.কাশি অথবা বিষম ৫.খাদ্য গলধঃকরণের পর গড়গড় শব্দ করা, গলায় খাবার বেজে আছে মনে হওয়া ৬.অন্যান্য ----------	১ ২ ৩ ৪ ৫ ৬ একাধিক উত্তর গ্রহণযোগ্য
২.৫	নাক কান গলায় ক্যান্সার আক্রান্ত রোগীদের রেডিওথেরাপি চিকিৎসা প্রদানের সময় খাওয়া এবং যোগাযোগে কি ধরনের জটিলতা দেখা যায় যা রেডিওথেরাপি দেওয়ার পূর্বে উপস্থিত ছিলনা?	১.মিউকোসাইটিস ২.ব্যাথা ৩.লালাগ্রন্থি নষ্ট হয়ে যাওয়া ৪.বমি বমি ভাব / বমি ৫.ত্বকের সমস্যা/ ট্রিসমাস ৬.চুল পড়া ৭.ক্ষুধামন্দা ৮.স্বাদ নষ্ট হয়ে যাওয়া ৯.কণ্ঠস্বর পরিবর্তন ১০.অন্যান্য ----------	১ ২ ৩ ৪ ৫ ৬ ৭ ৮ ৯ ১০ একাধিক উত্তর গ্রহণযোগ্য

২.৬	নাক কান গলায় ক্যান্সার আক্রান্ত রোগীদের কেমোথেরাপি চিকিৎসা প্রদানের সময় খাওয়া এবং যোগাযোগে কি ধরনের জটিলতা দেখা যায় যা কেমোথেরাপি দেওয়ার পূর্বে উপস্থিত ছিলনা?	১.স্বাদ পরিবর্তন ২.দাঁত ক্ষয় এবং মাড়ির রোগ ৩.মুখের ভেতর মিউকাস মেমব্রেন ফুলে যাওয়া ৪.শুষ্ক মুখ ৫.মুখের ভেতরে ব্যাকটেরিয়া ৬.অন্যান্য ----------	১ ২ ৩ ৪ ৫ ৬ একাধিক উত্তর গ্রহণযোগ্য
২.৭	নাক কান গলায় ক্যান্সার আক্রান্ত রোগীদের সার্জারি চিকিৎসা প্রদানের সময় খাওয়া এবং যোগাযোগে কি ধরনের জটিলতা দেখা যায় যা সার্জারি করার পূর্বে উপস্থিত ছিলনা?	১.নার্ভ ট্রোমা ২.থোরাসিক ডাক্ট ইন্‌জুরি ৩.ভাসকুলার ইন্‌জুরি ৪.ফেসিয়াল নার্ভ ইন্‌জুরি ৫.ল্যারেঞ্জিয়াল নার্ভ ইন্‌জুরি ৬.অন্যান্য ----------	১ ২ ৩ ৪ ৫ ৬ একাধিক উত্তর গ্রহণযোগ্য
২.৮	আপনি কি বাংলাদেশে স্পীচ এন্ড ল্যাঙ্গুয়েজ থেরাপি পেশার সাথে পরিচিত?	১=হ্যাঁ ২=না ৩=মন্তব্য নেই	
২.৯	আপনি কি জানেন বাংলাদেশের কোথায় স্পীচ এন্ড ল্যাঙ্গুয়েজ থেরাপি সেবা চালু আছে?	১=হ্যাঁ ২=না ৩=মন্তব্য নেই	
২.১০	আপনি কি মনে করেন স্পীচ এন্ড ল্যাঙ্গুয়েজ থেরাপিস্টরা নাক কান গলায় ক্যান্সার আক্রান্ত রোগীদের ক্ষেত্রে তাদের যোগাযোগ এবং গলধঃকরণ জনিত সমস্যার সেবা প্রদানে গুরুত্বপূর্ণ ভূমিকা পালন করে?	১=অত্যন্ত গুরুত্বপূর্ণ ২=গুরুত্বপূর্ণ ৩=মোটামুটি ৪=তেমন গুরুত্বপূর্ণ নয় ৫=প্রয়োজন নেই ৬=মন্তব্য নেই	
২.১১	আপনি কি মনে করেন নাক কান গলায় ক্যান্সার আক্রান্ত রোগীরা তাদের সার্জারি, রেডিওথেরাপি, কেমোথেরাপি,কেমোরেডিয়েশন থেরাপির আগে এবং পরে স্পীচ এন্ড ল্যাঙ্গুয়েজ থেরাপির সেবা দ্বারা তাদের যোগাযোগ এবং গলাধঃকরণজনিত সমস্যা সমাধানে গুরুত্বপূর্ণ ভুমিকা পালন করে?	১=অত্যন্ত গুরুত্বপূর্ণ ২=গুরুত্বপূর্ণ ৩=মোটামুটি ৪=তেমন গুরুত্বপূর্ণ নয় ৫=প্রয়োজন নেই ৬=মন্তব্য নেই	
২.১২	আপনি কি কখনো এ ধরনের রোগীদের স্পীচ এন্ড ল্যাংগুয়েজ থেরাপিস্টদের কাছে সেবার জন্য হস্তান্তর করেছেন?	১=হ্যাঁ ২=না ৩=মন্তব্য নেই	

২.১৩	আপনি কি মনে করেন স্পীচ এন্ড ল্যাঙ্গুয়েজ থেরাপিস্টরা মাল্টিডিসিপ্লিনারি পদ্ধতিতে নাক কান গলায় ক্যান্সার চিকিৎসা ব্যবস্থাপনায় গুরুত্বপূর্ণ ভূমিকা পালন করে?	১=হ্যাঁ ২=না ৩=মন্তব্য নেই	☐
২.১৪	আপনি কি মনে করেন সমন্বিত অনকোলজিষ্টগণ রোগীদেরকে স্পীচ এন্ড ল্যাঙ্গুয়েজ থেরাপি সেবা গ্রহনে হস্তান্তরের মাধ্যমে যথাযথ পূর্ণবাসন সেবা নিশ্চিত করতে পারেন?	১=হ্যাঁ ২=না ৩=মন্তব্য নেই	☐
২.১৫	আপনি কি মনে করেন প্রতিটি ক্যান্সার হাসপাতালে স্পীচ এন্ড ল্যাঙ্গুয়েজ থেরাপি সেবা থাকা উচিত?	১=সম্পূর্ণ একমত ২=একমত ৩=আংশিক ৪=একমত না ৫=মন্তব্য নেই	☐
২.১৬	আপনার জানা মতে স্পীচ এন্ড ল্যাঙ্গুয়েজ থেরাপিস্টরা এই রোগীদের কেমোথেরাপী, রেডিওথেরাপি এবং সার্জারির পূর্বে কি কি ভূমিকা রাখতে পারে?	১---------- ২---------- ৩---------- ৪---------- মুলকথাটি ২-৩ শব্দে লিখুন	☐
২.১৭	আপনার জানা মতে স্পীচ এন্ড ল্যাঙ্গুয়েজ থেরাপিস্টরা এই ধরনের রোগীদের কেমোথেরাপী, রেডিওথেরাপি এবং সার্জারির পরে কি কি ভুমিকা রাখতে পারে?	১---------- ২---------- ৩---------- ৪---------- মুলকথাটি ২-৩ শব্দে লিখুন	☐
২.১৮	আপনি কি জানেন বর্তমানে সিআরপির সেবা বাংলাদেশের মধ্যে বিভাগীয় শহরে প্রদান করা হয়?	১=হ্যাঁ ২=না ৩=মন্তব্য নেই	☐
২.১৯	স্পীচ এন্ড ল্যাঙ্গুয়েজ থেরাপি সেবার প্রতি আপনার কি প্রত্যাশা রয়েছে?	১---------- ২---------- ৩---------- ৪---------- মুলকথাটি ২-৩ শব্দে লিখুন	☐

অংশগ্রহণকারীর স্বাক্ষর ঃ	

Annexure – II

Oncologists Perception about the Role of Speech and Language Therapy in management of Communication and Swallowing Difficulties of Head and Neck Cancer Patients

1. Demographic Information

Data Code: ☐☐

SN	Questions	Coding Category	Code
1.1	Gender	1= Male 2= Female	☐
1.2	Qualifications	1= MBBS 2= MCPS 3= FCPS 4= MS 5= MD 6= M.Phil. 7= Ph.D. 8= Other	1 2 3 4 5 6 7 8 Multiple answer accepted
1.3	Type of Oncologist	1= Gynecologic Oncologist 2= Medical Oncologist 3= Pediatric Oncologist 4= Radiation Oncologist 5= Surgical Oncologist 6= Hematologist Oncologist 7= Other ----------	☐
1.4	Clinical Experience	1= 1<5 Year 2= 5<8 Year 3= 8<10 Year 4= 10> Year	☐
1.5	Working Station	1= DMCH 2= NICRH 3= BSMMU 4= DLMCH 5= BCSH 6= Other ----------	☐
1.6	Designation	1= Professor/ Senior Consultant 2= Associate Professor/ Consultant 3= Assistant Professor/ Junior Consultant 4= Senior Lecturer/ Register 5= Lecturer /Medical Officer	☐

2. Research Main Questions

SN	Questions	Coding Category	Code
2.1	Did you see any head and neck cancer patient with communication or swallowing problem?	1= Yes 2= No 3= No Comment ** If yes please answer 2.2-2.4 otherwise skip the question	☐
2.2	What kind of condition do you get more?	1= Communication Difficulties Problem 2= Swallowing Difficulties Problem 3= Both 4= None above all	☐
2.3	What type of communication difficulties you have noticed to those patient?	1= Slurred Speech 2= Voice Breaks 3= High/Low Pitch 4= Other 5= Not Applicable ----------	1 2 3 4 Multiple answer accepted
2.4	What type of Swallowing difficulties you have noticed to those patient?	1= Having pain when swallowing 2= Aspiration 3= Dry mouth and throat 4= Coughing/ Choking 5= Having a gurgly, wet-sounding voice after swallowing 6= Other ----------	1 2 3 4 5 6 Multiple answer accepted
2.5	What are the common complication of patients with head and neck cancer follow radiotherapy?	1= Mucositis 2= Pain 3= Salivary gland dysfunction 4= Nausea/Vomiting 5= Skin Problem 6= Hair loss 7= Loss of appetite 8= Change of taste 9= Change in voice 10= Other ----------	1 2 3 4 5 6 7 8 9 10 Multiple answer accepted

2.6	What are the common complication of patients with head and neck cancer follow chemotherapy?	1= Change of taste 2= Tooth decay and gum disease 3= Inflamed mucous membranes in the mouth 4= Dry mouth 5= Bacteria in the mouth 6= Other ----------	1 2 3 4 5 6 Multiple answer accepted
2.7	What are the common complication of patients with head and neck cancer follow surgery?	1= Nerve trauma 2= Thoracic duct injury 3= Vascular injury 4= Facial nerve injury 5= Laryngeal nerve injury 6= Other ----------	1 2 3 4 5 6 Multiple answer accepted
2.8	Are you familiar with the speech and language therapy profession in Bangladesh?	1= Yes 2= No 3= No Comment	☐
2.9	Do you know where in Bangladesh Speech Language Therapy service is available?	1= Yes 2= No 3= No Comment	
2.10	Do you think speech and language therapist plays an important role in treating communication and swallowing problem of head and neck cancer patients?	1= Most Important 2= Important 3= Average 4= Not so Important 5= Not Necessary 6= No Comment	☐
2.11	Do you think head and neck cancer patients plays an important role on speech and language therapy service before and after their surgery, radiotherapy, chemotherapy and chemo radiation therapy to manage communication and swallowing problem?	1= Most Important 2= Important 3= Average 4= Not so Important 5= Not Necessary 6= No Comment	☐
2.12	Have you ever refer these patients to speech and language therapist?	1= Yes 2= No 3= No Comment	☐
2.13	Do you think speech and language therapists play vital role in treating head and neck cancer patients in a multidisciplinary team?	1= Yes 2= No 3= No Comment	☐

2.14	Do you think oncologists can ensure the proper rehabilitation service by referring those patients to speech and language therapists?	1= Yes 2= No 3= No Comment	☐
2.15	Do you think every cancer hospital should have speech and language therapy service?	1= Totally Agreed 2= Agreed 3= Partially 4= Not Agreed 5= No Comment	☐
2.16	According to your knowledge how can speech and language therapists help those patients before chemotherapy, radiotherapy and surgery?	1 ---------- 2 ---------- 3 ---------- 4 ---------- Write the main keyword	☐
2.17	According to your knowledge how can speech and language therapists help those patients after chemotherapy, radiotherapy and surgery?	1 ---------- 2 ---------- 3 ---------- 4 ---------- Write the main keyword	☐
2.18	Do you know CRP provides speech and language therapy service in district level?	1= Yes 2= No 3= No Comment	☐
2.19	What do you expect from speech and language therapy service?	1 ---------- 2 ---------- 3 ---------- 4 ---------- Write the main keyword	☐

Annexure – III

Consent Form

Assalamualikum/ Namashkar, my name is Md. Hashibul Hasan. This study is a part of Speech and language therapy and the researcher is a 4th year student of Bangladesh Health Professions Institute which is affiliated under University of Dhaka. The title of his research "**Oncologists Perception about the Role of Speech and Language Therapy in management of Communication and Swallowing Difficulties of Head and Neck Cancer Patients."**

In this study I am…… a participant or sample and I have been clearly informed about the purpose of the study. I am willingly participating in this study. I will have the right to withdraw from this study at any stage and I am not bounded to answer to anyone to get me out of the study at any time. This study will not cause any benefit or impact on participate work at present and future.

I have been also inform that, investigator will keep all information confidential and personal identity such as participates name & address will not be published anywhere of the study. The research will be available to answer any study related question to participate. I have been informed about the above- mentioned information and I agree to participate willingly giving my consent.

Signature of the study Participate:	Date:
Signature of the Researcher:	Date:

Annexure – IV

সম্মতিপত্র

আস্‌সালামুআলাইকুম/নমশকার, আমার নাম মোঃ হাসিবুল হাসান । এই গবেষণা স্পীচ এন্ড ল্যাঙ্গুয়েজ থেরাপি বিভাগের অধ্যয়নের একটি অংশ এবং গবেষক ঢাকা বিশ্ববিদ্যালয়ের চিকিৎসা অনুষধ কতৃক অনুমদিত বাংলাদেশ হেলথ প্রফেশনস ইন্সটিটিউটের বি এস সি ইন স্পীচ এন্ড ল্যাঙ্গুয়েজ থেরাপি বিভাগের ৪র্থ বর্ষের অধ্যয়নরত একজন ছাত্র এবং তার গবেষণার বিষয় "নাক কান গলায় ক্যান্সার আক্রান্ত রোগীদের যোগাযোগ ও গলধঃকরন জনিত সমস্যায় স্পীচ এন্ড ল্যাঙ্গুয়েজ থেরাপির ভূমিকা সম্পর্কে ক্যান্সার বিশেষজ্ঞদের মতামত/ধারনা"

এই গবেষণার আমি ----------একজন অংশগ্রহণকারী এবং আমি এই গবেষণার উদ্দেশ্য পরিষ্কার ভাবে জানতে পেরেছি। আমি যে কোন সময় এবং গবেষণার যে কোন পর্যায়ে আমার অংশ গ্রহণ প্রত্যাহার করতে পারি। এই জন্য আমি কারো কাছে জবাব দিহি করতে বাধ্য থাকব না। আমি অবগত হয়েছি যে, এই গবেষণায় অংশ গ্রহণ করার ফলে বর্তমান ও ভবিষ্যতে আমার ও অংশ গ্রহণ কারীদের কোন প্রকার প্রভাব ফেলবে না।

এই গবেষনার সাক্ষাতকারের সকল তথ্য যেগুলো গবেষণার কাজে ব্যবহৃত হবে,সেগুলো সম্পুর্ণভাবে গোপনীয় থাকবে। শুধুমাত্র গবেষক এ তথ্য সমূহের প্রবেশাধিকার পাবে। গবেষকের নাম, পরিচয় ছাপা হবে না। আমি গবেষণার পদ্ধতি এবং জটিলতা অথবা সুফলের ব্যপারে বা গবেষণা সংক্রান্ত যেকোনো প্রশ্নের উত্তর দানের জন্য এ গবেষনার তত্ত্বাবধায়কের সহিত আলোচনা করতে পারব।আমি উপরোক্ত সকল তথ্য গুলো সম্পর্কে জানি এবং আমি এই গবেষণায় অংশ গ্রহণে সম্মতি জ্ঞাপন করছি।

অংশগ্রহণকারীর স্বাক্ষর:	তারিখ:
গবেষকের স্বাক্ষর:	তারিখ:

Annexure – V

BANGLADESH CANCER SOCIETY

বাংলাদেশ ক্যান্সার সোসাইটি হস্‌পিটাল এন্ড ওয়েলফেয়ার হোম
Bangladesh Cancer Society Hospital & Welfare Home

Ref :
বাক্যাসো/২০১৮/১১০

Date : .....
২২-১০-২০১৮ইং

রিসার্চ প্রজেক্টের জন্য তথ্য সংগ্রহ করার অনুমতি পত্র

Md. Hashibul Hasan, Roll No- 16, 4th year, B.Sc in Speech and Language Therapy, BHPI, CRP, Savar, Dhaka -কে "Oncologists perception about the role of Speech and Language Therapy in management of communication and swallowing difficulties of Head and Neck Cancer patients". এ সংক্রান্ত কাজের তথ্য সংগ্রহের নিমিত্তে নিম্নবর্ণিত শর্ত স্বাপেক্ষে অত্র প্রতিষ্ঠানে অনুমতি দেয়া হলো।

শর্তাবলীঃ

০১। সরকারী নিয়মের পরিপন্থি কোন কাজে লিপ্ত হইলে অত্র প্রতিষ্ঠান তার বিরুদ্ধে আইনানুগব্যবস্থা গ্রহনের অধিকার সংরক্ষন করিবেন।

০২। অত্র প্রতিষ্ঠান কর্তৃপক্ষ কোনকারন দর্শানোব্যতিরেকেই যে কোনসময় উক্ত রিসার্চের তথ্য সংগ্রহের অনুমতি বাতিলের অধিকার সংরক্ষন করিবেন।

০৩। রোগীদের কাছ থেকে সরাসরি কোনরকম রক্ত সংগ্রহকরাযাবেনা। যদি রোগীদেরকাছ থেকে সরাসরি রক্ত সংগ্রহ করা হয়। তাহলে প্রশিক্ষন/অনুমতি পত্র বাতিলের অধিকার সংরক্ষন করিবেন।

২২/১০/১৮

(অধ্যাপক ডাঃ মোঃ আব্দুল হাই)
পরিচালক
বাংলাদেশ ক্যান্সার সোসাইটি হসপিটাল এন্ড ওয়েলফেয়ার হোম

120/3-C, Darus Salam, Technical More, Mirpur, Dhaka-1216, Bangladesh. Tel: 88-02-9025504, Fax: 88-02-9026093
Cell: +88 01763678870, E-mail: bangladeshcancersociety@gmail.com, Website: bangladeshcancersociety.org

বিঃদ্রঃ এখানে স্বল্পমূল্যে পরীক্ষা নিরীক্ষা ও চিকিৎসা করা হয় (ক্ষেত্র বিশেষে বিনামূল্যে)।

Annexure – VI

National Institute of Cancer Research and Hospital
Mohakhali, Dhaka-1212.

Ref. no: NICRH/Ethics/2018/ 412 Date: 25/10/2018

Certificate of Ethical Approval

Title: "Oncologists Preception about the Role of Speech and Language Therapy in management of Communication and Swallowing Difficulties of Head and Neck Cancer Patients."

Investigator: Md. Hashibul Hasan, 4th year student, B.Sc in Speech and Language Therapy, Bangladesh Health Professions Institute, CRP, Saver, Dhaka-1343.

Recommendation: APPROVED/~~APPROVED AFTER CORRECTION~~/~~NOT APPROVED~~

Note: The research study to be carried out must comply with the national laws and regulations of the country and "WMA declaration of Helsinki-Ethical Principles for Medical Research Involving Human Subjects, amended, October 2008'

25/10/18

Prof (Dr.) Md. Moarraf Hossen
Chairperson
Ethics Committee
NICRH

Prof. (Dr.) Md. Mahbubur Rahman
Member Secretary
Ethics Committee
NICRH