Body Mass Index Status of Occupational Therapy Students of Bangladesh Health Professions Institute: A Cross-sectional Study

By

Fatema Akter Asha

February 2022, held in March 2023

This thesis is submitted in total fulfillment of the requirement for the subject Research 2& 3 and partial fulfillment of the requirements for the degree of

Bachelor of Science in Occupational Therapy

Bangladesh Health Professions Institute (BHPI)

Faculty of Medicine

University of Dhaka

Thesis completed by:

Fatema Akter Asha

4th year, B.Sc. in Occupational Therapy

Bangladesh Health Professions Institute (BHPI)

Centre for the Rehabilitation of the Paralysed (CRP)   Signature

Chapain, Savar, Dhaka-1343

Supervisor's name, designation and signature:

Nayan Kumer Chanda

Assistant Professor

Occupational Therapy Department

Bangladesh Health Professions Institute (BHPI)

Centre for the Rehabilitation of the Paralysed (CRP)   Signature

CRP, Savar, Dhaka- 1343

Head of the department's name, designation and signature:

Sk. Moniruzzaman

Associate Professor & Head

Occupational Therapy Department

Bangladesh Health Professions Institute (BHPI)

Centre for the Rehabilitation of the Paralysed (CRP)   Signature

CRP, Savar, Dhaka- 1343

Board of Examiners

Sk. Moniruzzaman
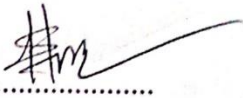
Associate Professor and Head

Department of Occupational Therapy

Bangladesh Health Professions Institute (BHPI)

CRP, Savar, Dhaka-1343

....

Signature

Dr. Md. Shakhaoat Hossain

Associate Professor

Department of Public Health and Informatics

Jahangirnagar University

Savar, Dhaka -1342

....

Signature

Statement of Authorship

I hereby declare that I am the sole author of this bachelor thesis and that I have not used any source other than those listed in the bibliography and identified as references. Furthermore, I declare that I have acknowledged the work of others by providing detailed references of said work.

I have not submitted this thesis at any other institution in order to obtain a degree. Ethical issue of the study gas been strictly considered and protected. In case of disseminator of the findings of this project for future publication, the research supervisor will be highly concerned, and it will be duty acknowledged as an undergraduate thesis.

Fatema Akter Asha

4th year, B.Sc. in Occupational Therapy

Bangladesh Health Professions Institute (BHPI)   ——————————

Centre for the Rehabilitation of the Paralysed (CRP)   Signature

Chapain, Savar, Dhaka-1343

Acknowledgement

I would like to gratitude to the Almighty Allah who has helped me to move forward in my life. I would like to give thanks to my parents, uncle, and grandfather for their support. I am indebted to a large number of people who have provided me with their valuable support for accomplishing this undertaking. Their prayer for me was what sustained me this far. I would acknowledged and give my warmest thanks to my supervisor Nayan kumer Chanda. His guidance and advice carried me through all the stage of writing my project. I am thankful to Julker Nayan sir for helping me to select the research title. I am also grateful to Arifa Jahan Ema and Shamima Akter madam who guided me to conduct a research. I would like to thank to my classmate and junior who helped me in data collection.

Dedication

Dedicated to my beloved parents and grandfather.

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List of Abbreviations

BHPI= Bangladesh Health Professions Institute.

BMI= Body mass index.

OT= Occupational Therapy.

PT= Physiotherapy.

SLT= Speech and Language Therapy.

SPSS= Statistical Package of Social Science.

WHO= World Health Organization.

Abstract

Background: Health is the root of all happiness. Body mass index is one of the most important indicators of health status. It is the most widely used method to evaluate the nutritional status of population in clinical practices; it might have some fragility to accurately determine the nutritional status and body fat in elderly subjects. Body mass index has showed strongest correlation with continuous hypertension in both genders. Obesity and its associated morbidities are leading causes of cardiovascular disease, type 2 diabetes, hypertension, osteoarthritis, anesthesia risk, menstrual abnormalities as well as some type of cancers including those of colon and breast. Body mass index describes relative weight for height, is not gender specific. Furthermore, Body mass index appears to be as strongly correlated with various metabolic and disease outcome as are these more direct measure of body fatness. Occupational Therapy students of BHPI needed to conscious about their health issues.

Aim: The aim of the study to explore the body mass index status of Occupational Therapy students in Bangladesh Health Professions Institute.

Methods: A quantitative cross sectional study was conducted among 200 participants (78 male and 122 female students) in Bangladesh Health Professions Institute . In this study body weight and height were measured and body mass index values were calculated. A self-structured questionnaire was used to collect data and data was entered and analyzed using by statistical package of social science version 26.0.

Result: Total 200 students of Bangladesh Health Professions Institute were participated this study and the age range were 18-26 years.

Female students were 61% and male students were 39%. It showed that 12.5% students were underweight, 60.5% normal, 21.5% overweight and 5.5% were obesity. After classified male and female, the male frequency was 11.5% underweight, 60.2% normal, 21.8% overweight, 6.5% obesity. The female frequency was 13.1%, 60.7%, 21.3% and 4.9% respectively.

Conclusion: Overweight is a rising problem of male and female students. Both underweight and obesity issues are more common in female students. It was considered a serious health problem among students which need to be addressed.

Key words: Body mass index, Occupational Therapy students, Bangladesh Health Professions Institute.

CHAPTER I: INTRODUCTION

1.1 Background

Body fat is an essential element of the body. Fats are nutrients in food that the body uses to build cell membrane, nerve tissue and hormones. It provides an essential energy source, acts as a heat insulator and shock absorber, is the source of estradiol in females and produces numerous hormones. Too much or too slight fat in the body poses problems. Obesity has been found to thoroughly associate with the level of body fat. Obesity is evolving as a major public health problem worldwide.

Body mass index (BMI), otherwise known as Quetelet Index from the Belgian founder Adolphe Quetelet (in the 19th century) used to determine the body mass index by the body mass quotient expressed in kilogram (kg) by the square of body height expressed in square meters (m^2). (Zygmunt et al., 2019). Others methods used are waist circumference, CT, MRI absorptiometry and life insurance tables. Obesity is a condition in which the natural energy reserve, stored in the fatty tissue of humans and others mammals, exceeds healthy limits. It is commonly defined as a body mass index of 30kg/m^2. The frequency of obesity in the Eastern Mediterranean County was 3.3%. Changes in life style, dietary habits, physical activity, and the social cultural environment play an important role in obesity. (Abdullah & Mohamed, 2008)

BMI describes relative weight for height, is not gender specific and it doesn't measure body fat directly, but BMI is moderately correlated with more direct measure of body fat. Furthermore, BMI appears to be as strongly correlated with various metabolic and disease outcome as are these more direct measure of body fatness.

It is also the most widely accepted means of assessing obesity measure by dividing weight by $height^2$.

Although BMI is the most widely used method to evaluate the nutritional status of population in clinical practices, it might have some fragility to accurately determine the nutritional status and body fat in elderly subjects. In contrast, DEXA (dual energy X-ray absorptiometry) allows direct noninvasive measurement of the three major components of BC (Body Composition): fat-free mass (FFM), percentage body fat (PBF), and bone mass. Thus, it has been frequently used in scientific studies. (Funghetto et al., 2015).

"Health is a state of complete physical, mental and social well-being and not merely an absence of disease or infirmity". (WHO, 2015). Among the many indices used to assess obesity, BMI has showed strongest correlation with continuous hypertension in both genders. Obesity and its associated morbidities are leading causes of cardiovascular disease, type 2 diabetes, hypertension, osteoarthritis, anesthesia risk, menstrual abnormalities as well as some type of cancers including those of colon and breast. Alteration in women's biophysical profile over the years, particularly during the menopausal and postmenopausal periods, may result in weight gain and increase body fat as well as in changes in the fat composition and distribution. (Funghetto et, al, 2015). Stress embraces the response to a multitude of poorly defined factors that interrupt homeostasis or allostasis. There is considerable evidence from clinical to cellular and molecular studies that elevated cortisol, particularly when combined with secondary inhibition of sex steroids and growth hormone secretion, it causing accumulation of fat in visceral adipose tissues as well as metabolic abnormalities. (Abdullah & Mohamed, 2008).

According to world health organization (WHO) BMI cut-offs for the international classification of body weight, a BMI<18.5 kg/m^2 is categorized as underweight. 18.5-24.9 kg/m^2 as normal, and ≥ 25.0 kg/m^2 overweight, ≥30 is classified obese. Obese has three classes.

Class 1 is 30.0-34.9 kg/m^2 , class 2 is 35.0- 39.9 kg/m^2, class 3 is ≥ 40 kg/m^2 (Afzal et al., 2015). Among the teenage population of Pakistan, underweight is more frequent than obesity, whereas the reverse is true for adults. The data regarding the BMI status of adolescence population of Bangladesh is rare. A study with sample size has reported the frequency of overweight at 12.6% and there is need to determine the BMI of this group of population with a large number subject for accuracy. The aim of the study will design to calculate the BMI status of the Occupational Therapy students of Bangladesh Health Professions Institute, Savar, Dhaka.

1.2 Justification of the Study

Body mass index or BMI is a common and convenient to measure a person's weight. This is the first study to investigate the health status of BHPI Occupational therapy students. There is no study in BHPI about this. In 2016, more than 1.9 billion adults, 18 years and older, were overweight, of this over 650 million were obese. Most of the world populations live in countries where overweight and obesity kills more people than underweight. However, it's not always the maximum accurate interpretation of someone overall health. In general, the higher BMI the higher the risk of developing a range of conditions. The World Health Organization (WHO) lists a high BMI as a major risk factor for linked for heart disease, diabetes, arthritis, liver disease, several types of cancer (breast, colon, prostate), hypertension, high cholesterol, sleep apnea.

Large scale survey, such as SHIELD (study to help improve early evaluation and management of risk factors leading to diabetes), conducted in the USA in 2004, show clear associations between a raised BMI and increased risks of hypertension (high blood pressure) and dyslipidemia (high cholesterol) in addition to type 2 diabetes. As a researcher, I can learn through this research how to conduct a study and my classmate and junior students of my education organization can be aware of their overall health.

Students of Occupational Therapy department can be aware of their health and those who are at risk can take necessary steps. Students of an educational institution are lifeblood. So, student's research plays an important role in an organization. Institutions can contribution to create awareness among students. This study will create knowledge and aware of the health.

1.3 Operational Definition

1.3.1 Body mass index- BMI

BMI, formally called the Quetelet index, is a measure for indicating nutritional status in adults. It is define as a person's weight in kilograms divided by the square of the person's height in meters (kg/m^2).

1.3.2 Health

Health is a state of complete physical, mental and social well-being and not merely an absence of disease or infirmity.

1.3.3 Occupational Therapy

Occupational Therapy as a "client-centered health profession concerned with promoting health and well-being through occupation. The primary goal of Occupational Therapy is to enable people to participate in the activities of everyday life. Occupational therapists achieve this outcome by working with people and communities to enhance their ability to engage in the occupations they want to, need to, or are expected to do, or by modifying the occupation or the environment to better support their occupational engagement".

1.4 Study Question, Aim, Objective

1.4.1 Study question

What is the status of body mass index of Occupational Therapy students in Bangladesh Health Professions Institute?

1.4.2 Aim

The aim of the study to explore the BMI status of Occupational Therapy students in Bangladesh Health Professions Institute. (The academic institute of Centre for the Rehabilitation of the Paralysed) Savar, Dhaka.

1.4.3 Objectives

- To determine the body mass index status of OT students of BHPI.
- To calculate frequency of different body mass index categories.
- To know the cause of higher BMI rate.

CHAPTER II: LITERATURE REVIEW

This chapter is organized with the information of body mass index status of the students. Then the information was recorded by reviewing various literatures. Information related to BMI such as underweight, overweight, obesity was included in literature review.

2.1 Body Mass Index

A cross sectional study was conducted among university students in china. The overall prevalence of underweight, overweight and obesity frequency given here. The male students percentage were underweight 14.2%, overweight 14.7% and obese 4.2% and female student's frequency was underweight 27.5%, overweight 4.4% and obesity 0.6%. The finding was in this study was prevalence of underweight was higher among female students. It was critical health issues could affect in health. Not only female students male students were the risk in overweight and underweight. It could be better to find out the trend to become underweight. (Ren et al., 2015)

Sir Salimullah Medical College, Department of physiology conducted a cross sectional descriptive study. Total 264 students participated and the age range was 19-21 years. The finding was the study of mean BMI of male students was 21.64 and female students was 23.52. The frequency of overweight was 20.5% and obesity was 4.5%. Among these students 63.6% of students were within normal weight range and 11.3% were underweight. The male students frequency is 9.35% were underweight, 76.97% were normal weight, 10.07% were overweight, 3.59% were obese and among female students it was 13.6% underweight, 48.8% normal weight, 32% overweight, 4.54% obesity.

The main finding of the study was that overweight was a rising problem for both male and female students. Factors could be identified in this study. (Akhter et al., 2010).

Dietary habits of medical College students in this study were found to be unhealthy and there was a significant Association with BMI. The prevalence of overweight was 8% and obesity was 1.5%. This study assessed the dietary habits of Medical students and its associated with BMI. (Kumar et al., 2014)

To determine the prevalence associated factors of underweight, overweight, and obesity among Bangladeshi adults. They found that the overall prevalence of overweight was 17.1%, overweight was 29.4% and obesity was 10.8%. Compared to 18-49 years of age, respectively. Males had also lower odds of being overweight or obese than females. The overweight and obesity rate was decreased by improving education level and wealth quintile. Work status or living place did not have any significant association. Multi-sectorial intervention should be launched by targeting the at-risk population for the underweight, overweight, obesity prevention programmed irrespective of work status or place of residence. (Gupta & Kibria, 2021).

2.2 Underweight

The prevalence of thickness of the study (underweight 51.7%, normal weight 88.8%). Whereas ideal weight and body mass index were lower in the students with a desire for thickness than the students without a desire for thickness, also lower in the underweight students than the normal weight students. As a result of a logistic regression analysis, underweight, desire for thickness and experience with weight control were positively associated with eating problems.

Further, the association of eating problems increased along with the increase in the number of factors (underweight, desire for thickness and experience with weight control). These results focus on the fact that underweight females have a strong association with eating problems. (Mase et al., 2013).

Using a cross sectional survey, assessed anthropometric measurement and a self-administered questionnaire among university students. The result found that the median BMI was 20.2, which was higher in men than in women. Overall 21.5% were underweight and 20.8% were overweight and 13% obesity. Men were overweight and obese more than women. Whereas women were more underweight. Multinomial logistic regression analysis revealed that among men, older age, trying to eat fiber and trying to lose weight were associated with being overweight or obese and among women trying to lose weight, depression symptoms and normal sleep duration were associated with being overweight or obese. The risk of being overweight was greater among men. (Pengpid & Peltzer, 2014).

The proportion of 17.5% women, aged 18-34 years, was underweight, 18.4% were overweight and 7% were obese. The prevalence of underweight was 5.8% women. Women who were underweight had significantly higher odds ratios for overtime work, being students, low emotional support, and poor self-reported global as well as poor psychological health than normal weight women.

Women who were overweight or obese were unemployed, had low education, low social participation, low emotional and instrumental support, were daily smokers, had a sedentary lifestyle, had poor self-reported global health and lack of internal locus of control compared with normal weight women.

These differing patterns suggest both different etiology and different preventive strategies to deal with the health risks of people who are underweight as opposed to those who are overweight /obese. (Ali & Lindstrom., 2005).

The present paper reports the prevalence of underweight, overweight and obesity by gender, ethnicity and grade, among participants in a 2002 National survey among South Africa. Higher rates of underweight were observed for male than females as well as for black and coloured than white students. Within each gender group black and coloured students had significantly higher rates of underweight than their white counterparts.

Higher percentages of females than male were overweight and obese, overall and among black students. Furthermore, white male students had significantly higher rates of overweight than their black and coloured counterparts. Among females black and white students had significantly higher rates than coloured students. Students in higher grades showed significantly lower rates of underweight and higher rates of overweight. (Reddy et al,. 2008).

2.3 Overweight

A longitudinal study was conducted in Korea. They found that the relationship depression and obesity status was examined in both the full sample and in sub samples stratified by gender. They observed that the U shaped association between obesity status and CES-D score was tested by regressing CES-D score on linear quadratic terms of BMI scores. The distribution of scores by respondents' obesity status showed an association. The highest scores were found in underweight individuals; this was followed by severely obese.

The lowest were found in the overweight group when considering the entire population and males alone in the normal weight group for females. The highest level of depressive symptoms was found in females. (Noh et al., 2015).

Researchers have shown variable prevalence of overweight and obesity among medical students. A cross sectional study was conducted in Kolkata among 278 medical students at structured questionnaire. The result found that 9% were obesity and 19% were overweight. Some factors were found for being a fatty person.

Such as family history, large amount of soft drinks intake, fast food consumption, fruit taken frequently, alcohol consumption, longer time spent by watching TV and physical inactivity. (Basu et al., 2015).

2.4 Obesity

The author investigate that The Massachusetts Department of Public Health began mandated screening of BMI among students enrolled in public schools in 2011. 111799 students of 80 schools were sample size. Race/ethnicity and low economic status were obtained on a community level for these same 68 districts. The percentage of obese among Massachusetts children across 68 school district is 42.8%. A lower household resource appears to have a much greater impact on childhood obesity rates in the cohort of students than race and ethnicity. (Rogers et al., 2015)

Students living in city, students with family history of obesity, irregular breakfast, less exercise and internet addiction and students often having snacks had a higher detection rate of obesity (P<0.05), while grade and owning of family personal computer no obvious statistical relation with the detection rate of overweight and obesity (P>0.05). This subject was randomly selected for the study.

The total detection of obesity was 23.57%. The internet addiction rate of boys was 23.96%, higher that of girls (18.03%). (Li et al., 2014)

Test for difference by demographic subgroup in the prevalence of overweight, perceived overweight among all students, perceived overweight among no overweight students, and perceived overweight among overweight students included respondent from all survey years combined. Its determined pairwise differences in prevalence estimated by sex, race/ethnicity and sex and race using t test. Its determined trend in the prevalence of overweight and perceived overweight for all high school students and among demographic subgroups of students. The prevalence of overweight as higher among males than female. Across all survey years, 26.7% of all students were overweight and 29.9% of students perceived themselves as overweight. All pairwise subgroup difference tested in the prevalence of overweight was statically significant. (Foti et al., 2010)

Abdalla and Mohamed (2008) describe that, many chronic disease are associated with obesity, around 30% of individual who are overweight have at least mildly elevated blood pressure as long as increased incidence of strokes and heart attacks with obesity.

This study was conducted in the National Ribat University, faculty of medicine, Dentistry, Pharmacy, Radiology and Laboratory were considered in this study. Sample size was calculated to be 500. The results showed that 17.8% and 9.2% of students were overweight and obese respectively.

Siddiqui et al., (2014) showed that majority of underweight students were female, this could be due to the current trend for slimness rather than malnutrition.

Keeping in view those about 80% of medical students belong to female gender this is a significant finding and needs better education and awareness. This was a cross-sectional questionnaire based study and was conducted from 1st Jan till April 30th 2011, medical students of Rajshahi Islami Bank Medical college, Rajshahi, Bangladesh. The overweight and obesity were more prevalent among the male students in the study and similar findings were also observed in Greek adolescents.

The present study 28.9% was underweight and 9.4% were overweight. Similar finding have been reported in different studies (6-15% being underweight). However, study done at Dow medical university among students of Dow medical college to calculate frequency of different BMI categories, showed that the overall prevalence of underweight students was 29.9% that was especially in girls. Being underweight should be considered a serious health problem among adolescent students as it has many important implications and could lead to psychological and physical disorders including infertility, and need to be addressed timely. (Afzal et al., 2015)

The implication of school based BMI measurement for surveillance purpose, that is, to identify the percentage of students in a population who are at risk for weight related problem, is widely accepted; however, considerable controversy exists over BMI measurement for screening purpose, that is, to assess the weight status for individual students and provide this information to parents with guidance for action. Although some promising results have been reported, more evaluation is needed to determine whether BMI screening programs are a promising practice for addressing obesity. Based on the available information, BMI screening meets some but not of the criteria established by the American Academy of Pediatrics for determining whether screening for specific health conditions should be implemented in schools. (Nihiser et al., 2007)

The data regarding the BMI status of adolescent's population of Pakistan is scancy, a study with small sample size has reported the frequency of overweight at 12.6% and there is a need to determine the BMI of this group of population with a large number subject for accuracy. This study highlights the fact that obesity is not a major problem among the medical college students the underweight is coming up as a significant problem particularly among the female medical students. Keeping in view that now about 80% of medical students belongs to female gender this is a significant finding and needs better education and awareness. (Minhas et al., 2010)

2.5 Occupational Therapy

Occupational Therapy can be analyzed by meaning of the words that comprise the professional title. As the term is used in the professional title, to occupy means to employ, busy, engage (a person, or the mind, attention etc) and to take up, use up, or fill space or time. Occupational means being occupied or employed with, or engaged in something. Therapy means treatment of disease or disorder. Occupational therapy includes the study of human occupation in relation to personal health, life satisfaction, and sense of well-being and the management of the adaptive behavior or competent performance required to perform these occupations.

The study of occupations entails analysis of the kinds of occupations, requirements for their performance, and the meaning or significance of each. Management involves conceptual and practice model, which explain the process of providing occupational therapy service to clients such as evaluation and assessment, occupational therapy diagnosis, planning, intervention and reevaluation. Thus, the study and management of the purposeful occupation in which human engaged in the unique feature of occupational therapy that separates its knowledge base from all other professions.

Usually, the purposes of occupational therapy are to do the following: enable each person to achieve optimum function and adaptation in performance of occupation, prevent occupational dysfunction whenever possible, and promote the maintenance of occupational performance. The purposes are applicable to all people in society, but those persons most likely to need occupational therapy service can be grouped into the following: those with physical illness or injury, those with an emotional disorder, those with congenital or developmental disability and the elderly. Service to people with occupational impairment may be offered through medical, health, educational, and social systems. In other words, occupational therapists may be employed and provide occupational therapy in any of the aforementioned systems.

Specific occupational therapy service may include the use of one or more of the following media, methods, and techniques: analysis and training of daily living skills, habits, and routine for the development, restoration or maintenance of adaptive or competent performance, design, fabrication, and application orthotic and prosthetic devices to assists or substitute for lack of performance, analysis, selection, and use of rehabilitation and assistive technology or device to enhance or enable performance, selected application of modified or adapted techniques to develop or redevelop specific performance, use therapeutically analyses media such as crafts, games or toy to promote purposeful actions that can be organized into improved the health, well-being, and functional performance of all people. (Kathlyn & Sanderson, 1990).

Occupational science is conceived as a basic science. As such it deals with universal issues about occupation without concern for their immediate application in occupational therapy. This approach frees scientists to pursue questions and engage in scholarly work without the prior constraint of practical application.

It can also be a rich source of ideas. Basic science has been shown to be more productive of major advances in medical practice than applied science. Since occupational science deals with universals, it must necessarily be abstract at the conceptual level. The relationship of a basic science to an applied discipline is typical of many fields, for example, that of psychology to Psychotherapy or anatomy and physiology to medicine. Although occupational therapy is an applied discipline it has not yet reached consensus about its scientific foundation, nor has it found a coherent synthesis of knowledge to support practice. Thus it has been an applied discipline in search of a science to apply. Occupational therapists at the grass root level have had to try to help patients deal with devastating and complex problems which impact every aspect of occupation throughout the lifespan (for example cerebral palsy, schizophrenia, spinal cord injury). They have had to try to reduce incapacity with insufficient knowledge of capacity, how humans develop and sustain Independence, adapt to environmental challenges and learn competency. The idea of basic science of occupation is relatively new in its present form. It owes a great deal for its birth and nurturance to the tradition of occupational therapy articulated by Adolph Meyer (1922) and Eleanor Clark Slagle (1922). It also has its roots deeply embedded in the conceptualization of the occupational behavioral frame of reference by Mary Reilly (1962; 1966; 1996) graduate students, and the sensory integration theory developed by A. Jean Ayres (1972; 1979), both at the University of Southern California (USC).

From this nourishing soil the science of occupation was developed by the faculty and graduate students at USC. It grew out of recognition of the significance of occupation to all human beings and the need for a basic science to support occupational therapy practice.

Occupational Science is, of course, interdisciplinary. It is a synthesis of idea from other disciplines which have something to say about occupation, share a humanistic view of the human and preserve the "aliveness" of the living human system (Beteson, 1979). New science is often developed by building on previous work in other science and integrating it in fresh ways to address new questions. No science existing today can, of itself, explain occupation. (Yerxa, 1990).

The concept of occupation and much of the corpus of knowledge that will be generated in occupational science is relevant to all areas of human enterprise; it has special importance to the lives of parents and children. Occupations shape the quality of one's life. They are the contexts in which aspirations are nurtured, the media that enable the acquisition of habits and fine tuning of skills, and the arena in which such personality characteristics as resilience, perseverance, diligence, and initiative are fostered (Bruner, 1976). In short occupations mediate adaptation. Occupations engaged in during infancy and childhood provides the supportive structures on which tomorrow's life experiences will be built. In the developmental continuum of occupations, each period must provide the solid base of a rich repertoire of experience to best support later abilities. Preschool occupations, for instance, are seen as providing the foundations for school success and for the social skills needed in middle childhood. In turn, the occupations of middle childhood develop many of the skills that will be needed in adolescence. Children with chronic disabilities and disease stand to benefit from occupational therapy grounded in occupational science. These children may not develop to their potential because they participate in too few productive activities, are stressed by time devoted to poorly chosen occupations, or exist in a vacuum with respect to productive activity.

Blom, Ek and Kulkarni (1984) reported that children with chronic disabilities spend more time watching TV than their able-bodied peers. Occupational science is exploring the role of childhood occupations in fostering adult competence.

Example of research are a grounded theory on early object rule acquisition in the play of toddlers the development of instruments to provide information on the play of children with and without disabilities, describe and comparative studies of activities in which children with and without various disabilities engage, and longitudinal studies to examine the effects of childhood occupations upon adolescent and adults occupational role function. (Primeau & Clark, 1990).

2.6 Bangladesh Health Professions Institute

The Bangladesh Health Professions Institute (BHPI) was established in 1992 with the aim of developing highly skilled multidisciplinary health care professionals. BHPI is the academic institute of the Centre for the Rehabilitation of the Paralysed (CRP). CRP was established in 1979 by Dr. Valerie A. Taylor, a British physiotherapist.

CRP's vision is to confirm the inclusion of girls and boys, women and men with disabilities into mainstream society. CRP provides medical treatment, rehabilitation and support services focusing on physical, emotional, social, psychological and economic aspects. It indorses the development of skilled personnel in health care and rehabilitation in the country. In order to expand the rehabilitation service throughout the country, CRP felt the need to produce skilled health professionals and hence, BHPI was established.

The institute currently offers different level of courses for national and international students. These are Master's Program, Bachelor, diploma and some specific need-based certificate courses. Here the students have excellent academic and co-curricular facilities at a highly secured campus and have access to many international visiting teachers and students for educational purposes which is very useful for further career development.

In 1971, when the magnificent war of liberation came to an end, there was a need to establish a centre for treatment and rehabilitation of wounded freedom fighters, as well as war-affected civilians. At that serious time in 1972 Professor R. J. Garst, an American Orthopedics Surgeon and specialist in the field of rehabilitation, arrived in Bangladesh to assist the Bangladesh Government to find a solution. In comeback to these needs in 1973, Prof. R. J. Garst started the first School for Occupational Therapy at the Rehabilitation Institute and Hospital for the Disabled (RIHD), later renamed National Institute of Traumatology and Orthopedic Rehabilitation (NITOR). In the first Batch of Occupational Therapy, three students completed their Bachelor degree in Occupational Therapy in 1976.

Unfortunately the course was discontinued. Out of these three graduates, two left Bangladesh after one year, and only Mrs. Josene Ara Begum assisted the country as an Occupational Therapist until her death in 2000.

In 1995, Centre for the Rehabilitation of the Paralysed (CRP), a non-government organization, restarted Occupational Therapy Diploma course in Bangladesh. Following this, the course was upgraded in 1999 to a B. Sc (Honors) degree course at Bangladesh Health Professions Institute (BHPI), the academic institute of CRP under the Medicine Faculty of the University of Dhaka.

The first batch of B. Sc (Honors) in Occupational Therapy students completed their graduation in 2003. The Occupational Therapy course has since been continued and the course was accredited by the World Federation of Occupational Therapists (WFOT) in 2000.

Up to 2019, 294 Occupational Therapists have graduated from the course, and all of them are currently working in various reputable national and international organisations and hospitals, both home and abroad. All the students of that program are taught by both local and foreign teachers from many specialties and backgrounds. There are 12 permanent Occupational Therapy faculties who are skilled in this aspect and provide teaching for the students.

Among them, two are Associate Professors, Two are Assistant Professor and eight are Lecturers and other specialist medical science teachers for medical science subjects. The Bangladesh Health Professions Institute (BHPI), 2017).

CHAPTER III: METHODS

3.1 Study Design

3.1.1 Quantitative research design

The research conducted cross sectional study design and it is quantitative research. Qualitative research is the process of collecting and analyzing numerical data (Bhandari, 2020). A descriptive cross sectional study is a sort of research design in which researchers gather information from a large number of people at one time. A cross sectional study is a type of observational study that analyzes data of variables collected at one given point in time across a sample population. In a cross sectional study the investigator measure the outcome and the exposure in the study participation at the same time (Dermatol, 2016).

3.1.2 Cross-sectional Survey study

A cross sectional survey involves collecting data from a group of participants at a particular time. The cross sectional method is frequently employed in investigations where time is a consideration, such as in studies of social trends or health trends. The researcher was choosing this study because the researcher was select a population from specific period that was measured the heath status.

3.2 Study setting

Bangladesh Health Professions Institute. (The academic institute of Centre for the Rehabilitation of the Paralysed) Savar, Dhaka.

3.3 Study Period

The study time was between April 2022 to February 2023.

3.4 Study Participants

3.4.1 Study Population

The population of the study was who are studying in B.Sc. in Occupational Therapy department in Bangladesh Health Professions Institute. 1ˢᵗ year to 4ᵗʰ year students were participant in the study.

3.4.2 Sampling Technique

Purposive sampling was selected for the study because it is a non-probability sampling method and it occurs when elements selected for the sample are chosen by the judgment of the researcher. It is one of the best cost effective and time effective sampling procedures. In this sampling researcher rely on their own judgment when choosing members of the population to participate in the survey.

3.4.3 Sample Size

$$n = \frac{Z^2 \times pq}{d^2}$$

Here,

n= sample size

z= the standard normal deviated usually set as 1.96 which correspondent to 95%

p= anticipated prevalence, 50%= 0.5

q=1-p= 0.5

d= 0.05 degree of accuracy required

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

$$= 384$$

As this is an institutional student research and there are certain numbers of students in a department, accordingly the number of participants in my research stands at **200.**

3.4.4 Inclusion criteria

- Bachelor of Science in Occupational Therapy students.

- Both male and female students.

3.4.5 Exclusion criteria

- Diploma and assistance Occupational Therapy, Physiotherapy, speech and language therapy, prosthetics and orthotics, nursing department students.

- Severe illness students.

- Pregnant students.

3.4.6 Participant Recruitment Process

The researcher applied to the Occupational Therapy Head of Department for permission to collect data from the students. After getting the permission, the researcher checks the class routine of all years then selects the blank time and contacted the class monitor and collected data from the students. Followed the inclusion and exclusion criteria potential participant were attended.

3.5 Ethical consideration

3.5.1 Consent Form

The Institutional Review Board has given the ethical clearance explaining the purpose of the research, through the Department of Occupational Therapy, Bangladesh Health Professions Institute. IRB form number: CRP/BHPI/IRB/09/22/651. Permission of Occupational Therapy Department has been taken for data collection from students and also permission to use weight and height scale for data collection from department of Rehabilitation Science.

3.5.2 Informed Consent

The student researcher described the purpose of the research to the participants by the participant explanatory sheet. Those who were given consent to participants, their data was collected. Written consent was taken from the participants as they had been face to face survey.

3.5.3 Right of Refusal to Participate or withdraw

In this study, participants were free to choice, whether to participate or not. They were also free to withdraw participation from the study within 10 days from the time of survey.

3.5.4 Confidentiality

All participants' information will be kept confidential. Participant' name and all survey responses will be protected responsibly. Only the student researcher and supervisor will know them for the sake of the research. The participants were informed that their identity will remain confidential for future uses, such as report writing, publication, conference, or any other written materials and verbal discussion.

3.5.5 Unequal Relationship

The student researcher had unequal or power relationship with the participant. But the researcher maintained the research roles to accomplish the study. The power relationship could not affect the result because the researcher itself did not collect data. She had collected data through third person or volunteer.

3.5.6 Risk and Beneficence

The participants did not have any risk and they did not get any beneficence from this research.

3.6 Data Collection

3.6.1 Data Collection Method

Researcher collected data by face to face survey by third person. It is a survey method that involves the collector directly communicating with respondents face to face. In a face to face survey, interviewer would physically present to ask the survey questions and to assist the respondent in answering. As there was power relationship between student researcher and participant so it could be maintained ethics for data collection.

3.6.2 Data collection instrument

A self-structured questionnaire and BMI rating scale according to WHO criteria are used in the research. In this question there had seven domain and some socio demographic characteristics. Seven question were related one person's lifestyle which were associated to BMI. These could be found the possible cause of health risk.

First question is genetic. Genetic factor associated with overweight and obesity. Then the next question is food and fast food.

More intakes of food and fast food associated with higher body mass index, less successful weight loss maintenance and weight gain. Fast food decreases the quality of diet and delivers unhealthy choices especially among children and teenagers raising their risk of obesity. It is well known that eating out may lead to excess calorie intake and increases the risk of obesity because of large portion sizes and increased energy density of food.

Physical activity is an essential element in daily life that leads to long term health benefit. Physical activity refers to movement of body that requires energy. In a study, 50% of the respondents are categorized as minimally active.

In addition, there is significant difference between the physical activity level of male and female participants. The association between physical activity and BMI indicates a very weak negative connection. Similarly, the correlation between physical activity and fat mass in a weak negative relationship. Meanwhile, there is a weak positive correlation between physical activity and muscle mass. (Fitri, 2020).

BMI associated in disease a research showed that 30% of individuals in the most insulin sensitive were either overweight (25%), or obese (5%). Of those in the most insulin resistant 36% were obese, with the remainder being either overweight 43% or normal weight 16%. (McLaughlin et al., 2004). A graded increase in the prevalence ratio was observed with increase severity of overweight and obesity for all of the health outcome expect for coronary heart disease in men and high blood cholesterol level in both male and female. (Must et al., 1994).

3.7 Data Management and Analysis

The document was presented in Microsoft office word and the Microsoft office excels was used to make bar chart and pie chart. Researcher input data in the SPSS. Descriptive statistics was used to analyze the data by using the statistical package for social science version 26.

3.8 Quality Control and Quality Assurance

Student researcher managed and assured the proper quality of data. Researcher recorded data in a file. Data were input in SPSS. Missing data were check properly. Researcher input all data properly in the SPSS version 26. The supervisor of the researcher also checked the data.

CHAPTER IV: RESULTS

This chapter covers findings of the study. It contains the study findings in table and figures focusing the socio-demographic information.

Socio-Demographic Characteristic

Table 4.1

Variable	Category	Frequency(N= 200)	Percentage
Gender	Male	78	39%
	Female	122	61%
Age	18-20	55	27.5%
	21-26	145	72.5%
Session	2021-22	45	22.5%
	2020-21	49	24.5%
	2019-20	40	20%
	2018-19	30	15%
	2017-18	36	18%

It indicates the overview of socio demographic information of students of Bangladesh Health Professions Institute. Here include the information of participant's gender, age. Total number of participant (N=200). Male is 39% and female is 61%. The number of women is more than men. The age range of the participant between (18-26) years.

27.5% students were the age range 18-20 years and 21-26 years age range there were 72.5% students.

Figure 4.1: Prevalence of Occupational Therapy students
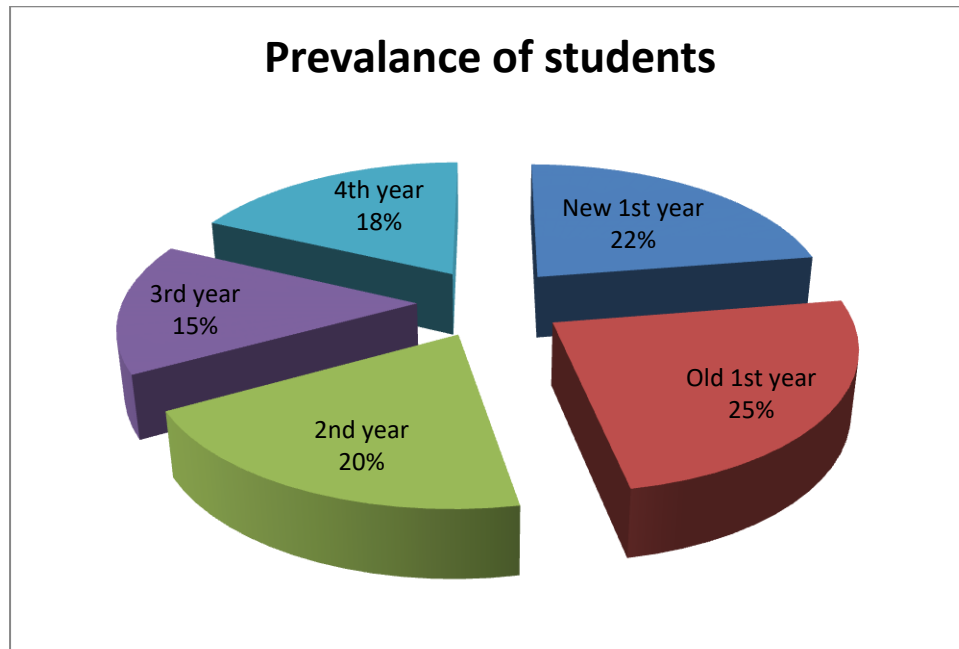
There were 22.5% (45) students in session 2021-22 (new 1st year), 24.5% (49) students were session 2020-21 (old 1st year), 20% (40) students were sessions 2019-20 (2nd year), 15% (30) students were session 2018-19 (3rd year), 18% (36) students were session 2017- 18 (4th year)

Table 4.2: Height and Weight of the students

Variable	Category	
Height	Minimum height 1.22m	Mean height 1.6 and SD 0.131
	Maximum height 1.86m	
Weight	Minimum weight 40kg	Mean weight 60.2 and SD 11.3
	Maximum weight 98kg	

The table 2 shows that the minimum and maximum height is 1.22m and 1.86m. Mean height is 1.6 and SD (±0.13). The weight of the participant is minimum 40 kg and maximum 98 kg. Mean weight 1.6 and standard deviation 11.3.

Table 4.3: Classification of BMI (WHO criteria)

Classification	BMI (Kg/M^2)
Underweight	<18.5
Normal weight	18.5-24.9
Overweight	25.0-29.9
Obese	≥30

Table 4.4: BMI Status of the Participant

Nutritional status	Frequency	Percentage
Underweight	25	12.5%
Normal	121	60.5%
Overweight	43	21.5%
Obesity	11	5.5%
Total	**200**	**100%**

The table 4 shows that the response rate was 100%. The results showed 121 (60.5%) students were normal BMI and other 25 (12.5%) were underweight, 43 (21.5%) were overweight, 11 (5.5%) were obesity.

Figure 4.2: Overview of BMI status of Occupational Therapy students.
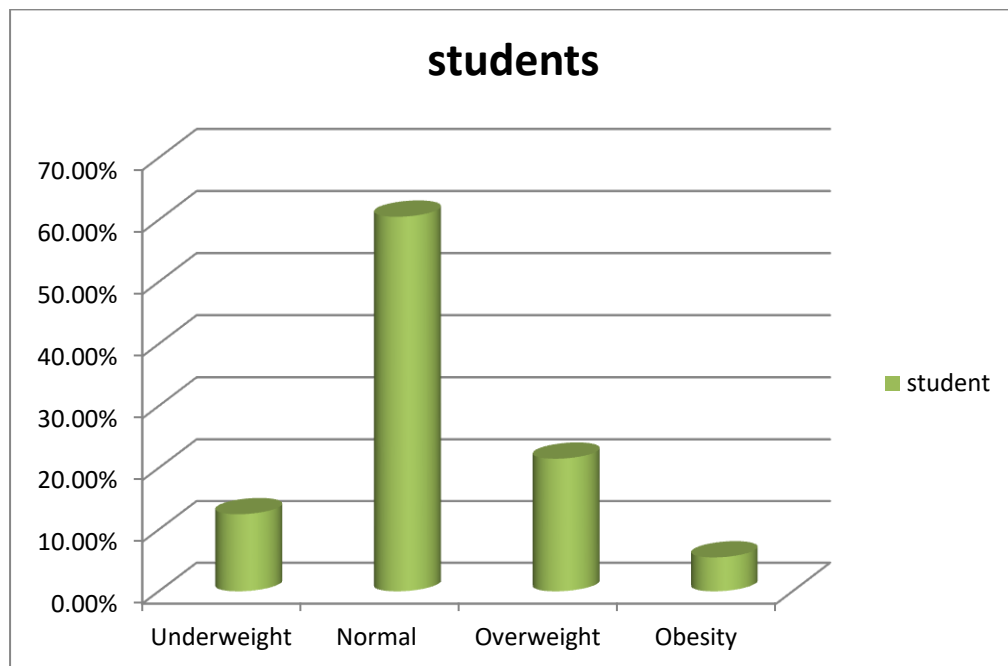
Table 4.5: Nutritional status 1

Nutritional status in age among students of Bangladesh Health Professions Institute.

	Nutritional Status				
Age	**Underweight**	**Normal**	**Overweight**	**Obesity**	**Total**
18-20 Years	7(12.7%)	36(65.5%)	12(21.8%)	0	55
21-26 Years	18(12.4%)	85(58.6%)	31(21.4%)	11(7.6%)	145

Among the 222 students of Occupational Therapy Department to whom the questionnaire was administered, 200 participants completely enrolled the study. Among the 200 study participants 55 (27.5%) were the age group 18-20 years and 145 (72.5%) were 21-26 age group.

The age group of 18-21 years the result found that 12.7% students were underweight, 65.5% students were normal weight, 21.8% students was overweight. There was no obesity in this age group. The another age group was 21-26 years the result found that 12.4% students were underweight, 58.6% students were normal weight, 21.4% students were overweight and 7.6% students were obesity.

Table 4.6: Nutritional status 2

Nutritional status in gender among students of Bangladesh Health Professions Institute.

	Nutritional Status				
Gender	**Underweight**	**Normal**	**Overweight**	**Obesity**	**Total (N=200)**
Male	9(11.5%)	47(60.2%)	17(21.8%)	5(6.4%)	78
Female	16(13.1%)	74(60.7%)	26(21.3%)	6(4.9%)	122

The table showed that nutritional status in gender among students. The prevalence in male showed that 11.5% students were underweight, 60.2% students were normal, 21.8% students were overweight and 6.4% were obesity. On the contrary the prevalence in female showed that 13.1% students were underweight, 60.7% students were normal, 21.3% students were overweight and 4.9% were obesity.

Figure 4.3: Category by age of BMI status.
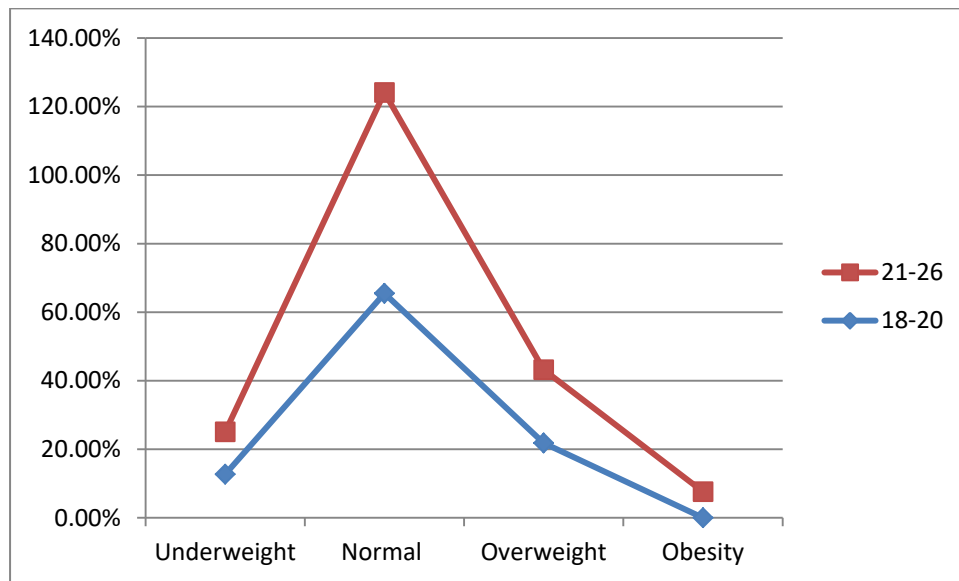
The age of the participants categorized two parts. There was 18-20 and another was 21-26. At the age range of 18-20 the nutritional status is underweight 12.7% of students, normal 65.5%, overweight 21.8%. In this result it could show that in this age range there was no obesity among the participants. The another age group of 21-26 here find that 12.4% was underweight, 58.6% find normal weight, 21.4% overweight, 7.6% is obesity find out.

Figure 4.4: Comparison of BMI status between male and female students
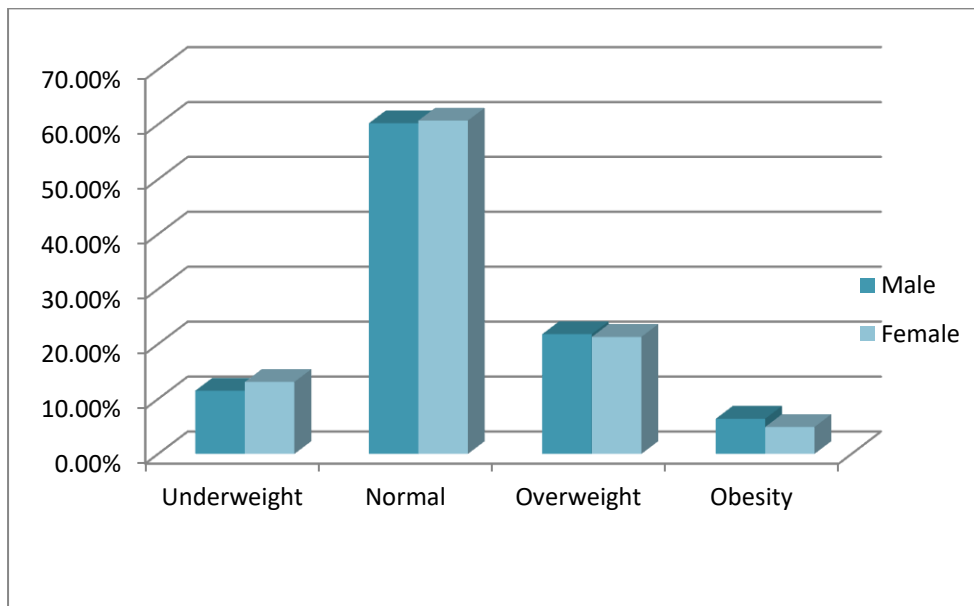
The dissociation of BMI categories according to gender showed that out of 78 male students 9 (11.5%) fall in underweight, 47(60.2%) students normal status, 17 (21.8%) students fall overweight and 5 (6.4%) students is obesity. On the other hand the results showed that out of 122 female students 16 (13.1%) fall in underweight, 74 (60.7%) students normal range, 26 (21.3%) students overweight, 6 (4.9%) fall into obesity.

Table 4.7: Prevalence of possible cause

Variable	Category	Frequency (N=200)	Percentage
Obesity in family	Yes	70	36.9%
	No	125	63.1%
Meals eat per day	Once time in a day	0	0
	Two times in a day	34	17.1%
	Three times in a day	127	63.8%
	More than three times	38	19.1%
Eat fast-food	Everyday	19	9.5%
	1-2 times in a week	71	35.7%
	several times a month	100	50.3%
	never	9	4.5%
Exercise	Yes	165	83.3%
	No	33	16.7%
Type	regular	18	10.9%
	1-2 times a week	38	23%
	1-2 times a month	26	15.8%
	never	83	50.3%
Active person during the day	sedentary	4	2%
	light	16	8%
	moderate	154	77%
	intensive	26	13%
Disease	Yes	32	16%
	No	168	84%

Along with the BMI diagnosis, some abnormal results were found and result was obtained by searching for them. Perceived obesity in 36.5% participant was reported that there has obesity in their family and 63.1% participants did not have any obesity. 34 (17.1%) participants took their meals two times in a day, 127 (63.8%) participants took meal three times in a day and 38 (19.1%) participants took meal more than three times. The frequency and percentage of eating fast food was 19 (9.5%) of participants ate fast-food every day, 71 (35.7%) participants ate 1-2   times in a week, 100 (50.3%) participants took several times a month and 9 (4.5%) participants never ate fast-food.

Exercise is important for human for being healthy. This study we found that 165 (83.3%) attended exercise and 16.7% participants did not attend. Among them 10.9% attended regular, 23% participants attended 1-2 times a week, 15.8% participants 1-2 times a month and 50.3% did not attend never in the exercise. 2% participants were lead sedentary lifestyle, 16 (8%) of participants they thought they are light working person, 77% moderate and 13% intensive active person. Many disease might be occur hormonal imbalance that could be cause of disturbance of nutritional status. 16% participants affected different disease and 84% participants did not have any complication of disease.

CHAPTER V : DISCUSSION

The study presented the body mass index status of students in Bangladesh Health Professions Institute Dhaka, Bangladesh. To find out the frequency of underweight, normal weight, overweight and obesity. The study was conducted 1st year to 4th year B.Sc. in Occupational Therapy students. Total 222 students study B.Sc. in Occupational Therapy department but the study was conducted among 200 participants.

In this study 39% students was male and 61% students was female. Among these participants 60.5% students had normal BMI. 12.5% students of underweight, 21.5% students fall into overweight and 5.5% students met obesity. If we categorized between male and female we can find that male result of nutritional status 11.5% is underweight, 60.2% students normal health, 21.8% students overweight and 6.5% students fall in obesity. On the other hand female result of nutritional status was 13.1% students in underweight, 60.7% students in normal status, 21.3% students overweight and 4.9% students fall obesity.

In the study most of the students had normal BMI. These findings were almost comparable to others research article conducted Private medical college in Islamabad finding the similar result that 59.7% of normal status, Lahore medical and Dental college, Lahore found that 60% of students were within the normal weight, 27% students were overweight, 7% students were obesity category (Dadu & Javaid, 2011). The National Ribat University, Khartoum finding some result that 71.2% students were normal status, 17.8% students overweight and 9.2% students faced obesity (Abdalla & Mohamed, 2008).

BMI status of Private Medical college of Bangladesh. They found that 32% female students faced underweight, 12.9% students were overweight and 4.9% female students were obesity. The 14% male students were underweight, 60% normal, 30% students were faced obesity. It is similar finding most of the students were normal nutritional status and second greater frequency is overweight.

It showed that majority of underweight, this could be due to the current trend for slimness rather than malnutrition. The overweight and obesity were more observed among the male students in this study (Siddiqui et al., 2014). Malaysian Medical School which showed that 68.8% of students in their study were normal. In another study in students of Omani medical college 59% were normal. A study conducted at Dow medical college showed their result with 59% of students having normal BMI. From a Malaysian college it was reported that 69% of students had normal BMI. Public sector medical college in Pakistan showed that significant number of students in underweight category with about 30 % of students falling in this category while obesity at about 3% was not found to be a significant problem. This study showed that the majority of overweight students were females; this could be due to the current trend for the slimness rather than malnutrition. The overweight and obesity were more prevalence among the male students in this study and similar finding were also observed in Greek adolescent. (Minhas et al., 2010). According to body mass index in a private medical college in Bahria University found that about 59.7% participant under study had normal weight, 28.9% students were under weight, 9.4% students over weight while 2% students were obese. (Afzal et al., 2015). Sir Salimulla medical college of physiology department students showed the prevalence of obesity was 4.5%, overweight was found among 20.5% of students, underweight students were 11.3% (Akhter et al., 2010).

The finding in the study of significant proportion of overweight and obesity especially among the male students is alarming. Almost 36.9% participants reported that there had obesity in their family. Genetic factors were associated being a fat person. Consuming more calories than needed. Almost 19.1% participants consuming calories more than three times in a day. On the other hand 35.7% participants reported that they intake fast food 1-2 times in a week and 50.3% participants intake several times a months. In today's generation, people are addicted to fast food. As a result, the risk of obesity increases.

Modern people are comfortable. They like to live a life of ease. Life is spent using the availability of technology without any effort. As a result, excess calories accumulate in the body and contribute to weight gain. Various diseases contribute to weight gain. It can be a cause of weight gain. Food/fast food intake, living a lazy lifestyle, disease may be cause of overweight and obesity. Studies have shown that female student's underweight rate is more than male students. Everyone likes to be beautiful. Currently, the trend is to present oneself in an attractive manner. As a result female are inclined towards it.

CHAPTER VI: CONCLUSION

6.1 Strengths and Limitation

6.1.1 Strengths

Some strength of the study

- Relatively easy to analyze.

- More accurate and reliable.

- This study can be tested and checked.

- A large sample size can cover in this study.

- The BMI rating scale was valid which is accredited by World Health Organization.

- The study was time effective and helpful.

- In further study it may help as a resource.

- Study response rate was 90%. Participants were helpful and actively participate in the study.

6.1.2 Limitation

- Difficult to understand context of a phenomenon.

- Study technique can lead to misleading results.

- The ratio of male and female was inconsistence.

- The BMI survey questions had no reliability and validity.

- Non respondent rate was 10%.

- Power relationship was not maintained properly.

6.2 Practice Implication

Health is a valuable resource of human. It is the root of all happiness. BMI is a good way to gauge whether weight is in healthy proportion to height. Knowing the BMI can help determine any health risks may face if it is outside of the healthy range. Being overweight can cause to a range of chronic conditions.

Such as high blood pressure, heart problem, blood vessel problem, cardiovascular disease, musculoskeletal problem etc. On the other hand underweight can result in other health issues like, risk of malnutrition, osteoporosis, anemia etc.

6.2.1 Recommendation for further research

- Determine the association between obesity and stress.

- Further research needs to conduct wide range of samples all students of BHPI among OT, PT, SLT students.

- Organizing awareness program so that students can be aware about their health.

6.3 Conclusion

The purpose of this study was to determine the BMI status of Occupational Therapy students in Bangladesh Health Professions Institute. It is the first general health status study of students. This study suggested that obesity is not a major problem among the BHPI students but overweight is coming up as a significant problem both male and female students. After comparing that we can see that male students are in a risk than female. The frequency rate is more than female students. Then we see that underweight rate of students. The female students face higher frequency then male students. Now a day's female could be due to the current trend for slimness rather than malnutrition. Keeping in view that now about 60% of medical students belong to female gender this is a significant finding and need better education and awareness.

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APPENDICES

Appendix A

Approval letter

CRP/BHPI/IRB/09/22/651

28th September, 2022

Fatema Akter Asha
4th Year B.Sc. in Occupational Therapy
Session: 2017-2018, Student ID: 122170269
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Subject: Approval of the thesis proposal **"BMI status of Occupational Therapy students of Bangladesh Health Professions Institute"** by ethics committee.

Dear Fatema Akter,
Congratulations.
The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application to conduct the above-mentioned dissertation, with yourself, as the principal investigator and Nayan Kumer Chanda as thesis supervisor. The Following documents have been reviewed and approved:

Sr. No.	Name of the Documents
1	Thesis Proposal
2	Questionnaire
3	Information sheet & consent form.

The purpose of the study is to measure the BMI status of occupational Therapy students of BHPI. The study involves use of a BMI scale and questionnaire that may take 15 to 20 minutes to answer the question and there is no likelihood of any harm to the participants. The members of the Ethics committee have approved the study to be conducted in the presented form at the meeting held at 8.30 AM on 27th August, 2022. at BHPI (32nd IRB Meeting).

The institutional Ethics committee expects to be informed about the progress of the study, any changes occurring in the course of the study, any revision in the protocol and patient information or informed consent and ask to be provided a copy of the final report. This Ethics committee is working accordance to Nuremberg Code 1947, World Medical Association Declaration of Helsinki, 1964 - 2013 and other applicable regulation.

Best regards,

(signature)

Muhammad Millat Hossain
Associate Professor, Dept. of Rehabilitation Science
Member Secretary, Institutional Review Board (IRB)
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Date: 10.09.2022

The Chairman
Institutional Review Board (IRB)
Bangladesh Health Professions Institute (BHPI)
CRP-Savar, Dhaka-1343, Bangladesh

Subject: **Application for review and ethical approval.**

Sir,

With due respect I would like to draw your kind attention that I am a student of B.Sc. in Occupational Therapy student at Bangladesh Health Professions Institute (BHPI), Centre for the Rehabilitation of the Paralysed (CRP). I would like to conduct a research titled," BMI status of Occupational Therapy students of Bangladesh Health Professions Institute" with myself, as the principal investigator and Nayan Kumer Chanda as my thesis supervisor. The purpose of the study is to explore the BMI status of BHPI students.

BMI scale and structured Questionnaire will be used in the study that will take about 15 to 20 minutes of measurements of BMI. Data collectors will receive informed consents from all participants. Any data collected will be kept confidential.

Therefore, I look forward to having your approval for the thesis proposal and to start data collection. I also assure you that I will maintain all the requirements for study.

Sincerely yours,

Fatema Akter

Fatema Akter Asha
4th Year B.Sc. in Occupational Therapy
Session: 2017-2018, Student ID: **122170269**
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Recommendation from the thesis supervisor/concerned authority:

Nayun

Nayan Kumer Chanda
Assistant Professor of Occupational Therapy Department.
Bangladesh Health Professions Institute (BHPI)
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Permission letter 1

Date: 19 October, 2022

To

The Head of the Department

Department of Occupational Therapy

Bangladesh Health Professions Institute (BHPI)

CRP, Savar, Dhaka-1343

Subject: Prayer for seeking permission of data collection.

Sir,

With due respect that I am a 4th year B.Sc. in Occupational Therapy student of Bangladesh Health Professions Institute. I am conducting a research which is a part of course curriculum. The ethical review board has approved my thesis proposal. The research title is **"Body Mass Index Status of Occupational Therapy students of Bangladesh Health Professions Institute"**. My Research design is quantitative. I would like to collect data from 1st year to 4th year B.Sc. in Occupational Therapy students of BHPI to know their health status. Now I have needed to your permission for collecting data. I am assured that there is no possibility of harm to anyone through this study.

So, I therefore pray and hope that you would be kind enough to give me the permission to collect data for accomplishing my research project successfully and oblige thereby.

Yours Sincerely

Fatema Akter Asha

4th year, B.Sc. in Occupational Therapy

Roll: 03, Session: 2017- 2018

Bangladesh Health Professions Institute (BHPI),CRP

Forwarded for

Permitted for Data collection.

19/10/2022

Permission letter 2

02 November, 2022

To

The Course Coordinator

Department of Rehabilitation Science.

Bangladesh Health Professions Institute (BHPI)

CRP, Savar, Dhaka-1343

Subject: Prayer for permission to use weight and height scale for data collection.

Sir,

With due respect that I am a 4th year B.Sc. in Occupational Therapy student of Bangladesh Health Professions Institute. I am conducting a research which is a part of course curriculum. The ethical review board has approved my thesis proposal. The research title is **"Body Mass Index Status of Occupational Therapy students of Bangladesh Health Professions Institute"**. So, it is necessary to accurately determine weight and height in order to collect data. Now I have needed to your permission for using these tools. I am assured that there will no damage of these tools.

So, I therefore pray and hope that you would be kind enough to give me the permission to use weight and height scale for collection data and accomplishing my research project successfully and oblige thereby.

Yours Sincerely

Fatema Akter Asha

4th year, B.Sc. in Occupational Therapy

Roll: 03, Session: 2017- 2018

Bangladesh Health Professions Institute (BHPI), CRP

Forwarded for your kind consideration and Permission to weight & height scale in your Lab for data collection purpose.

Sm. Mred
02/11/2022

S. Moniruzzaman
Associate Professor & Head
Dept. of Occupational Therapy
BHPI CRP Savar, Dhaka-1343

Agreed on Next Saturday (5/11/2022) to wednesday (30/11/2022) She must receive the weight/height machine from R. lab with registerering and return book. 30/11/2022.
reg by. Mohammad
02/11/2022
1:36

Appendix B

Information sheet

This is to inform that Fatema Akter Asha is a 4th year student of Bangladesh Health Profession Institute of Occupational Therapy Department, the academic institute of CRP. She is conducting a research which is part of course curriculum. The researcher would like to invite you to participate the study. The research title is **'Body mass index status of Occupational Therapy students of Bangladesh Health Professions Institute'.** By conducting the research will know the student's health status.

Your participant in the study is voluntary. You can withdraw your information anytime. No fee will be paid to the participant. You will not be harmed by participating in this research. You will gain knowledge and be aware about your health.

All your information will be kept confidential. If you have any query regarding the study, please feel free to ask to the contact information given below.

Supervisor

Nayan Kumer Chanda

Assistant Professor. Bangladesh Health Professions Institute.

BHPI, CRP

Student Researcher

Fatema Akter Asha

4th year, B.Sc in Occupational Therapy.

Bangladesh Health Profession Institute.

Gmail: fatemaakterasha.bhpi@gmail.com

তথ্য পত্র

গবেষক ফাতেমা আক্তার আশা বাংলাদেশ হেলথ প্রফেশন্স ইনস্টিটিউট এর অকুপেশনাল থেরাপি বিভাগের চতুর্থ বর্ষের ছাত্রী যেটা সিআরপির একটি একাডেমিক ইনস্টিটিউট। সে একটি গবেষণা পরিচালনা করছেন যা পাঠ্যক্রমের একটি অংশ। গবেষক আপনাকে গবেষনায় অংশগ্রহণের জন্য আমন্ত্রণ জানাতে চান। গবেষণার শিরোনাম হল 'বাংলাদেশ হেলথ প্রফেশনস ইনস্টিটিউটের অকুপেশনাল থেরাপি বিভাগের শিক্ষার্থীদের বডি মাস ইনডেক্স স্ট্যাটাস'। গবেষণাটি পরিচালনার মাধ্যমে শিক্ষার্থীদের স্বাস্থ্যের অবস্থা জানা যাবে।

আপনি স্বেচ্ছায় গবেষণায় অংশগ্রহণ করতে পারেন। আপনি যে কোনো সময় তথ্য প্রত্যাহার করতে পারবেন। অংশগ্রহণকারীকে কোন ফি প্রদান করা হবে না। এই গবেষণায় অংশ নিয়ে আপনার কোনো ক্ষতি হবে না। আপনি জ্ঞান অর্জন করার মাধ্যমে এবং আপনার স্বাস্থ্য সম্পর্কে সচেতন হতে পারবেন।

আপনার সকল তথ্য গোপন রাখা হবে। গবেষনা সম্পর্কে আপনার কোন প্রশ্ন থাকলে নিচে দেওয়া তথ্যে নির্দ্বিধায় যোগাযোগ করুন।

তত্ত্বাবধায়ক

নয়ন কুমার চন্দ

সহকারী অধ্যাপক

বাংলাদেশ হেলথ প্রফেশনস ইন্সটিটিউট।

বিএইচপিআই, সিআরপি

গবেষক

ফাতেমা আক্তার আশা

৪র্থ বর্ষ, বিএসসি ইন অকুপেশনাল থেরাপি।

জিমেইলঃ fatemaakterasha.bhpi@gmail.com

Consent form

The researcher Fatema Akter Asha is a 4th year student of Bangladesh Health Profession Institute of Occupational Therapy Department, the academic institute of CRP. She is conducting a research which is part of course curriculum. The research title is **'Body mass index status of Occupational Therapy students of Bangladesh Health Professions Institute'.**

In this study I am ……………………………………. a participant and I have been clearly informed about the purpose of the study. I have the right to refuse in the taking part at any time and at any stage of the study.

I will not be bound to answer to anybody. This study has no connection with me and there will be no impact on me. I am also informed that, all the information collected from interview that is used in the study will be kept safe and maintain confidentiality. My name will not be published anywhere. Only the researcher and supervisor will be eligible to access in the information for her publication of the result. I can consult with the researcher and the research supervisor about the research process or get answer of any question regarding the research project. I have been informed about the above mentioned and I am willing to participate in the study with giving consent.

Signature of the participant: Date:

Signature of the researcher: Date:

সম্মতিপত্র

গবেষক ফাতেমা আক্তার আশা বাংলাদেশ হেলথ প্রফেশন্স ইনস্টিটিউট এর অকুপেশনাল থেরাপি বিভাগের চতুর্থ বর্ষের ছাত্রী যেটা সিআরপির একটি একাডেমিক ইনস্টিটিউট। সে একটি গবেষণা পরিচালনা করছেন যা পাঠ্যক্রমের একটি অংশ। গবেষণার শিরোনাম হল 'বাংলাদেশ হেলথ প্রফেশনস ইনস্টিটিউটের অকুপেশনাল থেরাপি বিভাগের শিক্ষার্থীদের বডি মাস ইনডেক্স স্ট্যাটাস'।

এই গবেষণায়, আমি ………………………............... একজন অংশগ্রহণকারী এবং আমাকে অধ্যয়নের উদ্দেশ্য সম্পর্কে স্পষ্টভাবে জানানো হয়েছে। অধ্যয়নের যে কোন সময় এবং যে কোন পর্যায়ে অংশগ্রহণ প্রত্যাখ্যান করার অধিকার আছে।

আমি কাউকে জবাব দিতে বাধ্য হব না। এই অধ্যয়নের সাথে আমার কোন সম্পর্ক নেই এবং আমার উপর কোন প্রভাব পড়বে না। আমি আরও জানাচ্ছি যে ইন্টারভিউ থেকে সংগৃহীত সমস্ত তথ্য যা গবেষণায় ব্যবহার করা হবে সেগুলি সুরক্ষিত থাকবে এবং গোপনীয়তা বজায় রাখা হবে। আমার নাম কোথাও প্রকাশ করা হবে না। শুধুমাত্র গবেষক এবং তত্ত্বাবধায়ক তার ফলাফল প্রকাশের জন্য তথ্য ব্যবহার করতে পারবেন। আমি গবেষণা প্রক্রিয়া সম্পর্কে গবেষক এবং গবেষণা তত্ত্বাবধায়কের সাথে পরামর্শ করতে পারি বা গবেষণা সম্পর্কিত যেকোনো প্রশ্নের উত্তর পেতে পারি। আমাকে উপরে উল্লিখিত বিষয়ে অবহিত করা হয়েছে এবং আমি সম্মতি দিয়ে গবেষণায় অংশগ্রহণ করতে ইচ্ছুক।

অংশগ্রহণকারীর সাক্ষরঃ   তারিখঃ

গবেষকের সাক্ষরঃ   তারিখঃ

Withdrawal form

Participant name: …………………………………………

Reason for withdrawal:

……………………………………………………………………………………
……………………………………………………………………………………
……………………………………………………………………………………
………………………………………………………………………...............

Participant signature:

Date:

প্রত্যাহার পত্র

প্রত্যাহারেরকারনঃ

. . . .
. . . .
. . . .
. . . .
. . . .

অংশগ্রহণকারীর সাক্ষরঃ

তারিখঃ

Appendix C

Scale:

WHO international standard BMI cut-offs follows:

- Underweight: BMI is less than 18.5

- Normal weight: BMI is 18.5 to 24.9

- Overweight: BMI is 25 to 29.9

- Obese: BMI is 30 or more

Calculate:

Body mass index (BMI) = mass(kg)/height(m^2)

Structured Questionnaire:

Code No:

Age: Gender: Year:

Session: District: Height:

Weight:

- Is there anyone who has obesity in your family: Yes/ No
- How many meals do you eat per day: once in a day/ two times in a day/ three times in a day/ more than three times
- How often do you eat fast food: everyday/ 1-2 times in a week/ several times a month/ never
- Do you attend any exercise: Yes/ No. If yes what is its type- regular/ 1-2 times a week/ 1-2 times in month/ never
- Are you an active person during the day: sedentary/ light/ moderate/ intensive
- Do you have any disease: yes/ No.   If yes then what is the disease:
- Are you taking any treatment: Yes/ No
  If yes what type of treatment:

প্রশ্নাবলী -

কোড নংঃ

বয়সঃ   লিঙ্গঃ   বর্ষঃ   সেশনঃ

জেলাঃ   উচ্চতাঃ   ওজনঃ

- আপনার পরিবারে স্থূলতা আছে এমন কেউ আছে কি? হ্যা/ না

- আপনি দিনে কতবার খাদ্য গ্রহন করেন? দিনে একবার / দিনে দুইবার / দিনে তিনবার / তিনবারের অধিক

- আপনি কতবার ফাস্ট ফুড খান? প্রতিদিন / সপ্তাহে ১-২ বার / মাসে কয়েকবার / কখনো না

- আপনি কোন ব্যায়ামে অংশগ্রহণ করেন? যদি হ্যা হয় এর ধরন, নিয়মিত / সপ্তাহে ১/২ বার/ মাসে ১/২ বার/ কখনো না

- আপনি কেমন কর্মক্ষম ব্যক্তি? নিষ্ক্রিয় / সল্প / মাঝারি / প্রচন্ড

- আপনার কোন রোগ আছে? যদি হ্যা হয়, রোগের নামঃ

- আপনি কোন চিকিৎসা নিচ্ছেন? হ্যা/ না

  যদি হ্যা হয় কি চিকিৎসা নিচ্ছেন ়

Appendix D

Supervision Record Sheet

Bangladesh Health Professions Institute
Department of Occupational Therapy
4th Year B. Sc in Occupational Therapy
OT 401 Research Project

Thesis Supervisor- Student Contact; face to face or electronic and guidance record

Title of thesis: "Body Mass Index Status of Occupational Therapy students of Bangladesh Health Professions Institute".

Name of student: Fatema Akter Asha

Name and designation of thesis supervisor: Nayan Kumer Chanda,

Assistant Professor of Occupational Therapy Department, BHPI, CRP.

Appointment No	Date	Place	Topic of discussion	Duration (Minutes/ Hours)	Comments of student	Student's signature	Thesis supervisor signature
1	18.08.22	BHPI	Research topic, title	30 min	Explanation about research, idea	Fatema	Nayan
2	29.08.22	BHPI	Research title correction	30 min	New idea for research developed	Fatema	Nayan
3	25.8.22	Library	Research title final	1 hour	Clean explanation about methodology	Fatema	Nayan

4	27.08.22	BHPI, building	Proposal presentation feedback	1 hour	feedback of presentation.	Fatema	Nayan
5	28.08.22	BHPI, building	Research proposal document submission	40 mins	Final correction	Fatema	Nayan
6	13.09.22	BHPI, building	Research proposal 1st submission	40 min	Refining final research proposal	Fatema	Nayan
7	14.09.22	BHPI, building	Research proposal correction	1 hour	Literature review correction	Fatema	Nayan
8	26.09.22	BHPI, building	Research proposal correction	1 hour	Introduction correction	Fatema	Nayan
9	27.09.22	BHPI, building	Proposal correction	1 hour	Methods correction	Fatema	Nayan
10	08.10.22	BHPI, building	Proposal correction	1 hour	Methods recorrection.	Fatema	Nayan
11	16.10.22	BHPL building	Research draft	1 hour	Introduction submission.	Fatema	Nayan
12	19.10.22	BHPI, building	Research draft	1 hour	Literature submission.	Fatema	Nayan
13	26.10.22	BHPI, building	Research draft	1 hour	Result submission.	Fatema	Nayan
14	05.11.22	BHPI, building	Research draft	1 hour	Discussion submission.	Fatema	Nayan

15	09.11.22	BHPI, building	Research draft	1 hour	Methodology discussion	Fatema	Nayu
16	16.11.22	BHPI, building	Research draft	1 hour	Methodology correction.	Fatema	Nayu
17	21.11.22	BHPI, building	Questionnaire submission	30 min	Questionnaire develop	Fatema	Nayu
18	2.12.22	BHPI, building	Questionnaire feedback	30 min	Reconnection of questionnaire	Fatema	Nayu
19	9.12.22	BHPI, building	Data input in spss discussion	1 hour	Effective feedback	Fatema	Nayu
20	13.12.22	BHPI, building	Variable setup	1 hour	Effective feedback	Fatema	Nayu
21	24.12.22	BHPI, building	Data input	1 hour	Effective feedback	Fatema	Nayu
22	27.12.22	BHPI, building	Data analysis	1 hour	Effective feedback	Fatema	Nayu
23	28.12.22	BHPI, building	Chi-square test	1 hour	Need clear explanation	Fatema	Nayu
24	29.12.22	BHPI, Building	Introduction and literature review feedback	1 hour	Discussion	Fatema	Nayu
25	31.12.22	BHPI, building	Recode, descriptive analysis discussion	1 hour	Discussion	Fatema	Nayu

26	01.1.23	BHPI, building	Results discussion and feedback	1 hour	Need to organize again	Fatema	Nayu
27	03.1.23	BHPI, building	Result and discussion part feedback	1 hour	how to link discussion part with result.	Fatema	Nayu
28	08.1.23	BHPI, building	Methodology discussion	1 hour	Need more supervision.	Fatema	Nayu
29	16.1.23	BHPI, building	Methodology discussion	1 hour	Need more supervision for sampling technique	Fatema	Nayu
30	19.1.23	BHPI, building	Methodology discussion	1 hour	Sample size calculation need	Fatema	Nayu
31	21.1.23	BHPI, building	Sample size calculation	1 hour	Need more discussion.	Fatema	Nayu
32	23.1.23	BHPI, building	Ethical consideration discussion	1 hour	Effective	Fatema	Nayu
33	30.1.23	BHPI, building	Inclusion and exclusion criteria correct.	1 hour	Effective discussion.	Fatema	Nayu
34	06.2.23	BHPI, building	Table, figure discussion	1 hour	need more information	Fatema	Nayu
35	09.2.23	BHPI, building	Table, figure discussion	1 hour	Effective supervision	Fatema	Nayu
36	11.2.23	BHPI, building	Reference discussion	1 hour	Effective supervision	Fatema	Nayu

37	13.2.23	BHPI building	Appendix discussion	1 hour	Effective discussion.	Fatema	Nayn
38	2.05.23	BHPI building	Thesis final draft submission and discussion	1 hour	Need more discussion.	Fatema	Nayn
39	07.05.23	BHPI building	Thesis presentation discussion	1 hour	Require more supervision.	Fatema	Nayn
40	15.05.23	BHPI, building	Thesis presentation feedback	1 hour	Need correction	Fatema	Nayn
41	3.6.23	BHPI, building	Final feedback of book submission.	1 hour	Effective feedback	Fatema	Nayn
42	04.6.23	BHPI, Building	Final feedback	1 hour	Effective	Fatema	Nayn
43							
44							
45							
46							
47							