

# **Quality of Life of the Patients Treated with Head and Neck Cancer**

A research presented to the  
Bangladesh Health Professions Institute (The Academic Institute of CRP).  
University of Dhaka

**Md. Zahidul Islam**  
**zahid.slt@gmail.com**

**Supervisor: Md. Jahangir Alam**  
**Assistant Professor and Head, Department of Speech & Language Therapy**  
**Bangladesh Health Professions Institute (BHPI)**

**In partial fulfillment of the requirements for the degree of**  
**B. Sc. in Speech and Language Therapy**

March, 2015

# **Quality of Life of the Patients Treated with Head and Neck Cancer**

By

Md. Zahidul Islam

4<sup>th</sup> year B. Sc. in Speech and Language Therapy

**Approved By**

**Signature of Supervisor & Head of the Department:** \_\_\_\_\_

**Md. Jahangir Alam**

**Assistant Professor and Head**

**Department of Speech and Language Therapy**

**BHPI, CRP, Savar, Dhaka-1343**

**Signature of Principal:** \_\_\_\_\_

**Professor Dr. M. A. Quader**

**Principal, BHPI**

**CRP-Chapain, Savar, Dhaka-1343**

## **Declaration**

I am Md. Zahidul Islam, would like to ensure that any single discussion of my research project is done by me and it will not be harmful to the participants. All the sources used in this study have been cited correctly. Any errors or inaccuracies are my own.

Signature:

**Md. Zahidul Islam**

4<sup>th</sup> year student of B.Sc. in Speech and Language Therapy

# Dedication

***Dedicated To.....***  
***.....My Honorable Parents***

# Table of Contents

	<b>Page</b>
Declaration.....	iii
Dedication.....	iv
Table of contents.....	v-vii
List of figure.....	vii
List of tables.....	viii
List of annexure.....	ix
Glossary.....	x
Acknowledgement.....	xi
Executive Summary.....	xii
<b>Chapter 1: Introduction</b>	<b>Page No. 01-08</b>
1.1 Introduction.....	01
1.2 Background and Literature Review.....	02-07
1.3 Rational of the study.....	07
1.4 Operational Definition.....	07-08
1.5 Aim and Objectives of the study.....	08
<b>Chapter 2: Methodology</b>	<b>Page No. 09-12</b>
2.1 Study Design.....	09
2.2 Study Location.....	09
2.3 Study Population.....	09
2.4 Participants of the Study.....	09-10
2.5 Sampling Technique.....	10
2.6 Sample Selection Criteria.....	10-11
2.7 Data Collection Tool.....	11
2.8 Data Collection Procedure.....	11-12
2.9 Data Analysis Process.....	12
2.10 Ethical Consideration.....	12

<b>Chapter 3: Results</b>	<b>Page No. 13-21</b>
3.1 Demographic Information of the Participants.....	13-14
3.2 Incidence of Patients with HNC According to Age.....	14
3.3 Anatomic Site of Head and Neck Cancer.....	14
3.4 Treatment of Head and Neck Cancer .....	15
3.5 Descriptive Statistics of the Participants.....	15-16
3.6 Physical Well-being .....	17
3.7 Social/Family Well-being .....	18
3.8 Emotional Well-being .....	19
3.9 Functional Well-being .....	20
3.10 Additional Concerns .....	21
<b>Chapter 4: Discussion</b>	<b>Page No. 22-24</b>
<b>Chapter 6: Limitation</b>	<b>Page No. 25</b>
<b>Chapter 7: Recommendation</b>	<b>Page No. 26</b>
<b>Chapter 8: Implication</b>	<b>Page No. 27</b>
<b>Chapter 5: Conclusion</b>	<b>Page No. 28</b>
<b>References</b>	<b>Page No. 29-35</b>

## List of Figure

<b>S.N</b>	<b>Figure</b>	<b>Page</b>
01	Physical Well-being of the Participants	17
02	Social/family Well-being of the Participants	18
03	Emotional Well-being of the Participants	19
04	Functional Well-being of the Participants	20
05	Additional Concern of the Participants	21

## **List of Table**

<b>S.N</b>	<b>Table</b>	<b>Page</b>
01	Demographic characteristics of patients with HNC	13
02	Percentage of incidence of patients with HNC according to their age	14
03	System wise distribution of HNC	14
04	Treatment pattern of patients with HNC	15
05	Descriptive Statistics for the quality of life of the people with HNC	16



## List of Annexure

S.N	Annexure	Page
01	FACT-H&N Data Collection Tool (Bangla version)	36-37
02	FACT-H&N Data Collection Tool (English version)	38-40
03	Demographic Information Chart	41
04	Bangla Consent Form	42
05	Permission Letter for Conducting Research Project	43
06	Permission Letter for Collecting Data	44
07	Permission Letter of NICRH	45

## **Glossary**

**FACT H&N:** Functional Assessment of Cancer Therapy Head and Neck

**HNC:** Head and Neck Cancer

**NICRH:** National Institute of Cancer Research Hospital

**QOL:** Quality of Life

**SLT:** Speech and Language Therapy

## **Acknowledgement**

At first I am paying my profound gratitude to the Almighty Allah for giving me all abilities to complete this study. I am also grateful to my teachers who have given me the great opportunity to conduct this study. I want to thank my parents, friends for their eternal encouragements. A special thank goes to my honorable supervisor Md. Jahangir Alam (Assistant Professor and Head of SLT department) for helping me to complete this study by providing necessary ideas, suggestions, instruction and support in every single step of my study. I express special gratitude to Sushama Kanan, Sharmin Hasnat, Mizanur Rahman, Nahid Prvez and Shohidul Islam Mridha for their support. I am also thankful to Morshedul Quadir for his help and support to conduct this study. Lastly, I am beholden from my heart to all of my participants and their carer for their endless support because without them it would not be possible to complete the study.

## **Executive Summary**

**Title:** “Quality of life of the patients treated with head and neck cancer”.

**Purpose:** The purpose of this study is to identify the quality of life of the patients treated with head and neck cancer.

**Method:** Considering the aim and objectives of the study investigator used cross sectional design. The Functional Assessment of Cancer Therapy Head and Neck (FACT-H&N) questionnaire was used as data collection tool in this study. Data was collected from 15 participants from National Institute of Cancer Research Hospital, Dhaka. Data was analyzed by using descriptive statistical analysis method.

**Result:** Investigator found that majority of the participants had severe pain in mouth and throat (33%), dryness of mouth (40%), loss of energy (33%), inability to work (33%) and worry about the side effect of HNC treatment (47%). Severe voice problem (40%), moderate to severe communication difficulty (67%), severe swallowing (33%) and eating (33%) difficulty was most important issue identified from the participants.

**Conclusion:** The research finding shows that inability of communication, voice problem, pain and dryness of the mouth, swallowing difficulty, loss of energy and inability to work was identified as catalyst which impact on physical, emotional, functional and social well-being of patients treated with HNC. All of these concerns make an individual QOL poor.

**Key words:** head and neck cancer, treatment of head and neck cancer, quality of life, communication, swallowing.

## 1.1 Introduction

Human bodies are made up of billions of cells that grow, divide, and then die in a predictable manner. Cancer occurs when something goes wrong with this system, causing uncontrolled cell division and growth (Talukder et al. 2009). Cancer is one of the leading public health problems in the world. It is the second most important causes of death in the western countries and emerging as an important cause of morbidity and mortality in developing country as well (Dharr and Robbani, 2006). Cancer can origin in any part of the body. If it origins in head and neck region of the body it is called head and neck cancer (Jarrell, Carabasi and Radomski, 2000).

Head and neck cancer is the sixth most common cancer worldwide. Approximately 650,000 new head and neck cancers are diagnosed annually, and there are 350,000 deaths yearly worldwide (Cognetti, Weber and Lai, 2008). A World Health Organization study estimated that there are 49,000 oral cancer, 71,000 laryngeal cancer and 196,000 lung cancer cases in Bangladesh among those aged 30 years or above (Zaman, 2009). Most cancer patients are treated with surgery, radiation or chemotherapy or both (Kumar and Clark, 2012). According to Langendijk, Doornaert, Leeuw, Leemans, Aaronson and Slotman (2008) head and neck cancer and its treatment can affect both disease-specific health related quality of life (e.g. salivary and swallowing functions) and the more general domains of health, such as physical, mental, and social health. Before treatment the individual may have few symptoms or some discomfort and they are usually able to speak, eat and swallow safely. Following prolonged multimodality treatments there are many physiological and structural changes that affect the individual's ability to communicate, to speak, to use their voice, to eat and/or swallow, smell, breath, to carry out social interactions and fulfill work capabilities (Enderby, Pickstone, John, Fryer, Cantrell and Papaioannou, 2009).

In this study, the investigator tried to identify quality of life of the patients treated with head and neck cancer at a special cancer hospital in Bangladesh.

## **1.2 Background and Literature Review**

Cancer is a group of diseases caused by unregulated growth and spread of neoplastic cells (Jarrell, Carabasi and Radomski, 2000). The total burden of cancer across the world is estimated to be around 22 million and approximately 10 million new cases of cancer are diagnosed every year across the world. Hence the great majority of new cases (more than 60%) are from the developing world. Cancers in all forms are causing about 12% deaths throughout the world. In developing countries cancer ranks third as a cause of death and accounts for 9.5 % (3.8 million) of all deaths (Mishra and Meherotra, 2014).

Bangladesh is a developing country with the highest population density worldwide. The current population of Bangladesh is 153.6 million with the growth rate of 1.37% (Hussain and Sullivan, 2013). Like many other countries in the world, cancer is one of the major killer diseases in Bangladesh (Talukder et al. 2009). According to the Bangladesh Bureau of Statistics, cancer is the sixth leading cause of death. International Agency for Research on Cancer has estimated cancer-related death rates in Bangladesh to be 7.5% in 2005 and 13% in 2030 (Hussain and Sullivan, 2013). Its personal, social and economical bearing is huge (Talukder et al. 2009). There are 1.3 to 1.5 million cancer patients in Bangladesh, with about .2 million patients newly diagnosed with cancer each year (Hussain and Sullivan, 2013). The five most common cancers in Bangladesh are gynecological (cervix uteri, corpus uteri and ovary), head and neck (lip and oral cavity, nasopharynx, other pharynx, larynx and thyroid), lung, breast and esophagus (Hasan, Uddin, Rfiquzzaman, Chowdhury and Wahed, 2012).

Cancer refers to those many diseases where abnormal cells divide without control and invade tissues. The different cancers are named by the site of occurrence (Enderby et al. 2009). Head and neck cancer includes epithelial malignancies of the upper aero digestive tract (Ragin, Modugno and Gollin, 2007) including the paranasal sinuses, nasal cavity, oral cavity, pharynx, and larynx (Cognetti, Weber and Lai, 2008).

According to Joshi, Dutta, Chaturvedi and Nair (2014), worldwide 640,000 new people developed head and neck cancer in every year and 356,000 deaths occurred annually. An average mortality rate of head and neck cancer is 7.3 in males and 3.2 in females per 100,000 and an average incidence rate of 8.8 in males and 5.1 in females per 100,000 respectively (Ragin, Modugno and Gollin, 2007). Specific cancers have different rates (Enderby et al. 2009). Worldwide people develop cancer of larynx 24%, pharynx 22%, nasopharynx 13%

and oral cavity 41% (Joshi, Dutta, Chaturvedi and Nair, 2014). Head and neck carcinoma is the most common cause with an incidence of 500,000 new cases a year in Europe. The incidence in Europe in 2004 to be higher in men than in women 76.6/21 per thousand in oral and pharyngeal cancer; 33.6/10.1 in oesophageal cancer and 42/4.1 in laryngeal cancer (Enderby et al. 2009). It is less common in England and Wales with approximately 6,700 new cases diagnosed each year over 90 percent of all malignant (National head & neck cancer audit, 2010). In 2006, an estimated 39,250 Americans developed head and neck cancer and 11,090 deaths occurred (Enderby et al. 2009). Head and neck cancer is the most common cancer in developing countries and it form one of the most common cancers in south and southeast asian countries. It is the most common cancer of males in India and the fifth most common in females. Head and neck cancer form 21% of the cancers in males and 11% in females in Pakistan where oral and laryngeal cancers are predominant forms of head and neck squamous cell cancer in India, Pakistan, and other southeast asian countries (Joshi, Dutta, Chaturvedi and Nair, 2014).

There are different risk factors that cause head and neck cancer (Enderby et al. 2009). In 1957, cigarette smoking was first identified as an independent risk factor for oral and oropharyngeal cancer. Later, the use of tobacco products (e.g.- smoking cigarettes, pipes, and/or cigars, dipping snuff, or chewing tobacco) was confirmed, along with the use of alcohol, to be the two major risk factors for the development of these cancers (Ragin, Modugno and Gollin, 2007). High levels of smoking and/or alcohol intake have been identified as primary causes of oral, pharyngeal and laryngeal cancer. While smoking and drinking are related to a higher incidence of cancer, studies show that head and neck cancer occurs in 20% of people who do not smoke or drink (Enderby et al. 2009).

Additionally, infection with certain types of human papilloma virus (HPV) causes more than half of all cases of oropharyngeal cancer, a type of head and neck cancer (A snapshot of head and neck cancer, 2013). 75% overall risk of head and neck cancer related to tobacco (cigarette), betel quid (tobacco, betel leaf, slaked lime, areca nut) and alcohol (Joshi, Dutta, Chaturvedi and Nair, 2014).

There are many external factors either cause or facilitate the development of cancers in Bangladesh. Tobacco use is the single most important cause of large variety of cancers such as lung, larynx, esophagus, stomach, oral cavity and others. Tobacco poses a double burden to Bangladesh because of high production and high consumption. Bangladesh is among the

world's 20 largest producers of tobacco and tobacco products (Zaman, 2009). Tobacco is the single most important modifiable risk factor for cancer. Unfortunately in Bangladesh, cigarette production has grown tremendously since 1980, and bidi production has grown even faster. A World Health Organization (WHO) study shows that 20 million people in Bangladesh use tobacco in some form where 62% of men and 41% of women aged more than 30 years were found to either smoke or chew tobacco (Hussain and Sullivan, 2013).

The National Institute of Cancer Research and Hospital (NICRH) and Bangabandhu Sheikh Mujib Medical University (BSMMU) cancer registry data revealed that 60% of the cancers in the male and 5% of the cancers in female are tobacco related (Hussain and Sullivan, 2013). Cigarette smoking is a well known and recognized predisposing factor for laryngeal cancer (Mishra and Meherotra, 2014). More than 90% of patients of laryngeal cancer have a significant history of smoking (Jarrell, Carabasi and Radomski, 2000). The prevalence of smoking in Bangladesh is 41% among men aged more than 15 years (Hussain and Sullivan, 2013).

The most common treatment of head and neck cancer is radiation therapy. It is the process where high-energy x-rays or other particles use to kill cancer cells (Curran et al. 2007). Chemotherapy is the use of drugs to kill cancer cells. Systematic chemotherapy is delivered through the bloodstream, targeting cancer cells throughout the body (Adeyemi, Adekunle, Kolude, Akang and Lawoyin, 2008). The surgical management is the process of move away of cancer cells from the body. It is increasing rapidly because of improvements of anesthesia, development of antibiotics and blood banking and introduction of new techniques for reconstruction (Cognetti, Weber and Lai, 2008). Patients require intensive multimodality treatments and prolonged rehabilitation with long term support to achieve an adequate recovery (National head & neck cancer audit, 2010). Standard treatments for head and neck cancers include radiation therapy and surgery, and for certain types of head and neck cancer, chemotherapy also recommended by doctors (A snapshot of head and neck cancer, 2013). The choice of modality depends on patient factors, primary site, clinical stage, and resectability of the tumor (Kumar and Clark, 2012).

Intervention of head and neck cancer involve destroying cancer cells through radiation, chemo and surgery but all they have a significant side effect (Kumar and Clark, 2012). The most common side effect in patients undergoing radiation therapy is xerostomia and secondary side effect is damage of the salivary glands. Severe xerostomia significantly



impact on emotional, social, physical, and overall function (Nguyen, Sallah, Karlsson and Antoine, 2002). Aremucositis, dysphagia, hoarseness, erythema, and desquamation of the skin are also seen frequently after radiation (Dirix, Nuyts and Bogaert, 2006). The side effect of chemotherapy depends on the drugs that are used for the treatment. Some common side effect of chemotherapy is lower resistance of infection, sores in the mouth and lips, loss of appetite, nausea, vomiting, diarrhea, hear loss etc. (Goon et al. 2009). Side effect of surgery depends on the site and size of tumors and the section of cells from head and neck region. Some big surgery like laryngectomy causes the loss of laryngeal voice, stoma problems, loss of smell, and diminished sense of taste (Schuster, Lohscheller, Hoppe, Kummer, Eysholdt, and Rosanowski, 2004) and these results in physical, emotional, social and economical implications (Lewin, 2005).

According to Onakoya, Nwaorgu, Adenipekun, Aluko and Ibekwe (2006), head and neck cancer and its treatment has an enormous impact on the quality of life of patients. Quality of life is both subjective, including the patient's point of view and multidimensional, covering a broad spectrum of aspects of the patient's life (Killgu, Gottwald, Haderlein, Maier, Rosanowski, Iro, Psychogios, & Schustera, 2010). The World Health Organization defined quality of life as an "individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns". Quality of life is therefore multi-dimensional, affecting physical, mental, emotional and social well-being (Prokop, 2012).

The most important physical wellbeing associated with speech problems, dry mouth, and throat and swallowing problems. Pain is commonly reported in head and neck cancer patients, and can have a significant impact on their QOL. The effect of the pain may further be worsened if there is inadequate family support. The presence of pain had an adverse effect on life satisfaction after treatment. Physical problems that include their inability to communicate effectively, general physical outlook and psychosocial problems, such as depression or anxiety over their present health condition, which are further aggravated by financial worries and lack of social interactions (Onakoya et al. 2006).

Curran et al. (2007) found poor functional and emotional wellbeing from 424 patients with head and neck cancer in a study. Most of the patients were have less social contact with their family and friends and they felt isolation from the society. Dirix, Nuyts and Bogaert (2006) reported from a survey of 65 patients where pain was common (58.4%) and interfered with

daily activities in 30.8% of patients. More than half of the patients (58.3%) had mood complaints, and 60% had interference by their physical condition on their social activities and also most of them were unable to fulfill their work either themselves or through others. Lin, Starmer and Gourin (2012) reported that head and neck cancer patients experience one of the highest rates of depression which affects quality of life, treatment compliance, disease progression, pain tolerance, and increases the risk for suicide.

Nguyen et al. (2002) found that speech and swallowing problem are the main complain of the head and neck cancer patients after completing treatment. The loss of the ability to communicate and swallow has a major psychological impact on the individual and their concept of self. Loss of communication can be a shock and cause upset to both the individual and their family and a period of grief (denial, anger, bargaining, and frustration) may be experienced. The individual may experience feelings of isolation with the loss of personal relationships, loss of work, economic security, home and independence (Enderby et al. 2009). All these concern reduced quality of life of an individual treated with HNC.

According to Myers (2005), head and neck cancer and its treatment strikes at the most basic human functions such as the abilities to communicate, eat and interact socially. For this reason, quality of life (QOL) has traditionally important fundamental field of SLT. People treated with HNC always try to find out compensatory strategies as they have difficulties in interaction, psychological problem, social problem, economical aspects. The SLT at each of these stages aims to contribute to the assessment, treatment, maximizing and maintenance of abilities relating to speech, voice, swallowing and communication. SLT assess and advise on communication skills, safe swallow and the selection, use and maintenance of prosthesis. SLTs may work with intensive care nurses to help to reduce the risk of aspiration in patients, engender safe swallow and facilitate communication. The SLT can advise on and can fit speaking valves to both aid communication and reduce the risk of aspiration in those with a long term tracheostomy or intubation (Baumgartner, 2008). It is important that health care providers obtain a better understanding of patients' health-related QOL and use available data to provide a more comprehensive approach to patients' medical care (Woodard, Oplatek & Petruzzelli, 2007). SLT is usually the member of multidisciplinary team who develops strongest bond with patients throughout the whole treatment process because of their swallowing and communication difficulties. SLTs make a unique contribution to the multidisciplinary team for rehabilitation of the patients. SLT also plays an important role in

providing support, counseling and rehabilitation both pre and postoperatively (Lewin, 2005). According to Myers (2005), quality of life is an outcome measure of a treatment and which very important in rehabilitation of patients with HNC. So, it is very important to study on quality of life of the patient treated with HNC.

### **1.3 Rationale of the Study**

This study is the primary study on quality of life of the patients treated with HNC. This study aims to find out functional, emotional, social and physical well-being and additional concern including features of swallowing and voice of the patients treated with HNC. This study would be helpful to add knowledge and in making speech and language therapist awareness about the quality of life of the patients treated with HNC. Speech and language therapists can use this information for doing best practice by concerning physical, emotional and functional status of the patients. As a result this study may be helpful to develop a treatment protocol for patients with HNC. As this study will present clear evidence about functional, emotional, social and physical well-being with some additional concern including swallowing and voice following treatment, so patients and care giver would be aware about it. It would be very helpful for different professionals or organizations who are working or interested to work with patients with HNC. It would be helpful to establish a new role of SLT at cancer hospitals in Bangladesh.

### **1.4 Operational Definition**

**Key words: Quality of life, Head and Neck Cancer and Treatment of Head and Neck Cancer**

#### **Quality of life**

Quality of life refers to a patient-centered subjective judgment made by the individual which influenced by various domains such as physical and occupational functioning, psychological state, social interaction and somatic sensation that changes across time and situation (Myers, 2005). In this study, investigator used the term quality of life in the basis of functional well-being, emotional well-being, social well-being, physical well-being and additional concern including swallowing and voice.

## **Head and Neck Cancer**

Head and neck tumours are squamous cell carcinomas (National head & neck cancer audit, 2010) and one of the major health complication which can involve many different structures, which includes epithelial malignancies of the upper aerodigestive tract, such as the paranasal sinuses, nasal cavity, oral cavity, pharynx, and larynx (Cognetti, Weber and Lai, 2008). In this study, investigator used the term head and neck cancer to explain any kind of malignant tumour in the lip, tongue, floor of the mouth, oral mucosa, palate, jaw, oropharynx, postnasal space, nasal cavity and paranasal sinuses, larynx, upper esophagus, ear and salivary glands.

### **Treatment of Head and Neck Cancer**

Treatment of patients with head and neck squamous cell carcinoma may involve radiotherapy, surgery, and chemotherapy (Langendijk, Doornaert, Leeuw and Leemans, Aaronson, and Slotman, 2008). In this study, investigator included all the treatment of head and neck cancer such as radiotherapy, surgery, and chemotherapy.

## **1.5 Aim and Objectives**

### **Aim**

To identify the quality of life of the patients treated with head and neck cancer.

### **Specific Objectives**

- To identify the physical well-being of patients treated with head and neck cancer.
- To identify the social and family well-being of patients treated with head and neck cancer.
- To identify the emotional and functional well-being of patients treated with head and neck cancer.
- To identify the communicational and swallowing well-being of patients treated with head and neck cancer.

## **2.1 Study Design**

Investigator used cross-sectional study design to conduct the study. It is one of the most commonly used survey research design (Shaughnessy, Zechmeister and Zechmeister, 2003). Investigator used this design because it generally describes a group at one point of time (Bailey, 1997). In this study investigator aims to identify the quality of life of the patients treated with head and neck cancer and cross-sectional study is a descriptive analytical study that obtains the health and disease profile of a resident population of an area (Dharr and Robbani, 2006). They (2006) also added that cross-sectional survey represents a snap-shot view of the frequency and distribution of disease in a community. So, cross sectional study would be an appropriate design to conduct the study. Besides these cross sectional survey design is simple to operate, cheaper and relatively quicker to carry out (Hicks, 1999). As a result, investigator used this design.

## **2.2 Study Location**

Investigator conducted the study in National Institute of Cancer Research Hospital, Mohakhali, Dhaka- 1212. It is a specialized cancer hospital of Bangladesh where a large number of people are treating with head and neck cancer. So, investigator selected National Institute of Cancer Research Hospital as the study location.

## **2.3 Study Population**

According to Hicks (1991) Population is a group of people who have a common characteristic which is of interest to the investigator. In this study, investigator is interested to study on quality of life of the patients treated with head and neck cancer. So, the study population was patients treated with head and neck cancer. Their age range was 30-85 years.

## **2.4 Participants of the Study**

Investigator selected 15 patients treated with head and neck cancer as participant to conduct this study. Determining the number of participants in a study is a critical issue (Depoy & Gitlin, 1998). 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. But

Depoy & Gitlin (1998) suggested that, a large sample is not always the best policy and is often inessential. Hicks (2000) point out that there is no easy way of establishing the standard size of sample since this decision mainly depends on the investigator.

## **2.5 Sampling Technique**

Investigator used purposive sampling method to conduct the study. It is a judgmental sampling process where individuals are selected purposely based on the study (Depoy & Gitlin, 1999). In this type of sampling, items for the sample are selected deliberately by the researcher; his choice concerning the items remains supreme (Kothari, 2004). According to Hicks (2000), purposive sampling is an easy way of accessing a sample from a population. Investigator used this technique because it was easy, quick and cheap to select participants from hospital. It saved time of the investigator and investigator selected participants according to the aim and objectives of the study.

## **2.6 Sample Selection Criteria**

### **2.6.1 Inclusion Criteria**

- Both male and female participants.
- Cancer in head and neck region.
- At least 4 weeks post treatment including surgery, radio and chemotherapy or both.
- Age range between 30-85 years.

### **2.6.2 Exclusion Criteria**

- Any other neurological deficits (e.g. stroke, Parkinson, motor neuron disease etc.).
- History of voice and swallowing disorder before treatment.

### **2.6.3 Rationale for Inclusion and Exclusion Criteria**

Cancer is a disease of elderly people. It is rare in children and rises in frequency throughout the adulthood and occurs most often in elderly (Shahriar, Islam, Mahmood, Mamun, Nahar, Sadiana and Shahid, 2011). As a result investigator selected 35-80 years old participants. Participants are selected who followed at least 4 weeks post treatment because more of the side effect exists after 4 weeks of post treatment. Investigator selected participants who had

no neurological deficits and history of voice and swallowing disorder before treatment, because it could interfere or change the result of the study.

## **2.7 Data Collection Tool**

The Functional Assessment of Cancer Therapy Head and Neck (FACT-H&N) questionnaire (Annexure-2) was used as data collection tool in this study. It is a measurement system and collection of health-related quality of life questionnaires that assess multidimensional health status of patients with HNC (List, Antonio, Cella, Siston, Mumby, Haraf, and Vokes, 1996). It was developed by Cella et al. in 1996 with comparison of general people and the patients of U.S. (Webster, Cella and Yost, 2003). The FACT-H&NS consist of the FACT-G (general) and the H&NS. The FACT-G is a 27-item compilation of general questions divided into four primary QOL domains: Physical Well-Being, Social/Family Well-Being, Emotional Well-Being, and Functional Well-Being. The H&NS is a 12 item compilation which mainly focuses on swallowing, voice and communication of patients with HNC. It assesses the effects of cancer and its treatment the patients' overall QOL in the physical, emotional, social, and functional domains (FACT-G), as well as the impact of site-specific side effects (Head and Neck Specific Concerns). Several studies have confirmed the reliability and validity of the FACT-H&N (Rose and Yates, 2001). Each response is rated by the patient from 0 to 4 on a Likert scale, with 0 described as “not at all” and 4 described as “very much.” Scores are calculated separately for each domain. Higher scores for the scales and subscales indicate better quality of life (Webster, Cella and Yost, 2003).

## **2.8 Data Collection Procedure**

Investigator collected data from the participants through face to face interview. Investigator collected data through Bangla translated Functional Assessment of Cancer Therapy Head and Neck (FACT-H&N) questionnaire (Annexure-1). At first investigator took permission from SLT department of Bangladesh Health Professions Institute and then the authority of National Institute of Cancer Research and Hospital for data collection. Then investigator went to the study place with consent form, demographic chart and FACT-H&N questionnaire. Investigator explained to the participant about the purpose of the study and offered them to sign in consent form. Investigator requested to the carer of illiterate participant to sign on consent form. After taking consent, investigator read the instruction of FACT-H&N questionnaire. For collecting data, investigator took two assistant to help the

participants in order to fill up the form. Literate participants filled up the form by themselves. For the illiterate participants, investigator and the assistants read the FACT-H&N questionnaire and filled it up according to the participant's response.

## **2.9 Data Analysis Process**

Investigator used descriptive statistics for data analysis. Because descriptive statistics are commonly use 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 (mean, mood, median) and descriptions of relative position (range, standard deviation). Investigator used this technique because the aim of the study is to identify the quality of life of the patients treated with head and neck cancer and investigator showed the result easily through descriptive statistics.

## **2.10 Ethical Consideration**

Investigator maintain rigorous manner to conduct the study. All steps of the study were supervised by the supervisor. At first the research proposal was submitted to the ethical board to approve the study. Then the investigator got the official permission from the approval committee of department of speech and language therapy and obtained permission from Bangladesh Health Professions Institute (BHPI) an academic institute of CRP to conduct the research project. After getting permission from the institute, investigator took an academic permission letter which was approved the principal of BHPI for National Institute of Cancer Research and Hospital. Permission was also taken from National Institute of Cancer Research and Hospital to collect data. After getting permission from the authority of National Institute of Cancer Research and Hospital, investigator started data collection from the participants. The investigator gave detailed and clear information about the purpose of the study to the participant verbally in Bengali. The participants were informed that their participation will be fully voluntary and they have the right to withdraw or discontinue from the study at any time of the study. Confidentiality of information maintained during the research process. The investigator informed to the participants that data are collected by a standardized questionnaire and the supervisor will check the consent form and the data collection tools. Participants were also informed that they would not get any harm from the study.



### 3.1 Demographic Information of the Participants

Data were analyzed by descriptive statistics and calculated as percentages and presented through tables.

**Table 1: Demographic characteristics of patients with HNC**

<b>Demography</b>	<b>Number</b>	<b>Percentage</b>
<b>Gender</b>		
Male	14	93%
Female	1	7%
<b>Education</b>		
Illiterate	4	27%
Primary	3	13%
S.S.C	5	33%
H.S.C	3	20%
Graduate/Above	1	7%
<b>Occupational Status</b>		
Farmer	5	33%
Businessman	4	27%
Service	2	13%
Day Labor	2	13%
House Wife	1	7%
Retired/Aged	1	7%
<b>Living Status</b>		
Rural Area	9	60%
Urban Area	6	40%

Among 15 participants 93% (14) were male and 7% (1) were female. Regarding educational status, 27% (4) participants were illiterate, 13% (2) were completed education at primary level, 33% (5) participants had completed education at S.S.C level and 20% (3) had

completed education at H.S.C level. Majority of the participants (33%) were farmer and next businessman (27%). Most of the participants (60%) were from rural area and other (40%) from urban area.

### 3.2 Incidence of Patients with HNC According to Age

**Table 2: Percentage of incidence of patients with HNC according to their age**

Age (In year)	Number	Percentage
35-45	2	13%
46-55	5	33%
56-65	6	40%
66-75	1	7%
76-85	1	7%

It is clear that incidences of HNC increased noticeable after age 46 years and most prevalent in the age 56-65 years (40%). The lowest prevalent of the participants found between age 66-75 years and 76-85 years.

### 3.3 Anatomic Site of Head and Neck Cancer

**Table 3: System wise distribution of HNC**

Site	Number	Percentage
Larynx	11	74%
Carcinoma of Tongue	2	13%
Buccal Mucosa	2	13%

Table 3 demonstrates that among 15 participants, majority of participants (74%) had carcinoma of larynx. Separately 13% had carcinoma of tongue and 13% had carcinoma of buccal mucosa.

### 3.4 Treatment of Head and Neck Cancer

**Table 4: Treatment pattern of patients with HNC**

Nature of treatment	Number	Percentage
Radiotherapy	8	53%
Chemotherapy and Radiotherapy	4	27%
Surgery and Radiotherapy	3	20%

Out of 15 participants, most of them (53%) were treated only by radiotherapy. 27% participants were treated with the combination of chemotherapy and radiotherapy and 20% were treated with surgery and radiotherapy.

### 3.5 Descriptive Statistics of the Participants

Investigator took 15 participants to conduct the study, and 14 participants were male and 1 participant was female. Their mean age was 58.2667 years, minimum age was 40 years and maximum was 85 years and. Among overall subscale, the lowest score was 3 at functional well being and the highest score was 38 at additional subscale. Separately, the highest score of each scale represent better quality of life.

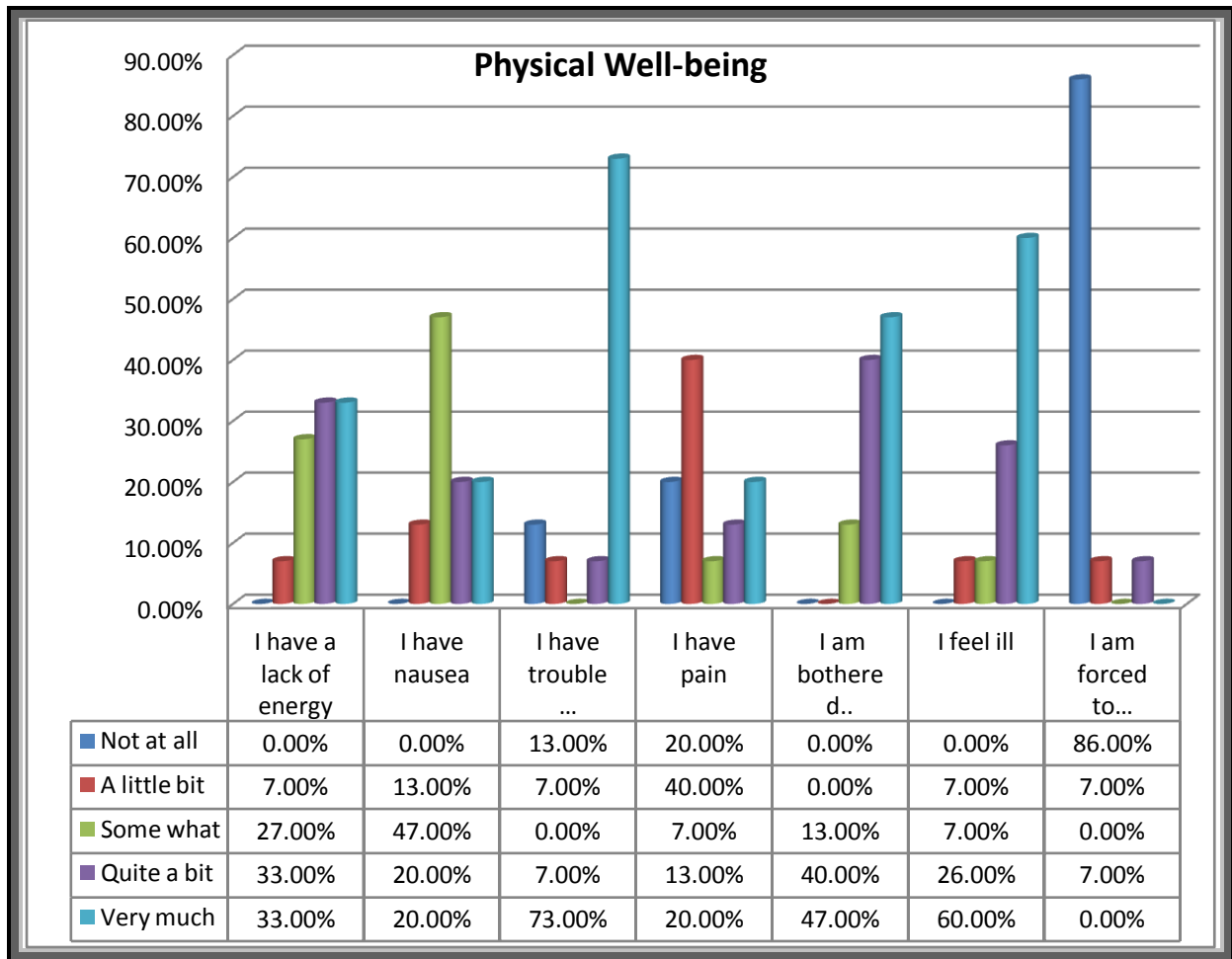
In physical well-being subscale, the mean score of the participants was 17 but the total score physical well-being subscale is 28 which represent medium level of QOL. Participants showed 16.3333 as mean score of social/family well-being subscale out of 24 that means participants had quite a bit good QOL. The mean score of the participants at functional well-being subscale was 8.2 out of 28 that represent very poor QOL. In additional subscale which mostly related with communication, voice and swallowing, participants showed mean score 23.1333 out of 48 that represent moderately poor QOL.

**Table 5: Descriptive Statistics for the quality of life of the people with HNC**

	Minimum	Maximum	Mean	Std. Deviation
Age in year	40.00	85.00	58.2667	11.10641
Physical wellbeing	7.00	22.00	17.0000	4.15761
Social/family wellbeing	6.00	20.00	16.3333	4.48277
Emotional wellbeing	11.00	22.00	18.7333	2.60403
Functional wellbeing	3.00	23.00	8.2000	5.26715
Additional concern	12.00	38.00	23.1333	6.50128

Table 5 demonstrates the descriptive statistics for the quality of life of the people with HNC. On an average, additional concern (one of the primary QOL domain) was higher (M= 23.133) whereas the score of functional wellbeing was lowest (M= 8.2). The score of physical wellbeing, social/family wellbeing and emotional wellbeing were fairly similar. Out of these five domains, data dispersion of emotional wellbeing is less (SD= 2.6) whereas it is higher for additional domain (SD=6.5).

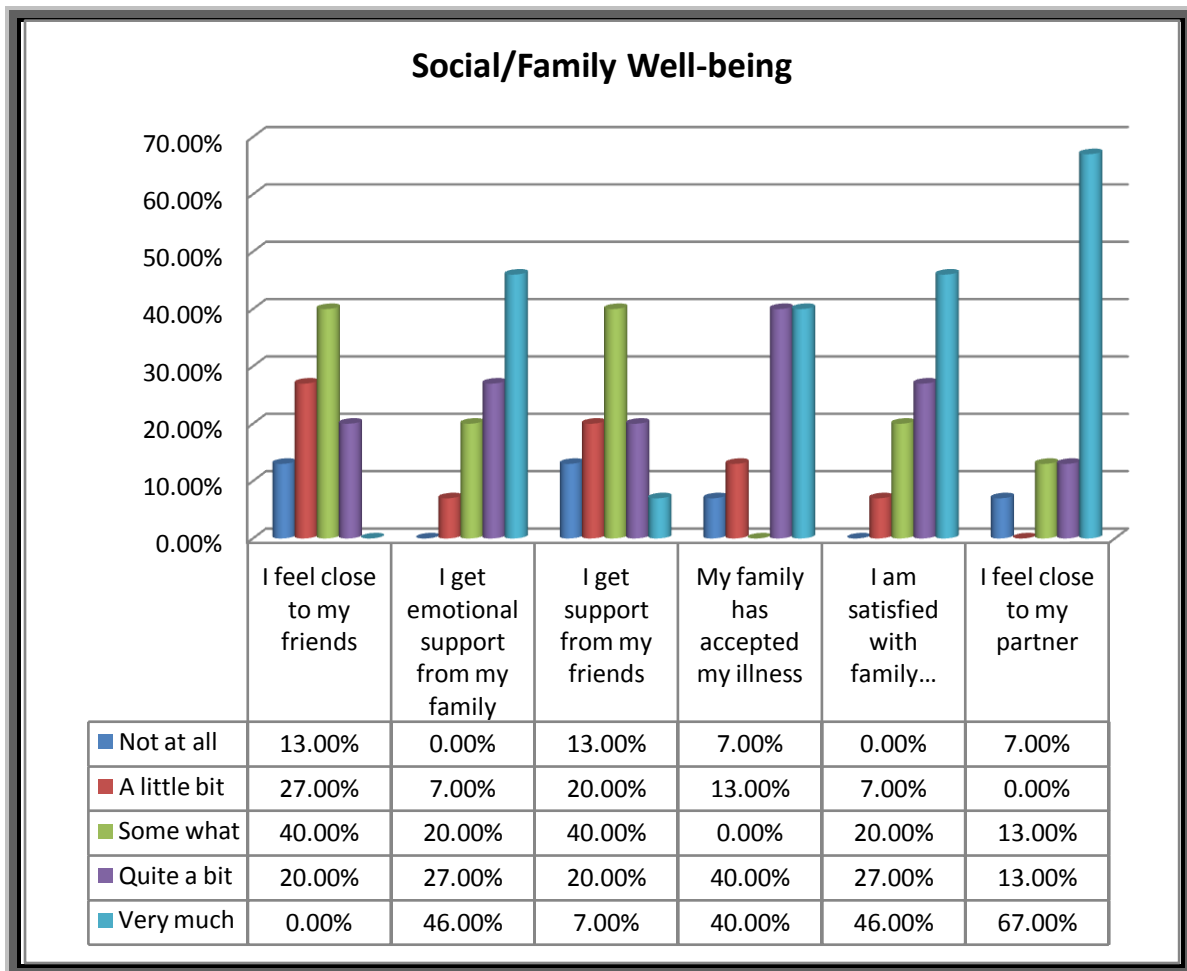
### 3.6 Physical Well-being



**Figure- 3.6: Physical Well-being of the Participants**

The graph shows that majority of the participants (33%) respond that they had very much lack of energy. Most of the participants (73%) answered that they had very much trouble of meeting the needs of their family because of their physical condition. Almost every participant experienced pain at different level whereas most of them (40%) said about quite a little pain into their body. The highest 47% participants were very much bothered where 40% were quite a bite bothered by the side effect of treatment of HNC. Most of the participants (60%) respond that they feel very much ill. Majority of the participants (86%) were not forced to spend time in bed and which was the highest score in physical well-being scale.

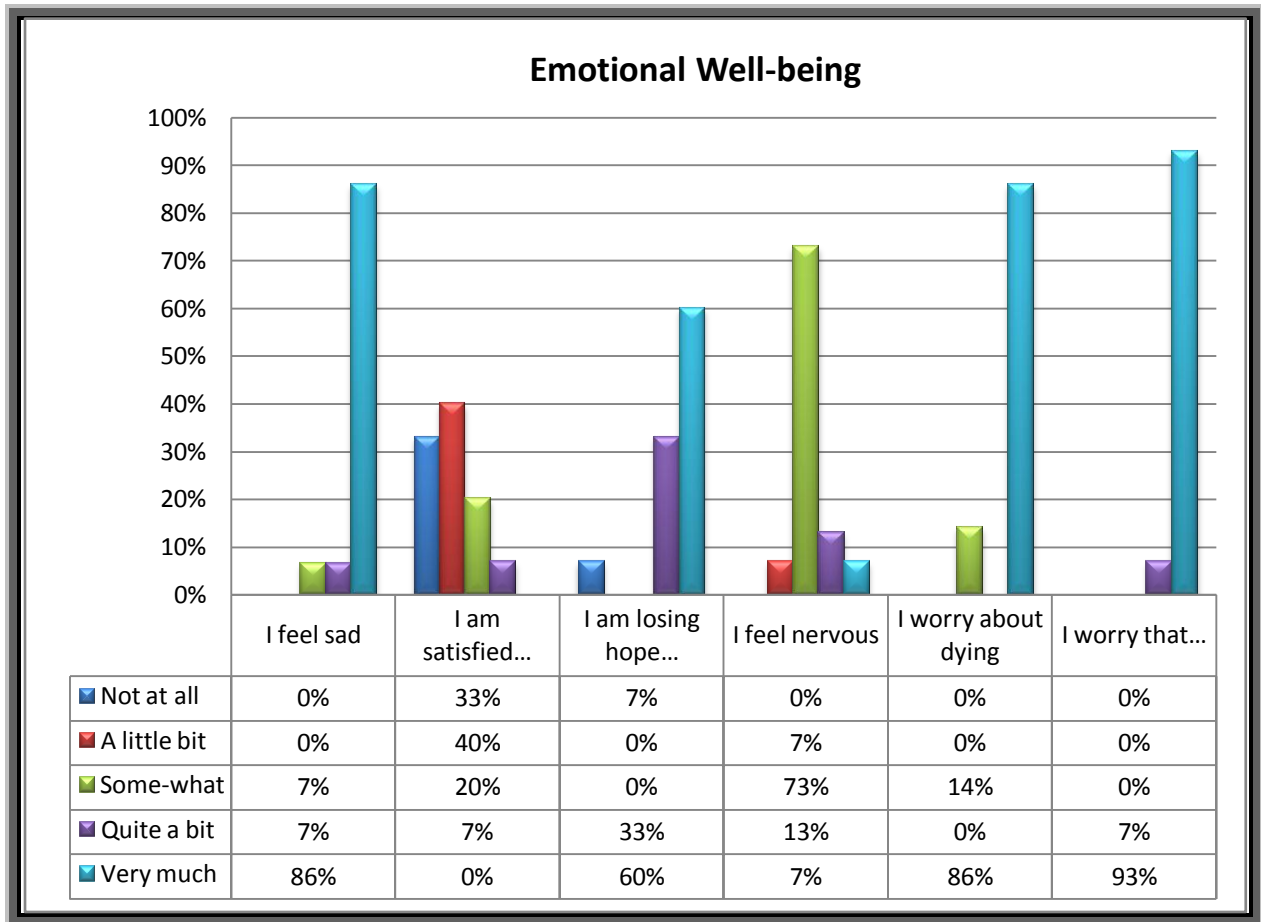
### 3.7 Social/Family Well-being



**Figure- 3.7: Social/family Well-being of the Participants**

Out of 15 participants, majority of them (40%) were respond almost similar in terms of relation with and support from their friends. In family issue, the highest number of participants said that family accepts their illness and they were very much satisfied with family communication about their illness. Most of the participants (46%) were getting very much emotional support from their family. In terms of relation with life partner majority of the participants (67%) were very much satisfied.

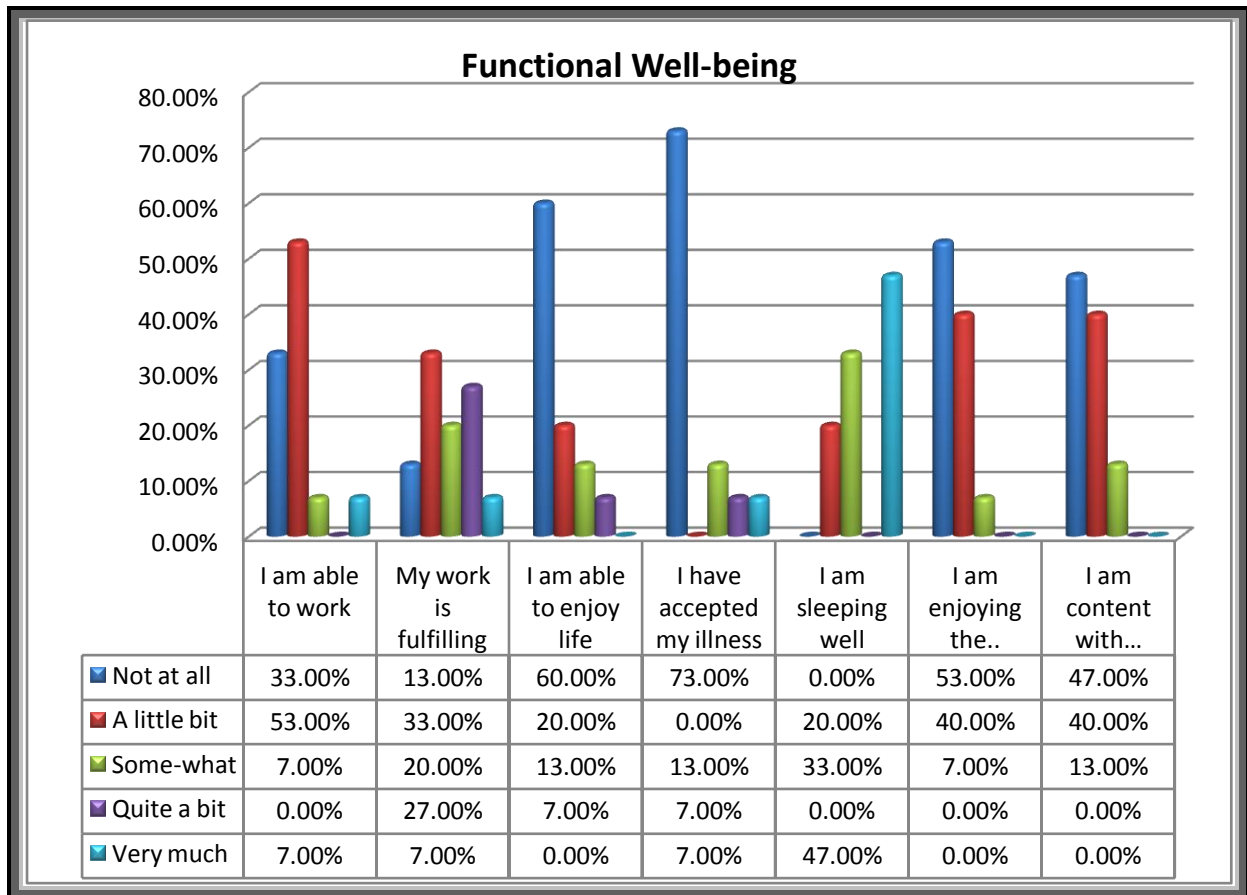
### 3.8 Emotional Well-being



**Figure- 3.8: Emotional Well-being of the Participants**

The graph demonstrates that most of the participants (86%) were very much sad for their current status. Majority of the participants (40%) were a little bit satisfied with how they were coping with their illness where 60% participants were severely losing hope in the fight against of their illness. Most of the participants (73%) were some-what nervous in terms of treatment and its side effect of HNC. Majority of the participants were very much worried about dying and their condition will get worse.

### 3.9 Functional Well-being

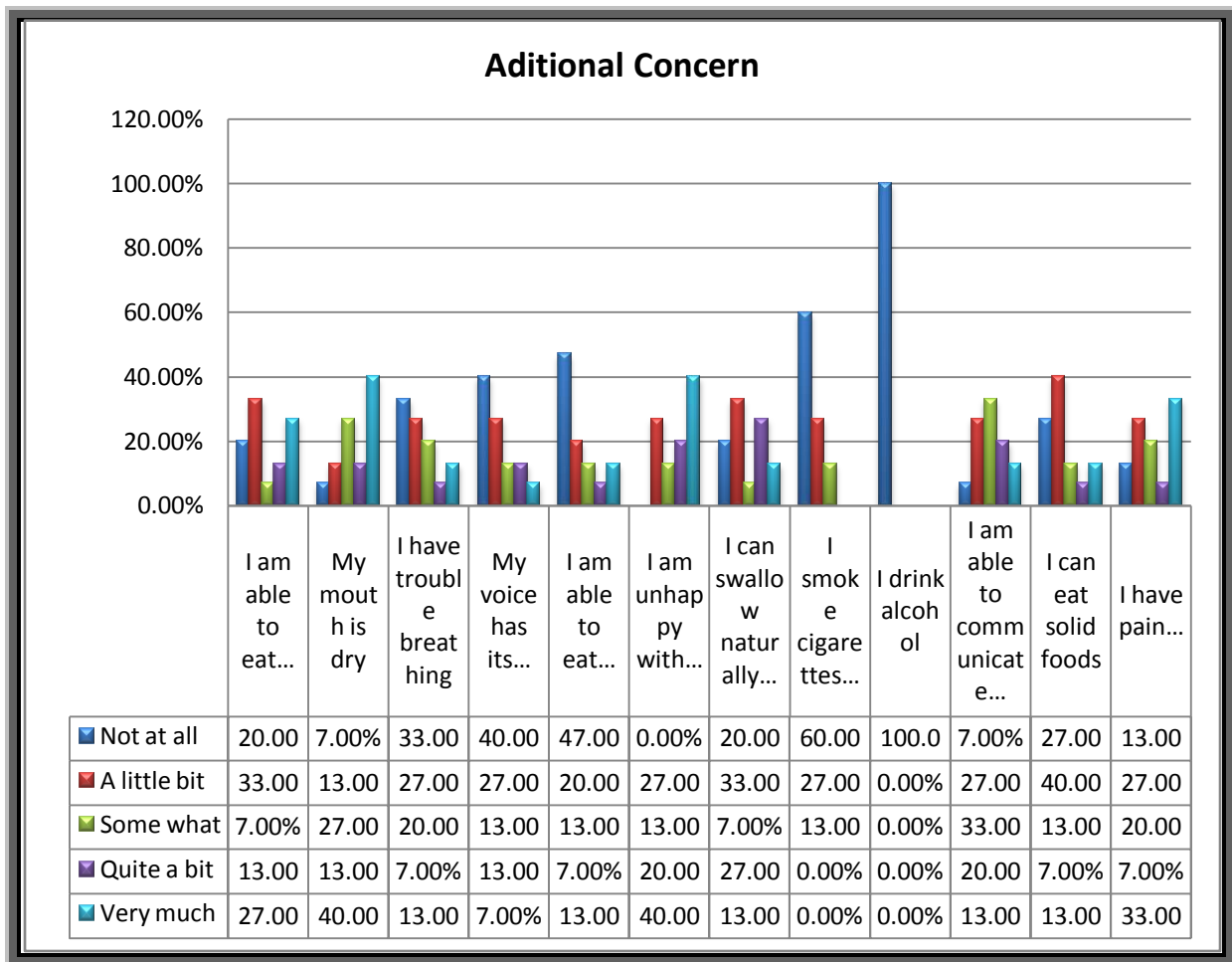


**Figure- 3.9: Functional Well-being of the Participants**

In functional well-being, among 15 participants 53% were able to work a little bit where 33% were unable to work at all. Most of the participants (60%) responded that they are not able to enjoy their life. The highest 73% of the participants could not accept their illness. Majority of the participants (47%) said that they had no trouble in sleep. Most of the participants (53%) were not enjoying at all the things they usually do for fun. Majority of the participants (47%) were not content with present quality of life where 40% participants were little bit content with their present quality of life.



### 3.10 Additional Concerns



**Figure- 3.10: Additional Concern of the Participants**

The graph demonstrates that majority participants (33%) had severe problem of eating and swallowing food whereas 20% respond that they were unable to eat and swallow. Investigator found that most of the participants (47%) were unable eat food according to their need. Most of the participants (40%) had very severe problem of eating solid foods where a few number (13%) no difficulty of eating solid food. In terms of voice and communication, majority of participants (40%) said that their voice does not have its usual quality and strength. Most of the participants (33%) were some-what able to communicate with others. Majority of the participants had very dry mouth (40%) and severe pain in mouth, throat and neck (33%). Most of the participants (33%) had breathing severe problem. Most of participants (60%) do not smoke where 27% had a little bit tendencies to smoke cigarettes or other tobacco products. Among 15 participants, no one had a history of drinking alcohol.

The study was conducted among 15 participants where 93% were male and 7% were female. Joshi et al. (2014) said that HNC is the most common cancer of males in India. Ragin, Modugno and Gollin (2007) revealed that an average incidence rate of head and neck cancer 8.8 in males and 5.1 in females per 100,000 respectively. This study indicates that HNC is very common among male. In this study incidences of HNC increased noticeable after age 46 years and most prevalent in the age 56-65 years (40%). Regarding educational status, 27% participants were illiterate and majority of the participants (33%) were farmer. A study was conducted among 171 cancer patients in Dhaka division, Bangladesh, where majority of the participants were male with a male female ratio 2.1:1 and cancer is prominent after 40 years old and majority were under the age group of 50-60 years. Most of the participants found as illiterate (34.5%) and farmer (28.4%) (Hasan et al. 2012). A study from Ludhiyana, India on a retrospective review of 56,565 histopathological biopsies concluded the malignancy of larynx as the most common amongst males (Mishra and Meherotra, 2014). They also found that cancer of the larynx is the most common head and neck cancer. In this study it was also noticeable that majorities of the participants were male and had carcinoma of larynx (73%). To obtain real view of head and neck cancer patients a population based survey is very essential.

Globally, standard treatments for head and neck cancers include radiation therapy and surgery, and for certain types of head and neck cancer, chemotherapy also recommended by doctors (A snapshot of head and neck cancer, 2013). Curran et al. (2007) said that the most common treatment of head and neck cancer is radiation therapy. According to Dirix, Nuyts and Bogart (2006) radiotherapy is the main treatment of HNC. In this study, radiotherapy found as a common and main treatment of all the participants where the highest numbers of the participants (53%) were treated only by radiotherapy, 27% participants were treated with both chemo and radiotherapy and 20% participants were treated with surgery and radiotherapy.

Results from this study under physical well being suggested that participants treated with head and neck cancer experience a range of common problems. The study obtained that majority of the participants experienced pain at different level whereas most of them (40%) said about quite a little pain into their body. Similar result found in a study conducted in

Nigeria where researchers found that pain is commonly reported in head and neck cancer patients, and has a significant impact on their QOL (Onakoya et al. 2006). Dirix, Nuyts and Bogaert (2006) reported from a survey of 65 patients with HNC where pain was common (58.4%) and interfered with daily activities in 30.8% of patients. The study showed that the majority (47%) participants were very much bothered by the side effect of treatment of HNC. Similar result found from a study that was conducted among 58 participants with HNC which indicate that the participants were most bothered by side effects at the end of treatment (Rose and Yates, 2001).

Combination of both family and friends' support are important to make an individual good QOL. Lack of support either from family or friends, could represent poor QOL. Curran et al. (2007) conducted a survey on 424 patients with HNC where most of the patients had less social contact with their family and friends and they felt isolation from the society. In this study it is also noticeable that majorities of the participants (40%) were not so closed and did not get enough support from their friends. But in terms of relation with life partner majority of the participants (67%) were very much satisfied and (46%) were getting very much mental support from their family. This result reflects family bonding into the community of Bangladesh.

The study infers that the majority of the participants (60%) were unable to enjoy their life. Most of the participants (73%) did not accept their illness and they think they were not content with the quality of life. Common problems on functional subscale found from most of the participants as reduced work ability (53% were able to work a little bit where 33% were unable to work at all). Mallis et al. (2011) have published a study on 92 patients with HNC in Greece where 80.5% of the patients reported worsened financial situation, with the majority (91.3%) of the patients also reporting decreased capacity for work.

Nguyen et al., (2002) reported that speech and swallowing problem are the main complain of the head and neck cancer patients after completing treatment. According to Myers (2005) head and neck cancer and its treatment strikes at the most basic human functions such as the abilities to communicate, eating and social interact. The study obtained that majority participants (33%) had severe problem of eating and swallowing food whereas 20% respond that they were unable to eat and swallow. Investigator found that most of the participants (47%) were unable eat food according to their need where (40%) had very severe problem of eating solid foods. In terms of voice and communication, majority of participants (40%) said

that their voice does not have its usual quality and strength where most of the participants (33%) were some-what able to communicate with others. Majority of the participants had very dry mouth and severe pain in mouth, throat and neck. Mallis et al. (2011) conducted a study on 92 patients with HNC in Greece where the majority of patients reported difficulties communicating with strangers (56.5%) or via telephone (78.3%). They also found swallowing and eating disorders were also reported by a significant percentage of patients 15.2% and 13% respectively. Nguyen et al. (2002) found that speech and swallowing problem are the main complain of the head and neck cancer patients after completing treatment. This study also indicates swallowing and communication difficulty is significant among patients treated with HNC.

Lin, Starmer and Gourin (2012) reported that head and neck cancer patients experience one of the highest rates of depression which affects quality of life, treatment compliance, disease progression, pain tolerance, and increases the risk for suicide. In this study, most of the participants (86%) were very much sad for their current status. Majority of the participants (60%) were severely losing hope in the fight against of their illness. Most of the participants (73%) were some-what nervous in terms of treatment and its side effect of HNC. Onakoya et al. (2006) conducted a research on 50 patients with HNC and found that physical outlook and psychological problem affect on social interactions.

Better score at each subscale indicate good quality of life (Silveira et al. 2010). Descriptive statistics obtained that the mean score of additional concern (one of the primary QOL domain) was higher ( $M= 23.133$ ) whereas the score of functional wellbeing was lowest ( $M= 8.2$ ). The mean score of physical wellbeing, social/family wellbeing and emotional wellbeing were fairly similar. Out of these five domains, data dispersion of emotional wellbeing is less ( $SD= 2.6$ ) whereas it is higher for additional domain ( $SD=6.5$ ). Participant's mean score on physical well-being subscale was 17 and social/family well-being subscale was 16.333. Almost similar score found by Dapuetto et al. (2001) in Uruguay among 140 participants with HNC where they found 15 mean score at physical well-being subscale and 16.1 at social/family well-being subscale and they reported as poor quality of life of participants with HNC. Swallowing difficulty, problem in voice and communication, pain, loss of energy, decrease of work capacity, depression was the main concern of this study which hampering QOL of the patients treated with HNC where loss of the ability to communicate and swallow has a major psychological impact on QOL.

This is the first primary study on QOL of the patients treated with HNC in Bangladesh. So there were some limitations and barriers during conducting the study. The study was done within short period of time and only 15 participants were selected to conduct the whole study. It was a small number of participants to conduct a survey to find out QOL of patients treated with HNC. Investigator did not get any financial support to conduct the study and so it was not possible to move and gather more participants from different hospitals around Bangladesh. Due to lack of number of the participants, the external validity of the study decreased. The QOL of male and female were not studied separately in this study.

By conducting the study, investigator found that majority of the patients had pain and dryness of mouth, lack of energy, inability to work, less social interaction etc. as a result of side effect of HNC treatment. The most significant issue identified from the patients with HNC was voice problem, communication difficulty, swallowing and eating difficulty. This study selected only 15 participants as sample and one study location for conducting the study. It is suggested to increase the number of the sample as well as study location for further study on it. Sample was selected in this study following purposive sampling technique. It will be the best, if randomization should be done in future. It is also suggested for the further study that the QOL of male and female should study separately which will provide a clear idea about the QOL of male and female patients with HNC.

The result of the study can help to the health care providers to obtain a better understanding of HNC patients' QOL and they can use this result to provide a more comprehensive treatment for the patients. This study can help the clinician, patients and carers to raise awareness about the impact of HNC and its treatment. SLT is usually the member of multidisciplinary team who will develop strongest bond with patients throughout the whole treatment process because of their swallowing and communication difficulties. So, this study will provide a clear idea about the types of swallowing and communication difficulties among patients treated with HNC and also it helps to make a unique contribution to the multidisciplinary team for rehabilitation of the patients. SLT can also use this result for providing support, counseling and both pre and postoperative care. Finally, this study will show an evidence for SLT to play a role into cancer hospital in Bangladesh.

Quality of life is an objective measure that shows an individual's appearance including physical, emotional, functional and social status into the community. This study clearly indicates poor QOL of the participants treated with HNC. Majority of the patients mentioned pain in mouth and throat, dryness of mouth, loss of energy, inability to work, less social interaction and hopeless and worry as a result of side effect of HNC treatment. Voice problem, communication difficulty, swallowing and eating difficulty was the most important issue identified from the patients. Inability of communication and swallowing difficulty hampered into their physical, emotional, functional and social well-being. And all together make QOL of an individual poor. So, speech and language therapist has an important role to play at each of these stages aims to contribute to the assessment, treatment, maximizing and maintenance of abilities relating to speech, voice, swallowing and communication.



## References

- A snapshot of head and neck cancer. (2013). *National cancer institute*. Retrieved from <http://www.cancer.gov/researchandfunding/snapshots>
- Adeyemi, B. F., Adekunle, L. V., Kolude, B.M., Akang E.E.E., and Lawoyin, (2008). Head and neck cancer: a clinicopathological study in a tertiary center. *Journal of the National Medical Association*, 100(6), 690-697. Retrieved from <http://www.nmanet.org>
- Andrews, M. L. (2006). *Manual of voice treatment: pediatrics through geriatrics* (3<sup>rd</sup> ed.). USA: Prentice-hall.
- Andrews, M. L., & Summers, A. C. (2002). *Voice treatment for children and adolescents* (2<sup>nd</sup> ed.). Canada: Singular.
- Bailey, D. M. (1997). *Research for health professional* (2<sup>nd</sup> ed.). Philadelphia: F. A. Davis Company.
- Baumgartner, C.A.B., (2008). Management of communication and swallowing in intensive care: the role of the speech pathologist. *AACN advanced critical care*, 19 (4), 433-443. <http://hinarilogin.research4life.org/>
- Bonstingl, J. J. (2000). *Introduction to the social science*. USA: Prentice-hall.
- Boone, D. R. (1983). *The voice and voice therapy* (3<sup>rd</sup> ed.). USA: Prentice-hall.
- Cognetti, D, M., Weber, R. S., & Lai, S. Y. (2008). Head and neck cancer: an evolving treatment paradigm. *Cancer*, 113(7), 1911–32. Retrieved from <http://www.interscience.wiley.com>
- Colton, R. H., Casper, J, K., & Hirano, M. (1996). *Understanding voice problems: a psychological perspective for diagnosis and treatment* (2<sup>nd</sup> ed.). USA: Williams & Wilkins.

- Curran, D., Giralt, J., Harari, P. M., Ang, K. K., Cohen, R. B., Kies, M. S., Jassem, J., Baselga, J., Rowinsky, E. K., Amellal, N., Comte, S., & Bonner, J. A. (2007). Quality of life in head and neck cancer patients after treatment with high-dose radiotherapy alone or in combination with cetuximab. *Journal of Clinical Oncology*, 25, 2191-2197. Retrieved from <http://jco.ascopubs.org>
- Dapueto, J. J., Francolino, C., Gotta, I., Levin, R., Alonso, I., Barrios, E., Afonzo, Y., & Cambiasso, S. (2001). Evaluation of the Functional Assessment of Cancer Therapy–General Questionnaire (FACT–G) in a South American Spanish speaking population. *Psycho-Oncology* 10, 88–92. Retrieved from <http://hinarilogin.research4life.org/>
- DePoy, E., & Gitlin L. N. (1998). *Introduction to research: understanding and applying multiple strategies* (2<sup>nd</sup> ed.). USA: Mosby.
- Dhaar, G. M., & Robbani, I. (2006). *Foundation of community medicine*. New Delhi, India: Elsevier.
- Dirix, P., Nuyts, S., & Bogaert, W. V. (2006). Radiation-induced xerostomia in patients with head and neck cancer: a literature review. *Cancer*, 107, 2525–34. Retrieved from <http://www.interscience.wiley.com>
- Doyle, P. C. (2005). Rehabilitation in head and neck cancer. In P. C. Doyle, & R. L. Keith (Eds.), *Contemporary consideration in the treatment and rehabilitation of head and neck cancer: voice, speech and swallowing* (pp. 5-15). USA: Pro-ed.
- Enderby, P., Pickstone, C., John, C., Fryer, K., Cantrell, A., & Papaioannou, D. (2009). *Royal College of Speech and Language Therapists*. Retrieved from [http://www.rcslt.org/speech\\_and\\_language\\_therapy/commissioning/head\\_and\\_neck\\_cancer\\_plus\\_intro](http://www.rcslt.org/speech_and_language_therapy/commissioning/head_and_neck_cancer_plus_intro)
- Glaze, L. E. (2005). Counseling the laryngectomized patient and family. In P. C. Doyle, & R. L. Keith (Eds.), *Contemporary consideration in the treatment and rehabilitation of head and neck cancer: voice, speech and swallowing* (pp. 353-378). USA: Pro-ed.

- Goon, P. K.C., Stanley, M. A., Ebmeyer, J., Steinstrasser, L., Upile, T., Jerjes, W., Sprekelsen, M. B., Gorner, M., & Sudhoff, H. H. (2009). HPV and head and neck cancer: a descriptive update. *Head & Neck Oncology*, 36 (1), 1-8. Retrieved from <http://www.headandneckoncology.org/pdf/>
- Graham, M. S. (2005). Taking it to the limits. In P. C. Doyle, & R. L. Keith (Eds.), *Contemporary consideration in the treatment and rehabilitation of head and neck cancer: voice, speech and swallowing* (pp. 379-430). USA: Pro-ed.
- Greene, M. C. L., & Mathieson, L. (1991). *The voice and its disorder* (5<sup>th</sup> ed.). London, England: Whurr Publisher.
- Hasan, N., Uddin, M. M., Rfiquzzaman, M., Chowdhury, S. S., & Wahed, T. B. (2012). Distribution of types of cancer and patterns of cancer treatment among the patients at various hospitals in Dhaka division, Bangladesh. *International Research Journal of Pharmacy*, 3 (3), 219-222. Retrieved from <http://www.irjponline.com>
- Hicks, C. M. (2000). *Research methods for clinical therapists* (3<sup>rd</sup> ed.). London: Churchill Livingstone.
- Hillman, R.E., Walsh, M. J., & Heaton, J. T. (2005). Laryngectomy speech rehabilitation. In P. C. Doyle, & R. L. Keith (Eds.), *Contemporary consideration in the treatment and rehabilitation of head and neck cancer: voice, speech and swallowing* (pp. 75-90). USA: Pro-ed.
- Human resources for treating new cancer cases in Bangladesh. (2014). Retrieved from <http://globocan.iarc.fr/>
- Hussain, S. A., & Sullivan, R. (2013). Cancer control in Bangladesh. *Japanese Journal of Clinical Oncology*, 43(12), 1159–1169. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3842101/pdf/hyt140.pdf>
- Jarrell, B. E., Carabasi, R.A., & Radmoski, J. S. (2000). *Surgery* (4<sup>th</sup> ed.). USA: Lippincott Williams & Wilkins.

- Joshi, P., Dutta, S., Chaturvedi, P., & Nair, S. (2014). Head and neck cancers in developing countries. *Rambam Maimonides Medical Journal*, 5 (2), doi: 10.5041/RMMJ.10143 Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4011474/>
- Killgu, H., Gottwald, F., Haderlein, T., Maier, A., Rosanowski, F., Iro, H., Psychogios, G., & Schustera, M. (2010). Voice handicap and health-related quality of life after treatment for small laryngeal carcinoma. *Folia Phoniatr Logop*, 63, 122-128. Retrieve from <http://hinarilogin.research4life.org/>
- Kothari, C.R. (2004). *Research methodology: methods & techniques* (2<sup>nd</sup> ed.). New Delhi: New Age International Publisher.
- Kumar, P. & Clark, M. (2012). *Clinical medicine* (8<sup>th</sup> ed.). Spain: Saunders Elsevier.
- Langendijk, J. A., Doornaert, P., Leeuw, I. M. V., Leemans, C. R., Aaronson, N. K., & Slotman, B. J. (2008). Impact of late treatment-related toxicity on quality of life among patients with head and neck cancer treated with radiotherapy. *Journal of Clinical Oncology*, 26, 3770-3776. Retrieved from <http://jco.ascopubs.org>
- Lewin, J. S. (2005). Problem associated with alaryngeal speech development. In P. C. Doyle, & R. L. Keith (Eds.), *Contemporary consideration in the treatment and rehabilitation of head and neck cancer: voice, speech and swallowing* (pp. 593-623). USA: Pro-ed.
- Lin, B. M., Starmer, H. M., & Gourin, C. G. (2012). The relationship between depressive symptoms, quality of life, and swallowing function in head and neck cancer patients 1 year after definitive therapy. *Laryngoscope*, 122, 1518–1525. Retrieved from <http://hinarilogin.research4life.org/>
- List, M. A.M., Antonio, L. L., Cella, D. F., Siston, A., Mumby, P., Haraf, D., & Vokes, E. (1996). The performance status scale for head and neck cancer patients and the functional assessment of cancer therapy-head and neck scale: a study of utility and validity. *Cancer*, 77, 2294-301. Retrieved from <http://hinarilogin.research4life.org/>
- Lundstrom, E., Hammarberg, B., & Wikland, E. M. (2009). Voice handicap and health-related quality of life in laryngectomees: Assessments with the use of VHI and

- EORTC questionnaires. *Folia Phoniatr Logop*, 61(2), 83-92. Retrieved from <http://hinarilogin.research4life.org/uniquesigwww.karger.com/uniquesig/Article/Pdf>
- Lundstrom, E., & Hammarberg, B. (2011). Speech and voice after laryngectomy: Perceptual and acoustical analyses of tracheoesophageal speech related to voice handicap index. *Folia Phoniatr Logop*, 63, 98-108. Retrieved from <http://hinarilogin.research4life.org/uniquesigwww.karger.com/uniquesig/Article/Pdf>
- Mallis, A., Goumas, P. D., Mastronikolis, N. S., Panogeorgou, T., Stathas, T., Prodromaki, K., & Papadas, T. A. (2011). Factors influencing quality of life after total laryngectomy: a study of 92 patients. *European Review for Medical and Pharmacological Sciences*, 15 (8), 937-942. Retrieved from <http://www.europeanreview.org/wp/wp-content/uploads/1016.pdf>.
- Mishra, A., & Meherotra, R. (2014) Head and neck Cancer: Global burden and regional trends in India. *Asian Pacific Journal of Cancer Prevention*, 15 (2), 537-550. Retrieved from [http://www.apocpcontrol.org/paper\\_file/issue\\_abs/Volume15\\_No2](http://www.apocpcontrol.org/paper_file/issue_abs/Volume15_No2)
- Myers, C. (2005). Quality of life and head and neck cancer. In P. C. Doyle, & R. L. Keith (Eds.), *Contemporary consideration in the treatment and rehabilitation of head and neck cancer: voice, speech and swallowing* (pp. 697-736). USA: Pro-ed.
- National head and neck cancer audit. (2011). *Health and social care information centre: head and neck cancer audit*. Retrieved from <http://www.hqip.org.uk>
- Nguyen, N. P., Sallah, S., Karlsson, U., & Antoine, J. E., (2002). Combined chemotherapy and radiation therapy for head and neck malignancies: quality of life issues. *Cancer*, 94, 1131-41. Retrieved from <http://hinarilogin.research4life.org/>
- Onakoya, P. A., Nwaorgu, O. G., Adenipekun, A. O., Aluko, A. A., & Ibekwe, T. S. (2006). Quality of life in patients with head and neck cancers. *Journal of the National Medical Association*, 98 (5), 765-770. Retrieved from <http://hinarilogin.research4life.org/>
- Prokop, J. (2012). Quality of life issues in singers with voice disorders. *The Voice*, 17 (1), 3-5. Retrieved from [http:// voicefoundation.org/](http://voicefoundation.org/)

- Ragin, C. C. R., Modugno, F., & Gollin, S. M. (2007). The epidemiology and risk factors of head and neck Cancer: a focus on human papillomavirus. *Journal of Dental and Craniofacial Research* 6(2):104-114. Retrieved from [http://www.oralcancerfoundation.org/hpv/pdf/HPV\\_Research\\_07](http://www.oralcancerfoundation.org/hpv/pdf/HPV_Research_07)
- Ringasha, J., Lockwoodc, G., Sullivan, B., Wardea, P., Bayleya, A., Cummingsa, B., Kim, J., Sellmann, S., and Waldron, J. (2007). Hyperfractionated, accelerated radiotherapy for locally advanced head and neck cancer: Quality of life in a prospective phase I/II trial. *Radiotherapy and Oncology*, doi:10.1016/j.radonc.2007.12.028. Retrieved from <http://www.thegreenjournal.com>
- Rinkel, R. N., Leeuw, V., Reij, E. J., Aaronson, N. K., & Leemans, R. (2008). Speech handicap index in patients with oral and pharyngeal cancer: Better understanding of patients' complaints. *Head & Neck*, 30 (3), 868–874. Retrieved from <http://www.interscience.wiley.com>
- Robertson, S. M., Yeo, J. C. L., Dunnet, C., Young, D., & MacKenzie, K. (2012). Voice, swallowing, and quality of life after total laryngectomy- results of the West of Scotland laryngectom audit. *Head & Neck*, 34(1), 59-65. doi: 10.1002/hed.21692. Retrieved from [http://www.sbccp.org.br/arquivos/HN\\_01\\_2012\\_voice\\_swallowing\\_and\\_quality.pdf](http://www.sbccp.org.br/arquivos/HN_01_2012_voice_swallowing_and_quality.pdf)
- Rose, P. M., and Yates, P. (2001). Quality of life experienced by patients receiving radiation treatment for cancers of the head and neck. *Cancer Nursing*, 24(4), 255-263. Retrieved from <http://eprints.qut.edu.au/>
- Roth, F.P., & Worthington, C. K. (2011). *Treatment resource manual: for speech-language pathology* (4<sup>th</sup> ed.). USA: Delmar.
- Salmon, S. J. (2005). Commonalities among alaryngeal speech methods. In P. C. Doyle, & R. L. Keith (Eds.), *Contemporary consideration in the treatment and rehabilitation of head and neck cancer: voice, speech and swallowing* (pp. 59-74). USA: Pro-ed.
- Schneider, S., Plank, C., Eysholdt, U., Schutzenberger, A., & Rosanowski, F. (2011). Voice function and voice-related quality of life in the elderly. *Gerontology*, 57, 109–114. Retrieved from <http://hinarilogin.research4life.org/>

- Schuster, M., Lohscheller, J., Hoppe, U., Kummer, P., Eysholdt, U., & Rosanowski, F. (2004). Voice handicap of laryngectomees with tracheoesophageal speech. *Folia Phoniatr Logop*, 56 (1), 62–67. doi: 10.1159/000075329. Retrieved from <http://hinarilogin.research4life.org/uniquesigwww.karger.com/uniquesig/Article/Pdf>
- Shahriar, M., Islam, R.B., Mahmood, A. S., Mamun, M. S. A., Nahar, S. S., Sadiana, T., & Shahid, S. (2011). Risk factors and trends of common cancers in Bangladesh: Outcome of hospital based case control survey conducted in Dhaka city, Bangladesh. *Stamford Journal of Pharmaceutical Sciences*, 4(2), 35-41. Retrieved from <http://www.researchgate.net/publication/259356209>
- Shaughnessy, J. J., Zechmeister, E. B., & Zechmeister, J. S. (2003). *Research methods in psychology* (6<sup>th</sup> ed.). USA: McGraw- Hill.
- Silveira, A. P., Goncalves, J., Sequeira, T., Ribeiro, C., Lopes, C., Monteiro, E., & Pimentel, F. L. (2010). Patient reported outcomes in head and neck cancer: selecting instruments for quality of life integration in clinical protocols. *Head & Neck Oncology*, 32 (2). Retrieved from <http://www.headandneckoncology.org/>
- Talukder, M. H., Jabeen, S., Islam, M. J., Karim, N., Shaheen, S., Mamun, A. A., Alam, S., Baki, M. O., & Zaman M. (2009). *Cancer Registry Report of the NICRH, 2005-2007*. Retrieved from <http://www.ban.searo.who.int/LinkFiles/>
- Webster, K., Cella, D., & Yost, K. (2003). The Functional Assessment of Chronic Illness Therapy (FACIT) Measurement System: properties, applications, and interpretation. *Health and Quality of Life Outcomes*, 79 (1), doi: 10.1186/1477-7525-1-79. Retrieved from <http://www.hqlo.com/content/1/1/79>
- Woodard, T. D., Oplatek, A., & Petruzzelli, G. J., (2007). Life after total laryngectomy: a measure of long-term survival, function, and quality of life. *Arch Otolaryngol Head Neck Surgery*, 133, 526-532. Retrieved from <http://archotol.jamanetwork.com/>
- Zaman, M. M. (2009, February 14). Tobacco and cancer situation in Bangladesh. *The Daily Star*. Retrieved from [http://archive.thedailystar.net/newDesign/print\\_news](http://archive.thedailystar.net/newDesign/print_news)

## Annexure: 1 FACT-H&N Data Collection Tool (Bangla Version)

নামঃ

বয়সঃ

তারিখঃ

শারীরিক অবস্থা	একেবারেই না	খুব সামান্য	মাঝে মাঝে	একটু বেশি	অনেক বেশি
আমি দুর্বলতাবোধ করছি	০	১	২	৩	৪
আমি বিতৃষ্ণাবোধ করছি	০	১	২	৩	৪
আমার শারীরিক সমস্যার কারণে আমার পরিবারের চাহিদা মেটাতে সমস্যা হচ্ছে	০	১	২	৩	৪
আমার শরীরে ব্যাথা আছে	০	১	২	৩	৪
চিকিৎসার পার্শ্ব-পতিক্রিয়ায় আমি বিব্রত	০	১	২	৩	৪
আমি অসুস্থবোধ করছি	০	১	২	৩	৪
আমাকে বিছানায় সময় কাটানোর জন্য চাপ দেয়া হয়	০	১	২	৩	৪

সামাজিক ও পারিবারিক অবস্থা	একেবারেই না	খুব সামান্য	মাঝে মাঝে	একটু বেশি	অনেক বেশি
আমার বন্ধুদের সাথে আমার ঘনিষ্ঠ সম্পর্ক	০	১	২	৩	৪
আমি আমার পরিবার থেকে মানসিক সহযোগিতা পাই	০	১	২	৩	৪
আমি আমার বন্ধুদের থেকে সহযোগিতা পাই	০	১	২	৩	৪
আমার পরিবার আমার অসুস্থতাকে গ্রহণ করেছে	০	১	২	৩	৪
আমি আমার অসুস্থতা বিষয়ক পারিবারিক কার্যকলাপে খুশি	০	১	২	৩	৪
আমার সঙ্গীর সাথে আমার ঘনিষ্ঠ সম্পর্ক	০	১	২	৩	৪

মানসিক অবস্থা	একেবারেই না	খুব সামান্য	মাঝে মাঝে	একটু বেশি	অনেক বেশি
আমি কষ্টে আছি	০	১	২	৩	৪
আমি আমার সমস্যা যে ভাবে খাপ খাইয়ে নিচ্ছি তা নিয়ে সন্তুষ্ট	০	১	২	৩	৪
আমি আমার অসুখের বিরুদ্ধে যুদ্ধে আশা হাড়িয়ে ফেলছি	০	১	২	৩	৪
আমি বিচলিতবোধ করছি	০	১	২	৩	৪
আমি আমার মৃত্যু নিয়ে চিন্তিত	০	১	২	৩	৪
আমার অবস্থা আরও খারাপ হয়ে যেতে পারে এ নিয়ে আমি চিন্তিত	০	১	২	৩	৪



দৈনন্দিন কার্যক্রমের অবস্থা	একেবারেই না	খুব সামান্য	মাঝে মাঝে	একটু বেশি	অনেক বেশি
আমি কাজ করতে সক্ষম (বাড়ির কাজ সহ)	০	১	২	৩	৪
আমার কাজ সম্পন্ন হচ্ছে (বাড়ির কাজ সহ)	০	১	২	৩	৪
আমি জীবনকে উপভোগ করতে সক্ষম	০	১	২	৩	৪
আমি আমার অসুস্থতাকে গ্রহণ করেছি	০	১	২	৩	৪
আমি ভালোভাবে ঘুমাতে পারছি	০	১	২	৩	৪
আমি যেটা আনন্দ পাওয়ার জন্য করি সেটা উপভোগ করছি	০	১	২	৩	৪
আমি আমার বর্তমান জীবন নিয়ে পরিতৃপ্ত	০	১	২	৩	৪

অতিরিক্ত গুরুত্বপূর্ণ বিষয়	একেবারেই না	খুব সামান্য	মাঝে মাঝে	একটু বেশি	অনেক বেশি
আমি আমার পছন্দের খাবারগুলো খেতে পারছি	০	১	২	৩	৪
আমার মুখ শুষ্ক থাকে	০	১	২	৩	৪
আমার শ্বাস-প্রশ্বাসে সমস্যা আছে	০	১	২	৩	৪
আমার কণ্ঠস্বরে স্বাভাবিক মান ও দৃঢ়তা আছে	০	১	২	৩	৪
আমি আমার চাহিদা মত খাবার খেতে পারছি	০	১	২	৩	৪
আমি আমার চেহারা এবং গলার অবস্থা নিয়ে অসুখী	০	১	২	৩	৪
আমি সহজ ও স্বাভাবিকভাবে খাবার গিলতে পারছি	০	১	২	৩	৪
আমি সিগারেট অথবা অন্যান্য তামাক জাতীয় দ্রব্য ব্যবহার করি	০	১	২	৩	৪
আমি মদ পান করি (উদাহরণ- বেয়ার, উয়াইন ইত্যাদি)	০	১	২	৩	৪
আমি অন্যদের সাথে যোগাযোগ করতে সক্ষম	০	১	২	৩	৪
আমি শক্ত খাবার খেতে পারছি	০	১	২	৩	৪
আমার মুখ, গলা অথবা ঘাড় ব্যথা আছে	০	১	২	৩	৪

## **Annexure: 2 FACT-H&N Data Collection Tool (English Version)**

---

<b>PHYSICAL WELL-BEING</b>	<b>Not at all</b>	<b>A little bit</b>	<b>Some what</b>	<b>Quite a bit</b>	<b>Very much</b>
I have a lack of energy .....	0	1	2	3	4
I have nausea .....	0	1	2	3	4
Because of my physical condition, I have trouble meeting the needs of my family.....	0	1	2	3	4
I have pain .....	0	1	2	3	4
I am bothered by side effects of treatment .....	0	1	2	3	4
I feel ill .....	0	1	2	3	4
I am forced to spend time in bed .....	0	1	2	3	4
 <b>SOCIAL/FAMILY WELL-BEING</b>					
I feel close to my friends .....	0	1	2	3	4
I get emotional support from my family .....	0	1	2	3	4
I get support from my friends .....	0	1	2	3	4
My family has accepted my illness.....	0	1	2	3	4
I am satisfied with family communication about my illness .....	0	1	2	3	4
I feel close to my partner (or the person who is my main support) .....	0	1	2	3	4

**EMOTIONAL WELL-BEING**

	<b>Not at all</b>	<b>A little bit</b>	<b>Some -what</b>	<b>Quite a bit</b>	<b>Very much</b>
I feel sad.....	0	1	2	3	4
I am satisfied with how I am coping with my illness.....	0	1	2	3	4
I am losing hope in the fight against my illness.....	0	1	2	3	4
I feel nervous .....	0	1	2	3	4
I worry about dying .....	0	1	2	3	4
I worry that my condition will get worse .....	0	1	2	3	4

**FUNCTIONAL WELL-BEING**

	<b>Not at all</b>	<b>A little bit</b>	<b>Some -what</b>	<b>Quite a bit</b>	<b>Very much</b>
I am able to work (include work at home) .....	0	1	2	3	4
My work (include work at home) is fulfilling .....	0	1	2	3	4
I am able to enjoy life.....	0	1	2	3	4
I have accepted my illness.....	0	1	2	3	4
I am sleeping well .....	0	1	2	3	4
I am enjoying the things I usually do for fun .....	0	1	2	3	4
I am content with the quality of my life right now .....	0	1	2	3	4

**ADDITIONAL CONCERNS**

	<b>Not at all</b>	<b>A little bit</b>	<b>Some -what</b>	<b>Quite a bit</b>	<b>Very much</b>
I am able to eat the foods that I like.....	0	1	2	3	4
My mouth is dry .....	0	1	2	3	4
I have trouble breathing .....	0	1	2	3	4
My voice has its usual quality and strength .....	0	1	2	3	4
I am able to eat as much food as I want.....	0	1	2	3	4
I am unhappy with how my face and neck look.....	0	1	2	3	4
I can swallow naturally and easily.....	0	1	2	3	4
I smoke cigarettes or other tobacco products.....	0	1	2	3	4
I drink alcohol (e.g. beer, wine, etc.) .....	0	1	2	3	4
I am able to communicate with others .....	0	1	2	3	4
I can eat solid foods .....	0	1	2	3	4
I have pain in my mouth, throat or neck .....	0	1	2	3	4

### **Annexure: 3 Demographic Information Chart**

---

---

**Name:**

**Age:**

**Sex:**

**Educational Level:**

**Occupation:**

**Mobile Number:**

**Current Living Status:**

**Age at Diagnosis:**

**Diagnosis:**

**Anatomic Site:**

**Treatment:**

**Duration of treatment:**

- **Surgery:**
  - **What kind of Surgery:**
  - **Time of surgery:**
- **Radiation:**
  - **How much radiation:**
  - **Time since radiation completed:**
- **Chemotherapy:**

## Annexure: 4 Bangla Consent Form

### সম্মতি পত্র

গবেষক মোঃ জাহিদুল ইসলাম বাংলাদেশ হেলথ প্রফেশনস ইন্সটিটিউটের বি. এস. সি. ইন স্পীচ এন্ড ল্যাঙ্গুয়েজ থেরাপি বিভাগের চতুর্থ বর্ষের ছাত্র। এই গবেষণা স্পীচ এন্ড ল্যাঙ্গুয়েজ থেরাপি বিভাগের অধ্যয়নের একটি অংশ। তার গবেষণার বিষয়ঃ হেড এন্ড নেক ক্যান্সারে আক্রান্ত ব্যক্তির জীবনে চিকিৎসা পরবর্তী প্রভাব।

এই গবেষণায় আমি ..... একজন অংশগ্রহণকারী এবং আমি এই গবেষণার উদ্দেশ্য পরিষ্কার ভাবে জানতে পেরেছি। আমি যে কোন সময় এবং গবেষণার যে কোন পর্যায়ে আমার অংশগ্রহণ প্রত্যাহার করতে পারি। এ জন্য আমি কারো কাছে জবাবদিহি করতে বাধ্য নই। এই গবেষণায় অংশগ্রহণ করলে তা আমার বর্তমান ও ভবিষ্যতে কোন প্রকার প্রভাব ফেলবেনা।

সাক্ষাতের সকল তথ্য যেগুলো গবেষণার কাজে ব্যবহৃত হবে, সেগুলো সম্পূর্ণভাবে গোপন থাকবে। শুধুমাত্র গবেষক এ তথ্যগুলো ব্যবহারের অধিকার পাবে। আমি গবেষণার পদ্ধতি, জটিলতা অথবা সাফল্যের ব্যাপারে গবেষকের সাথে আলোচনা করতে পারব।

আমি উপরোক্ত সকল তথ্যগুলো সম্পর্কে জানি এবং আমি এই গবেষণায় অংশগ্রহণে সম্মতি জ্ঞাপন করছি।

অংশগ্রহণকারীর সাক্ষর/ টিপসই :..... তারিখঃ.....

গবেষকের সাক্ষরঃ..... তারিখঃ.....

সাক্ষীর সাক্ষর/ টিপসই :..... তারিখঃ.....

## **Annexure: 5 Permission Letter for Conducting Research Project**

### **Permission Letter for Conducting Research Project**

Date: 3<sup>rd</sup> November, 2014

To

Head (Acting),

Department of Speech & Language Therapy

Bangladesh Health Professions Institute (BHPI)

CRP-Chapain, Savar, Dhaka- 1343

**Subject:** Prayer for seeking permission to conduct the research project.


Sir,

With due respect I state that I am a 4<sup>th</sup> year student of B. Sc. in Speech and Language Therapy of BHPI, the academic institute of CRP. I am sincerely seeking permission to conduct my research project as a partial fulfillment of the requirements for the degree of B. Sc. in Speech and Language Therapy. The title of my project is “**Quality of Life in Patients Treated with Head and Neck Cancer**”. The main objective of this study is to identify the quality of life in patients treated with head and neck cancer.

Now I am seeking your kindness to approve me to start research project and would like to guarantee that anything of my research project will not harmful for the participants and confidentiality will maintain for each participant.

So, I therefore pray and hope that you would be kind enough to grant me the permission of conduction the research project and help me to conduct a successful study as a part of my course.

Yours obediently,




Md. Zahidul Islam

4<sup>th</sup> year student of B. Sc. in Speech and Language Therapy

Bangladesh Health Professions Institute (BHPI)

CRP-Chapain, Savar, Dhaka- 1343

<b>Approved by</b>	<b>Comments and Signature</b>
<b><u>Head (Acting)</u></b> Md. Jahangir Alam Department of Speech & Language Therapy Bangladesh Health Professions Institute (BHPI). CRP-Chapain, Savar, Dhaka- 1343	You are permitted to conduct the study. Good Luck! 

## **Annexure: 6 Permission Letter for Collecting Data**

---

---

### Permission Letter for Collecting Data

Date: 3<sup>rd</sup> November, 2014

To

Head (Acting),

Department of Speech & Language Therapy

Bangladesh Health Professions Institute (BHPI)

CRP-Chapain, Savar, Dhaka- 1343

**Subject:** Prayer for permission to data collection for undergraduate dissertation.

Sir,

With due respect I state that I am a 4th year student of B. Sc. in Speech and Language Therapy of BHPI, the academic institute of CRP. In 4th year, I have to submit a research project to the University of Dhaka in partial fulfillment of the requirements for the degree of B. Sc. in Speech and Language Therapy. The title of my project is **“Quality of Life in Patients Treated with Head and Neck Cancer”**. The main objective of this study is to identify the quality of life in patients treated with head and neck cancer. I would like to collect data for my study from National Institute of Cancer Research and Hospital.

Now I am seeking your kindness to approve me to start data collection for research project and would like to guarantee that anything of my research project will not harmful for the participants and confidentiality will maintain for each participant.

So, I therefore pray and hope that your honor would be kind enough to grant me the permission of collecting data for my research project and will help me to conduct a successful study as a part of my course.

Yours obediently,

*Zahid*

Md. Zahidul Islam

4th year student of B. Sc. in Speech and Language Therapy

Bangladesh Health Professions Institute (BHPI)

CRP-Chapain, Savar, Dhaka- 1343

<b>Approved by</b>	<b>Comments and Signature</b>
<u>Head (Acting)</u> Md. Jahangir Alam Department of Speech & Language Therapy Bangladesh Health Professions Institute (BHPI). CRP-Chapain, Savar, Dhaka- 1343	<i>you can proceed for the data collection.</i> <i>Jahangir</i>



## Annexure: 7 Permission Letter from NICRH



### বাংলাদেশ হেল্থ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই) BANGLADESH HEALTH PROFESSIONS INSTITUTE (BHPI) (The Academic Institute of CRP)

CRP-Chapain, Savar, Dhaka, Tel: 7745464-5, 7741404, Fax: 7745069  
BHPI-Mirpur Campus, Plot-A/5, Block-A, Section-14, Mirpur, Dhaka-1206. Tel: 8020178,8053662-3, Fax: 8053661

তারিখ : ২৭.১০.২০১৪

*Acad. Secretary*  
*09/11/14*



প্রতি

পরিচালক

ন্যাশনাল ইনস্টিটিউট অব ক্যান্সার রিসার্চ এন্ড হাসপাতাল

মহাখালী, ঢাকা।

বিষয় : রিসার্চ প্রজেক্ট (dissertation) এর জন্য আপনার প্রতিষ্ঠান সফর প্রসঙ্গে।

জনাব,

আপনার সদয় অবগতির জন্য জানাচ্ছি যে, পক্ষাঘাতগ্রস্তদের পুনর্বাসন কেন্দ্রে-সিআরপি'র শিক্ষা প্রতিষ্ঠান বাংলাদেশ হেল্থ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই) ঢাকা বিশ্ববিদ্যালয় অনুমোদিত বিএসসি ইন স্পীচ এন্ড ল্যান্ডস্কেপ থেরাপি কোর্স পরিচালনা করে আসছে।

উক্ত কোর্সের ছাত্রছাত্রীদের কোর্স কারিকুলামের অংশ হিসাবে বিভিন্ন বিষয়ের উপর রিসার্চ ও কোর্সওয়ার্ক করা বাধ্যতামূলক।

বিএইচপিআই'র ৪র্থ বর্ষ বিএসসি ইন স্পীচ এন্ড ল্যান্ডস্কেপ থেরাপি কোর্সের ছাত্র মোঃ জাহিদুল ইসলাম তার রিসার্চ সংক্রান্ত কাজের জন্য আগামী ৩০.১০.২০১৪ তারিখ থেকে ২৫.১১.২০১৪ তারিখ পর্যন্ত সময়ে আপনার প্রতিষ্ঠানে সফর করতে আগ্রহী।

তাই তাকে আপনার প্রতিষ্ঠান সফরে সার্বিক সহযোগিতা প্রদানের জন্য অনুরোধ করছি।

ধন্যবাদান্তে

*[Handwritten Signature]*

অধ্যাপক ডাঃ এম এ কাদের

অধ্যক্ষ

বিএইচপিআই।

