

Experience of Rehabilitation Professionals Regarding Conducting Undergraduate Research: A Qualitative Study



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Except where it is made in the text of the thesis, this thesis contains no material published elsewhere or extracted in whole or in part from a thesis presented by me for any other degree or seminar. No other person's work has been used without due acknowledgement in the main text of the thesis. This thesis has not been submitted for the award of any other degree in any other tertiary institution. The ethical issue of the study has been strictly considered and protected. In case of dissemination of the findings of this project for future publication, the research supervisor will be highly concerned, and it will be duly acknowledged as an undergraduate thesis.

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DEDICATION

I humbly dedicate this piece of my work to my loving parents Pradip Chakraborty and Khukumoni Chakraborty for whom I have come to this stage. I dedicate this to my uncle as well, who had countless dreams about me. But unfortunately, he had passed away very recently.

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LIST OF ABBREVIATIONS

AHP	Allied Health Professionals
AUB	American University of Beirut
BHPI	Bangladesh Health Professions Institute
BSc	Bachelor of Science
CI	Confidence Interval
CRP	Centre for the Rehabilitation of the Paralysed
FCPS	Fellowship of College of Physicians and Surgeons
IRB	Institutional Review Board
MBBS	Bachelor of Medicine, Bachelor of Surgery
MDT	Multidisciplinary Team
MSLQ	Motivated Strategies and Learning Questionnaire
NGO	Non-Governmental Organisation
OT	Occupational Therapy
PT	Physiotherapy
SLT	Speech and Language Therapy
WCPT	World Confederation for Physical Therapy
WFOT	World Federation of Occupational Therapists
WHO	World Health Organisation

ABSTRACT

Background: Rehabilitation science is an interdisciplinary field focusing on human function and disability. The Bangladesh Health Professions Institute (BHPI) is an academic institute of the Centre for the Rehabilitation of the Paralysed (CRP) in Bangladesh offers various rehabilitation courses, such as Occupational Therapy (OT), Physiotherapy (PT), Speech and Language Therapy (SLT) and Prosthetics and Orthotics (P and O). These rehabilitation courses develop expert rehabilitation professionals to provide appropriate rehabilitation for people with disabilities. As the BHPI has been running an undergraduate research program for decades, it was essential to know the experience of rehabilitation professionals as there is a gap in the evidence.

Aim: The study aimed to explore the experiences of rehabilitation professionals who graduated from the BHPI in conducting their undergraduate research.

Methods: A phenomenological approach of qualitative research design was used to conduct the study. Nine participants were conveniently selected who recently completed graduation from the Department of OT, PT and SLT of the BHPI. There were three respondents from each department, with no participants from P and O as they did not match the criteria. Face-to-face semi-structured interviews were performed to collect data through a self-developed interview guide. Thematic analysis was used by following Braun and Clarke's six steps for analysing all data.

Results: The study identified six themes, including some sub-themes. The themes are 1) Readiness to conduct research, 2) Institutional facilities, 3) Data collection experience, 4) Supervision, 5) Family support and 6) Self-reflection. All themes, including sub-themes, described the students' simultaneously positive and negative experiences concerning the research process.

Conclusions: Participants in this study finished their theses as scheduled. Results showed that participants with previous preparation on methodology were more motivated. They also suggested the BHPI for developing a research council to increase the students' involvement with the basic research process. Participants also recommended that the students must maintain frequent communication with their supervisors. As supervisors are involved in the entire process, their experience can be further studied. Additionally, students' mental health during the research time can be further researched.

Keywords: Undergraduate Research, Rehabilitation, Rehabilitation professionals, Experience, Occupational Therapy, Physiotherapy, Speech and Language Therapy and Prosthetics and Orthotics.

CHAPTER I: INTRODUCTION

1.1 Background

Rehabilitation science understanding the causes, courses, and consequences of disability and developing new interventions to promote optimal functional performance and quality of life (Ntusi, 2019). The rehabilitation workforce consists of different health workers, including Physiotherapists, Occupational Therapists, Speech and Language Therapists, Audiologists, Orthotists and Prosthetists, Clinical Psychologists, Physical Medicine, Rehabilitation Doctors, and Nurses (About CRP . CRP, Bangladesh, 2022). According to Bangladesh Rehabilitation Council Act 2018, rehabilitation practitioners must ensure the attainment of standard qualifications by completing the course from affiliated educational institutions of Bangladesh within a specified time (Bangladesh Rehabilitation Council Act 2018).

The educational opportunities in rehabilitation subjects vary from country to country in terms of the level of degree, course duration, the curriculum of the programs, etc. The field of rehabilitation science consists of a variety of educational sectors. However, most of the degrees are available in assistant, diploma, honours, master's level, and doctorate degrees (Hartley & Bourgeois, 2020; Oswald et al., 2018). Therefore, professionals build their skill sets in a wide range of areas, such as theoretical foundation, clinical skills, research, etc. In addition to academic education, clinical placements, skills-based training, and certifications are also available in this sector. Bachelor programs in Rehabilitation Science subjects are three to four-year undergraduate programs throughout the world. Courses are separated into six to eight

semesters, including theoretical and practical evaluation (Bishop, 2020; Charumbira et al., 2021; Wijngaards-de Meij & Merx, 2016).

The discipline of these rehabilitation courses works with people who have physical, emotional, mental, neurological, or vocal disabilities. This field attempts to improve the life, condition, and rehabilitation of such limited functional persons through various therapy modalities, such as exercises, functional training, adaptive devices and equipment, ergonomic training, and environmental adaptation (Hartley & Bourgeois, 2020; Oswald et al., 2018). Undergraduate research conduction is a part of course fulfilment in rehabilitation settings. The research process entails some steps, including selecting a study topic, reviewing research proposals, requesting ethics approval, gathering and analysing data, writing the final report, conducting the final examination, and publishing the work produced (Azmat & Ahmad, 2022; Coetzee & Kruger, 2018; El Achi et al., 2020; Ingrassia et al., 2014). This experience is important in rehabilitation settings for improving knowledge by interlinking with the upgrade practice and developing individual transferable skills (Charumbira et al., 2021).

The Centre for the Rehabilitation of the Paralyzed (CRP) is a non-government organisation in Bangladesh. This institute promotes the empowerment of disabled people through the development of skilled personnel in health care and rehabilitation by focusing on physical, emotional, social, psychological, and economic aspects. Bangladesh Health Professions Institute (BHPI), the academic institute of the CRP under the Faculty of Medicine, University of Dhaka, Bangladesh. In response to the provision of prime rehabilitation service, BHPI administrates the courses of BSc in Physiotherapy, Occupational Therapy, Speech and Language Therapy and Prosthetics and Orthotics, Physiotherapy and Occupational Therapy Diplomas, Laboratory Sciences and Radiography Diploma, Certificate in Education for Special Education,

Diploma in Rehabilitation Nursing and MSc in Rehabilitation Science and MSc in Occupational Therapy (About CRP . CRP, Bangladesh, 2022). According to the BSc course curriculum, the conduction of undergraduate research is a total fulfilment of the requirements for the subject of Research and the partial fulfilment of the requirements for completing the degree. Over the years of BHPI, many rehabilitation professionals conducted undergraduate research. However, there needs to be identify evidence of their experience regarding this process. The experiences, skills, and knowledge students acquire at the undergraduate level will better prepare them for many of their future goals, including careers.

1.2 Justification of the Study

The research capacity development among undergraduate health sciences students has been a key area of observation in this study. Some different strategies have been suggested and implemented to facilitate a standard process. Addressing the elements that support undergraduate student research in the various health professions might help to develop efficient instructional interventions (Abiola & Ajao, 2022; Y. Adebisi, 2022; Y. A. Adebisi, 2022; Bovijn et al., 2017; Laustsen et al., 2021; Matin & Khan, 2017; Muhandirange et al., 2021). At BHPI rehabilitation, students conduct research in their final year as a part of the course curriculum. The experiences should be identified to ease the research conduction process and for further research curriculum planning. Therefore, this study identified interns' experiences from different rehabilitation settings in conducting their undergraduate research. Supervisors can develop structured plans by concerning the students, identifying experiences, and addressing the gap in the current curriculum. Also, future undergraduate researchers can get a general idea about the process and its pitfalls. When it can be ensured as a better thesis, so many current progressive events can arise with the involvement of the students. Moreover, the

identifying areas can be a discussion topic for Institutional Review Board to facilitate students' undergraduate research for developing a structured plan.

1.3 Operational Definition

1.3.1 Rehabilitation

Rehabilitation is defined as "a set of interventions designed to optimise functioning and reduce disability in individuals with health conditions in interaction with their environment" (WHO, 2021).

1.3.2 Rehabilitation Professional

The educational degree required in different rehabilitation professions varies from country to country. In every sector, after graduation they are named as rehabilitation professionals. In Bangladesh, every rehabilitation course contains a four-year academic degree and a one-year internship. According to international standards, interns are also rehabilitation professionals (Regalado et al., 2023).

1.3.3 Occupational Therapy

Occupational therapy is a client-centred health profession concerned with promoting health and wellbeing 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 (WFOT, 2012).

1.3.4 Physiotherapy

"Physiotherapists assess, plan and implement rehabilitative programs that improve or restore human motor functions, maximize movement ability, relieve pain syndromes,

and treat or prevent physical challenges associated with injuries, diseases and other impairments. They apply a broad range of physical therapies and techniques such as movement, ultrasound, heating, laser and other techniques. They may develop and implement programmes for screening and prevention of common physical ailments and disorders" (WHO, 2009).

1.3.5 Speech and Language Therapy

Speech and language therapy is an evidence-based discipline that anticipates and responds to the needs of individuals who experience speech, language, communication, or swallowing difficulties. Speech and language therapy works in partnership with individuals and their families and with other professions and agencies to reduce the impact of these often-isolating difficulties on well-being and the ability to participate in daily life (RCSLT, 2005).

1.3.6 Research

Research is an investigation or experimentation aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts, or practical application of such new or revised theories or laws (Naidoo, 2011).

1.4 Study Question, Aim, Objective

1.4.1 Study Question

How is the experience of rehabilitation professionals regarding conducting their undergraduate research?

1.4.2 Aim

To explore the experiences of rehabilitation professionals who graduated from the BHPI in conducting their undergraduate research.

1.4.3 Objectives

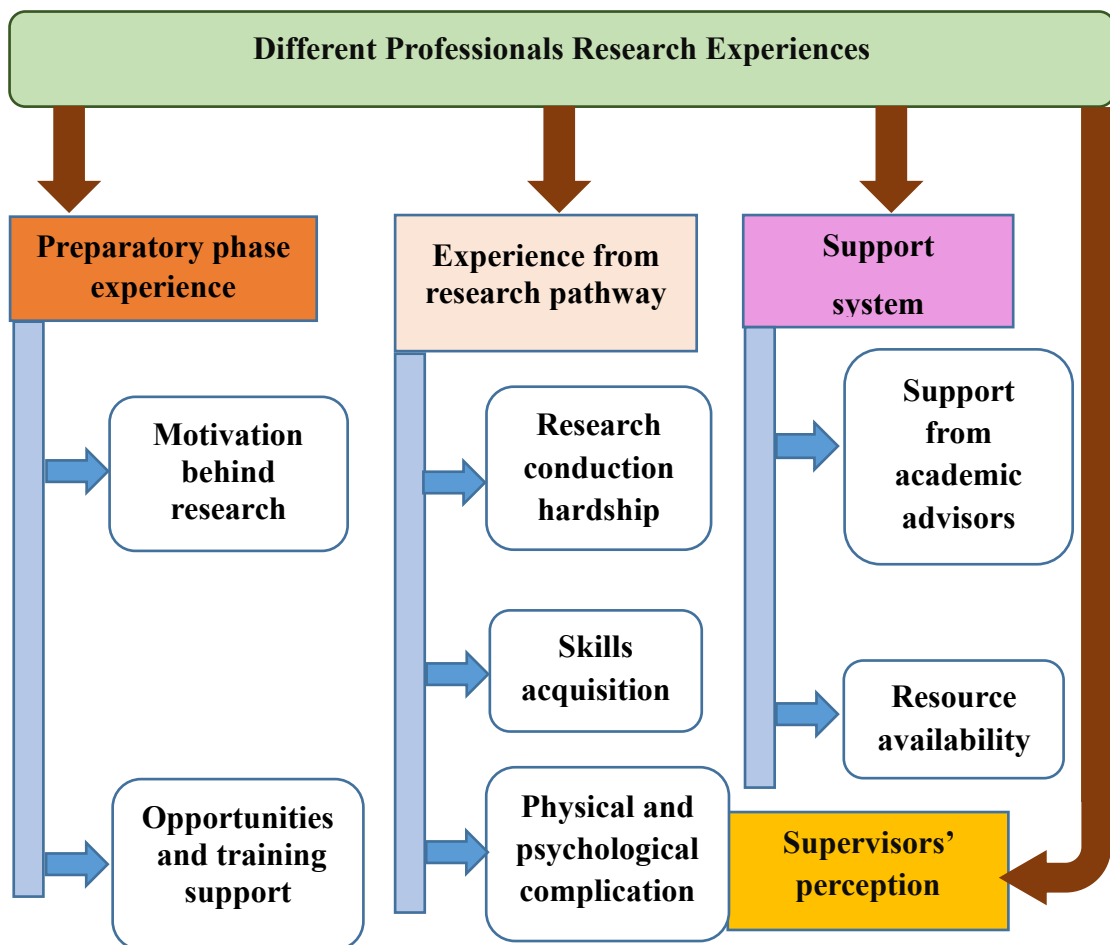
- To know about their self-motivation and self-efficacy during conducting undergraduate research.
- To explore the student-supervisor relationship during the study process.
- To find out the peer support during conducting the study.
- To understand the available research environment within BHPI.
- To explore the positive experiences and challenges during the research process.
- To explore the plan of action for research-based career development in the future.

CHAPTER II: LITERATURE REVIEW

This literature review is the synthesis of some different professionals' research experience. Much of this research has focused on the preparatory phase experience, experience regarding conducting research, and the support system needed among undergraduate, postgraduate, and early career researchers. Please see the Figure 2.1 for an overview of the literature review findings:

Figure 2.1

Overview of findings from literature review



2.1 Preparatory Phase

This section reflects the preparation findings among the different professionals concerning what motivated the researchers, opportunities and training support, and learning outcomes related to research.

2.1.1 Motivation behind Research

Previous engagement in research as research assistant and research participant motivated the professionals to conduct research. Additionally, academic results, interest in a particular field, intrinsic value, self-regulation, and use of cognitive strategy were also found as motivating factors for students (Abiola & Ajao, 2022; El Achi et al., 2020; Jones & Lerner, 2019; Muhandiramge et al., 2021). Furthermore, learning, motivation, networking opportunities, career choice and positive motivating factors of previous publications were also included (Azmat & Ahmad, 2022; Bovijn et al., 2017; Bridge et al., 2018; Shaw et al., 2013). A cross-sectional study was conducted at the American University of Beirut (AUB), where 1815 undergraduate students from different health professionals enrolled in different years. This study aimed to assess the perception, attitude, practice, and barriers towards medical research, as well as to identify factors affecting them, such as background characteristics and research involvement. These findings displayed that allied health profession students showed general interest, teamwork, networking facilities, and self-competence in instructional structure at undergraduate level thesis conduction (Bovijn et al., 2017). A survey was conducted to better understand how Australian university students experience research in a variety of areas during their fourth year of study. The motivated Strategies and Learning Questionnaire (MSLQ) was used to assess students' values and goals for a course. This study assessed their beliefs about the skills needed to succeed in a course and the use of different cognitive and meta-cognitive strategies (Shaw et al., 2013). In Pakistan, a

mixed-method study was conducted to investigate students' experiences in completing a thesis and the problems they faced during the process of completing their research. The study was conducted between three universities consisting of 37 students and seven supervisors where the students' experiences were investigated through administrative questionnaires and in-depth interviews to explore the experience of supervisors. In this study, 64.85% of students responded that they had lack of interest to complete any assigned tasks for thesis conduction (Azmat & Ahmad, 2022). Another mixed-method study was conducted by using a Likert scale and open questions among 80 students of the University of Liverpool and 128 students of the Royal Melbourne Institute of Technology University (RMITU). According to the results, 40% of respondents thought the system had improved their understanding of research methodologies, whereas 28% said they had not. Learning about the research process, developing teamwork abilities, having networking chances, and appreciating cultural differences were the key positive aspects of this study (Bridge et al., 2018). Three cross-sectional studies were conducted to investigate the knowledge, attitudes, and experiences towards conducting research. The studies were conducted among 207 Physiotherapists in Nigeria, 704 medical students of an Australian medical school, and 523 medical students of the American University of Beirut. These studies revealed that academic results, determinations of career choice, previous research experience and publications, and dedication were the motivating factors among these health professionals (Abiola & Ajao, 2022; El Achi et al., 2020; Muhandiramge et al., 2021).

2.1.2 Opportunities and Training Support

The prime findings of this section include the opportunities and training support professionals received to conduct research. These were mainly the research method training, course-based research conduction opportunity, training support, and volunteer

research involvement (Azmat & Ahmad, 2022; Bovijn et al., 2017; Uebel et al., 2021). Considering the evidence, the health professionals from post-graduate studies reported to have positive self-perceived research competence which facilitated them to pursue research in post-graduation (Azmat & Ahmad, 2022; Bovijn et al., 2017; Uebel et al., 2021). An experimental study was conducted with animal science students who enrolled in an undergraduate research course at Kansas State University, America. The author investigated the critical thinking ability of 618 students and found that students without undergraduate research experience scored worse than the students with undergraduate research experience (Jones & Lerner, 2019). Jordan et al. (2014) found that the research experiential course had the highest influence on learning when students were exposed to various undergraduate research methods. Furthermore, course-based research experiences had been conducted to increase the number of meaningful undergraduate research opportunities concerning the animal science students learning (Bridge et al., 2018). Different significant professional students presented different types of research, as well as the research entails. After a research training program, medical researchers gained knowledge of research metrics, research techniques, and practical experience with critical thinking for skill development (Jones & Lerner, 2019; Muhandiramge et al., 2021; Uebel et al., 2021).

2.2 Experience from Research Pathway

This section mainly covers the challenges of different study participants, skills acquisition, and the physical and psychological changes in their study conduction period.

2.2.1 Research Conduction Hardship

The literature has discussed a wide range of aspects of research related hardship. The common aspects are inadequate guidance from the institute, non-existent specific

research project/cell/council, inadequate discussion with the supervisor at regular intervals, limited institutional cooperation, survey issues during data collection (Cooper et al., 2021; Jones & Lerner, 2019; Matin & Khan, 2017). It was found by animal science students that the students were more confident during conducting group data collection than individual. Additional barriers such as lack of awareness of research opportunities, having criteria that excludes some students from research opportunities, lack of interaction with research faculty, and cultural issues were the common findings (Jones & Lerner, 2019). Undergraduate students of three Pakistani universities had faced some external challenges of trouble adjusting time with supervisors, a shortage of guidance time, difficulty to choose themes, and financial difficulties (Azmat & Ahmad, 2022). A cross-sectional descriptive study was carried out in 20 different medical colleges and institutes in Bangladesh. The study covered 133 postgraduate students and 46 supervisors. The identified hardships of postgraduate students of this study were excess workload, and inadequate cooperation from the institute (Matin & Khan, 2017). Numerous studies have discovered that the students faced difficulties because of their past bad experiences, their replacement in the middle of the thesis process because their supervisors had to continue studying abroad. Also, their various supervisors made it tough to decide what to write (Azmat & Ahmad, 2022; Cooper et al., 2021; Ermiami et al., 2021). The authors also found that parents demanded the professionals to graduate immediately without understanding that conducting research is a lengthy process. Parents repeatedly asked when their thesis was finished and when to go to the examination. Another highlighted that they found it difficult to assess credible articles and journals by following the topic and purpose (Cooper et al., 2020; Ermiami et al., 2021; Matin & Khan, 2017).

2.2.2 Skills Acquisition

Health professionals appeared to be closely linked to the learning outcome about specific research skills and professional skills (Bridge et al., 2018; Carson et al., 2018; Uebel et al., 2021). 94% of kinesiology students agreed that they had learned to write a literature review and 89% that they had learned a lot about analysing research data and 84% were satisfied with their honour's year (Carson et al., 2018). An online survey was conducted in the United States to investigate the current research requirements of various Department of Physiotherapy programs nationwide. The study was conducted with 350 students to determine physiotherapy graduates' preparedness to conduct research post-graduation. The author identified that most of the students were likely to continue their research and planned to direct their future to related studies (Ingrassia et al., 2014). While some studies revealed that the majority of those who had conducted the research project completed the graduation, this study identified that some were more likely to pursue research as a career (Bridge et al., 2018; Carson et al., 2018). The honours program supported active learning of medical research skills among students. Students who participated in the program presented structured literature reviews and research proposals. The students also performed well in data collection, analysis, final report writing up, and oral presentation (Muhandiramge et al., 2021). Overall, there appears to be evidence that the increase in satisfaction rates likely reflected the increasing number of students who discussed their projects (Bridge et al., 2018; Carson et al., 2018; Shaw et al., 2013). Most of the studies support the idea that after completing a thesis process, research design skills, practical research skills, computer skills, writing skills, and formal skills had developed in all students (Bridge et al., 2018; Carson et al., 2018; Ingrassia et al., 2014).

2.2.3 Physical and Psychological Complications

The postgraduate medical professionals, social science, and physiotherapy students carried out several investigations of physical and psychological problems. Evidence suggests that the research students get overburdened for the assigned tasks, develop low self-esteem, frustration, stress. They also feel tired, lack of motivation, become overly self-critical, feel apathetic, and have concentration difficulty. These physical and mental difficulties affected motivation, creativity, and productivity in research (Abiola & Ajao, 2022; Azmat & Ahmad, 2022; Matin & Khan, 2017). Depression was an intellectual finding among public university freshmen in the United States. It had been demonstrated to disproportionately affect individuals who felt excluded and lacking in sciences (Cooper et al., 2020). The findings from nursing students' statements were unstable emotions and emotional changes during the thesis process. They often cried and felt angry, afraid, anxious, sad, and lazy. Additional findings suggest that during the six to eight months of the thesis process, they experienced health problems such as dizziness, dyspepsia, back pain, and infections (Ermiati et al., 2021).

2.3 Support System

This section has two sub-sections, such as support from the academic advisor and resource availability regarding conducting the thesis.

2.3.1 Support from Academic Advisors

Studies on biology, occupational therapy, and other allied health professionals indicate that each student's project was over-seeded by the mentor or supervisor (Coetzee & Kruger, 2018; Cooper et al., 2021; Laustsen et al., 2021). Students gained guidelines from instructors about research opportunities in their labs or other labs on campus. Academic advisors about research opportunities, graduate teaching assistants about finding available research opportunities, and university peer support for easy thesis

conduction were reported (Coetzee & Kruger, 2018; Cooper et al., 2021; Laustsen et al., 2021).

2.3.2 Resource Availability

Funding, faculty websites, databases utilisation to search university research and research congruent environment have arisen as resources available from the experience of medical, health science, animal science, and biology students (Cooper et al., 2021; Jones & Lerner, 2019; Matin & Khan, 2017). Matin and Khan (2017) also investigated that in Bangladesh majority of the medical students (69.9%) and supervisors (78.3%) experienced that there was lack of funds for thesis work. Jones and Lerner (2019) supported that an initial barrier to increasing the number of conventional, participant-based undergraduate research experiences as well as course-based research experiences. A different finding has come out from optometry department students of poor guidelines relating to the module; uncertainty about the administrative processes, ignorance relating to the administrative process during the research process, time constraints, and lack of resources which made it difficult for the students (Coetzee & Kruger, 2018).

2.4 Supervisors Perception

The outline of the supervisor's perception regarding the students was that the students tease and ask irrelevant questions at an undergraduate level. In addition, problems in choosing topics, lack of interest in doing research, fear of plagiarism, and fear of thesis had arisen from this study (Azmat & Ahmad, 2022). Another challenging finding has arisen from supervisors supervising the students who had no background or knowledge of research and a lack of interest (Azmat & Ahmad, 2022; Ermiati et al., 2021; Matin & Khan, 2017).

Supervisors of postgraduate students in Bangladesh also mentioned that students' face physical changes like health issues and eye issues, psychological changes in stress issues, and overburden during the research (Matin & Khan, 2017). Muhandirange et al. (2021) discovered that students did not comprehend their topic due to insufficient reading. In the current study, both students and supervisors suggested that the inclusion of research methods and biostatistics in undergraduate and postgraduate curricula would be useful.

2.5 Summary of Key Gap of the Study

- **Field of studies:** Medical and health sector studies were commonly found in response to correlate students' evidence-based practical education and professional career preparation.
- **Level of research students:** Studies have been conducted on undergraduate, postgraduate, and postgraduate with several years of practice experience, early career researchers, or a mix of two or three groups. The pattern of experiences was different according to their qualification and experiences.
- **Students and supervisors as participants:** Few mixed studies have been found where the authors investigated the supervisors' experience with their supervision and students' activities and performances as well as the student's experiences. The majority of the studies were based on the student's experiences. However, their physical and mental problems were not widely discovered.
- **Bangladesh perspectives:** No study has been conducted regarding rehabilitation professionals in Bangladesh. But Matin's study conducted a thesis on FCPS students regarding their research experience.

CHAPTER III: METHODS

3.1 Study Design

3.1.1 Method

The study was conducted by following qualitative research design. In qualitative research, the ideas, understanding, viewpoints, or personal experiences can be identified easily. Moreover, this design provides deep insights by asking questions to the participants (Creswell & Poth, 2018). So, the student investigator followed the design to identify a wide information regarding the past experience of interns' undergraduate research conduction.

3.1.2 Approach

The student researcher utilised the phenomenological approach of qualitative design for conducting the study. Qualitative phenomenological research design aims to discover what a particular experience means to a group of people and how they experienced it. This approach is used to study lived experience, gain a deeper understanding of how human beings think, and expand their knowledge about a phenomenon (Creswell & Poth, 2018). This study participants had all experienced the same phenomenon stated in the research question, which facilitated the student researcher to get a common understanding. Through this study procedure, the student researcher provided a common meaning of the participants' experience and discussed the essence of experience in a systematic procedure (Alase, 2017).

3.2 Study Setting and Period

3.2.1 Study Setting

This study was conducted at the Centre for the Rehabilitation of the Paralysed (CRP), Savar considering the availability of participants based on inclusion criteria. The interview was conducted in a quiet area at the CRP library and the intern's clinical workplace area.

3.2.2 Study Period

The study period was from April 2022 to February 2023 and data collection period was from November 01, 2022 to November 31, 2022.

3.3 Study Participants

3.3.1 Study Population

Nine participants responded to this study. Participants are from the Departments of Occupational Therapy, Speech and Language Therapy, and Physiotherapy and currently working as interns at the CRP. Among the recently graduated interns from these three departments, 98 have done their undergraduate research and the student researcher has collected three from each department. As Prosthetics and Orthotics department started their course on 20th October 2018, their research curriculum is not completed yet. So, the student investigator could not include the students from this department.

3.3.2 Sampling Technique

Participants were selected by following the convenience sampling strategy to obtain information from available participants. Convenience sampling is a very common way of sampling, where participants or data are selected based on accessibility rather than some other criterion (Patton, 2015). The student researcher selected the interns from

rehabilitation disciplines who were available at that moment in the study setting at CRP.

3.3.3 Inclusion Criteria

- The interns who recently completed graduation from the Department of Occupational Therapy, Physiotherapy and Speech and Language Therapy of Bangladesh Health Professions Institute, affiliated with the University of Dhaka under the Faculty of Medicine and currently working as interns at the CRP.
- Interns who had the experience of conducting undergraduate research as part of the partial fulfilment of their degrees.
- The intern had the utmost one-year experience of graduation completion.

The student researcher selected the newly graduated professionals who are working as interns because the student researcher considered avoiding memory bias. Student researchers considered this bias to get a spontaneous response from the participants. Because it is more likely could occur that those who have conducted undergraduate research over a long duration of time may not remember the aspects of what happened. So, for accurate information gathering for the study, the student researcher selected newly graduated interns (Sutherland et al., 2015).

3.3.4 Participants Overview

Table 3.1 shows the overview of the participants:

Table 3.1*Participants overview*

Pseudo name	Age (in years)	Gender	Undergraduate research design	On time thesis completion
Elli	24	Female	Qualitative Phenomenological study design	Yes
Ira	24	Female	Quantitative Cross-sectional study	Yes
Fahim	26	Male	Qualitative Phenomenological study design	Yes
Meef	25	Female	Quantitative study design	Yes
Joey	24	Female	Quantitative Quasi Experimental study	Yes
Pranay	25	Male	Qualitative Phenomenological study design	Yes
Sarah	25	Female	Quantitative Cross-sectional study	Yes
Luna	24	Female	Quantitative Quasi Experimental study	Yes
Aman	25	Male	Quantitative Cross-sectional study	Yes

Participants reported collecting data with different groups of people such as adults and children with different physical disabilities, caregivers, and health professionals. The student investigator did not display this detailed information in the table due to the possibility of the participants' identity disclosed.

3.4 Ethical Considerations

The student investigator conducted every step according to Helsinki Act's guideline (World Medical Association Declaration of Helsinki, 2014).

- **IRB approval:** The student researcher got ethical approval from the Institutional Ethical Review Board through the Occupational Therapy Department, BHPI. IRB clearance number: CRP/BHPI/IRB/09/22/645.
- **Informed consent:** The student researcher provided adequate information to the participants through an information sheet and confirmed the written consent for research participation.
- **Withdrawal of consent:** Participants were informed about withdrawal consent by which they could withdraw their participation within two weeks from the data collection date.
- **Confidentiality:** The student researcher and the supervisor had access to the recorded data. The identities of the participants were not revealed to anyone except the supervisor which was also mentioned in the information sheet. The participants were assured that their identities would be kept private for future uses such as report writing, publication, conferences, or any additional written content, discussions, and presentation. All data were stored in a locked folder on the student researcher's computer.
- **Risk and Beneficence:** There were no risks and monetary or any other benefits for participating in this research and it was clearly stated in the information sheet.
- **Unequal Relationship:** The student researcher's academic institute and participants' academic institute were the same. So, there was a high possibility of a

power relationship between the investigator and the participants. To minimise this power relationship student investigators strictly followed the Helsinki guideline of ethical principles for research involving human subjects. Additionally, the student investigator followed the interview guideline with some proving questions and did not ask any kind of leading question (World Medical Association Declaration of Helsinki, 2014).

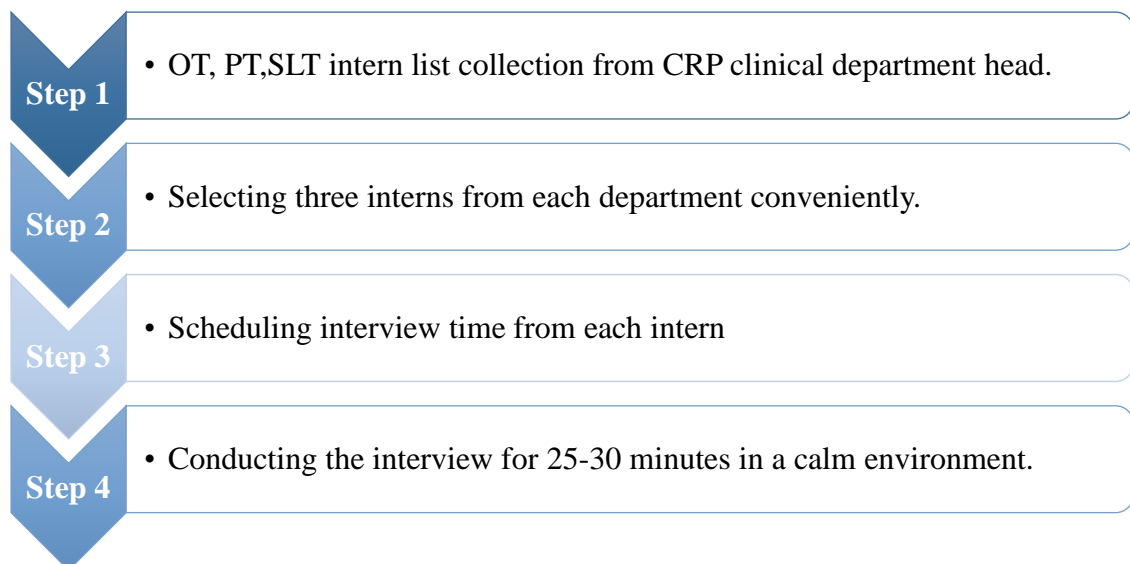
3.6 Data collection process

3.6.1 Participants Recruitment Process

As already reported previously, nine interns were recruited to conduct this study. Figure 3.1 shows the participant recruitment process:

Figure 3.1

Participants recruitment overview



3.6.2 Data Collection Method

Student researchers collected the data through semi-structured interviews in a face-to-face manner. A semi-structured interview is a form of data collection method that entails asking questions within a pre-set thematic framework (Liamputtong, 2017). In

this study, the student investigator conducted a semi-structured interview with a series of open-ended questions based on the topic areas the study had to cover (Mathers et al., 2011). In semi-structured interviews, the interviewer also has the freedom to probe the participants to elaborate on the original response or to follow a line of inquiry introduced by the investigator (Liamputtong, 2017). The student researcher conducted the whole interview in the participant's 1st language Bengali for collecting in-depth information. The interviews lasted between 25-30 minutes on average. The interviews were recorded on the mobile phone. Student investigator conducted the study by following the thesis domain with consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews (Tong et al., 2007). The student researcher conducted field test before starting data collection with three interns who had experience in conducting undergraduate research. The field test was conducted to obtain the responses to the pre-formulated questions in the interview guide. Some significant features such as peer support, online supervision, data collection area-based cooperation, and experience were included after the field test. Particularly, the understanding of the responding patterns, the acquisition of specific information, and the addition of questions were updated following the field test.

3.6.3 Data Collection Instrument

A self-developed interview guide was developed to collect the data. An interview guide is a document that allows to structure the participants' interviews. It assists in determining what questions to ask and in what order, and it ensures consistent participant experiences (Creswell & Poth, 2018). For this study, an interview guide was developed by following literature review findings, suggestions from the field test, and the supervisor's guidance. The interview guide included the area of participants' methodological preparation, their research conduction settings, the experience of

supervision, and data collection experience. The interview guide also covered the experiences of several skills acquisition and successful study conduction by overcoming all challenges.

3.6.4 Field Note

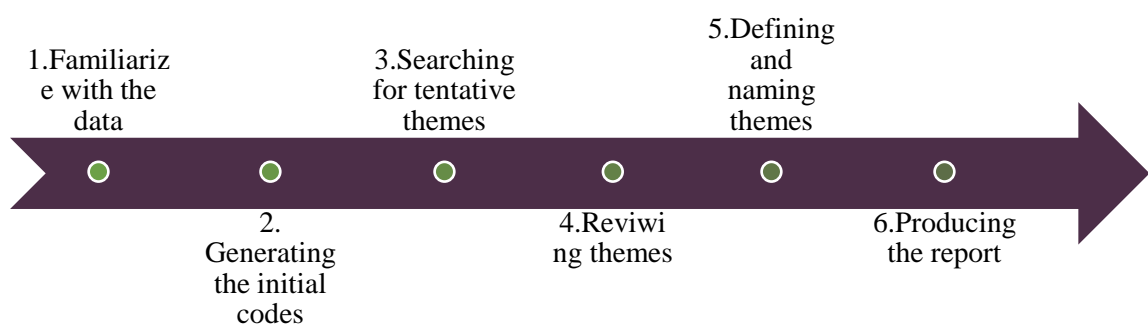
The student investigator observed the participants' facial expressions throughout the interview and noted them down. Some participants provided some information after the interview that was significant for the study. Since the information were short in length, instead of recording, the student researcher noted them in diaries.

3.7 Data Analysis

Braun and Clarke's six steps of thematic analysis were used to analyse this study. Student researchers maintained the six steps from data familiarising to writing up the result section (Braun & Clarke, 2019). Each step is given below with detailed procedure marinating description:

Figure 3.2

Braun and Clark's six step of data analysis



Step 1: Making Familiar with the Data

The student researcher conducted the interview, completed in transcripts verbatim, and translated the interviews into English. At this stage, the student researcher made some notes and discussed them with the supervisor. The supervisor provided instructions on

the process of identifying the highlighted information from each transcript. Then the student researcher read and re-read the information and noted down the initial ideas.

Step 2: Generating the Initial Codes

In the second step, the student investigator took some instructions for developing codes. The student investigator highlighted the interesting codes with colour. To keep the track of code, the lemon-yellow colour was used to highlight it. The student investigator updated and modified the code after the discussion with the supervisor.

Step 3: Searching for Tentative Themes

In this step, the student researcher listed down the codes of different transcripts on different pages for developing a tentative theme. Then the student investigator marked similar codes with the same colour.

Step 4: Reviewing Themes

In this phase, the student researcher made a group by separating those with the same colour code. The student researcher found some themes that did not function well as meaningful interpretations of the data. The supervisor read the data associated with each theme and considered whether the data did support it. After that, the student researcher made sure that similar codes were assured from each transcript.

Step 5: Defining and Naming Themes

In the fifth step, the student researcher analysed data by presenting a detailed analysis of the thematic framework. After checking and re-checking the codes the student researcher identified and listed the major findings and sub-findings. Then the student researcher finalised seven themes by discussing them with the supervisor. Each theme and sub-theme were expressed concerning both the dataset and the research question. The name of the themes and sub-themes were generated with supervisors' several feedback.

Step 6: Producing the Report

In the final step, the student researcher produced the report with verbatim quotes in the result section (see Chapter IV: Result for details report).

3.8 Trustworthiness

Trustworthiness or rigor of a study refers to the degree of confidence in data, interpretation, and methods used to ensure the quality of the study (Fossey et al., 2002).

Trustworthiness was maintained according to each step of methodological rigour and interpretive rigour. The details of each step have given below (Fossey et al., 2002):

3.8.1 Methodological Rigor

- **Congruence:** Congruence is the selected fit methodology that aligned with the research design (Fossey et al., 2002). The study was conducted through the phenomenological approach of qualitative design abiding by the aim and objectives of this study. Design is considered a fit because by following this research design, the student researcher explored the experiences of undergraduate research from the participants (See section 3.2 Research Design for details).
- **Responsiveness to social context:** Responsiveness to social context is too close to the proximity of the participants to recognise the real situation. Student researchers meet the participant's real state of research conduction experience at the participant's workplace, CRP, or in a quiet place in the workplace area through the face-to-face interview (See section 3.3 Study Setting for details).
- **Appropriateness and adequacy:** Appropriateness and adequacy are the frameworks of the suitable data-gathering method through sampling and data collection process according to the study (Fossey et al., 2002). In this study, a convenience sampling strategy was used to select the most suitable participants. A face-to-face interview was conducted among nine participants during the data

collection period. Participants were recruited conveniently by the student researcher considering easily fulfilment of the study's aim and objective (see sections 3.4 and 3.5 Sampling strategy and participants overview for details).

- **Transparency:** Transparency is the process of data gathering and analysis by giving the privilege to the participant knowledge (Fossey et al., 2002). After completing data collection, the student researcher analysed data by following Braun and Clarke's six steps with the close supervision of the supervisor. The supervisor simplified each step of analysis from coding to developing theme sub-theme with practical examples and regular inquiry of interviewed data (see section 3.7 Data collection method for details).

3.8.2 Interpretive Rigor

- **Authenticity:** Authenticity is the presentation of findings and interpretations of participants' views (Fossey et al., 2002). The authenticity was maintained by using verbatim quotes of participants' statements among themes and sub-themes. The demographic data and participants' range of voices and views were gathered by the student researcher. Though member checking was a very important segment for maintaining authenticity, the student researcher was unable to conduct it for a limited time (see section 3.8 Data analysis for details).
- **Coherence:** The findings of the study has conducted by following Braun and Clark six step data analysis. The supervisor facilitated the student researcher to select the proportion from the overall findings. Finally, the student researcher completed a written result with several feedbacks from the supervisor (see section 3.8 Data analysis).
- **Reciprocity:** All participant's voices and views were recorded to maintain reciprocity. After recording the interview, the student researcher transcribed in the

first language Bangla. Then all data were translated by some volunteers ensuring confidentiality through a translation contract form. Then the academic final report was developed in English (see section 3.8 Data analysis).

- **Typicality:** As the study was conducted by following a qualitative research design, the findings cannot be generalised with another context. But student researcher described the findings for easily understand (see section 3.8 Data analysis).
- **Permeability of researcher:** The student researcher conducted every step of the thesis by discussing and following supervisors' guidelines for each step (see section 3.8 Data analysis).

CHAPTER IV: RESULTS

The results chapter provides a deeper understanding of the findings of this research. All the participants mentioned that they had to go through the same process, i.e., developing a research proposal, conducting the study in the field to writing the report. While describing these experiences, they emphasised different aspects, and based on those, six main themes with a few sub-themes have arisen. The themes are: 1) Readiness to conduct research 2) Institutional facilities 3) Data collection experience 4) Supervision 5) Family support and 6) Self-reflection. Table 4.1 shows the themes and sub-themes:

Table 4.1

Overview of results

Themes	Sub-themes
Readiness to conduct research	Mind-set before thesis conduction
	Methodological understanding
	Title selection
	Proposal development
Institutional facilities	Academic supports
	Library supports
	Additional supports
Data collection experience	Data collection tool selection
	Conducting interviews/ surveys
	COVID-19 effects
Supervision	Face-to-face supervision
	Online supervision
Family support	Mental support
	Financial support
Self-reflection	Lessons learned
	Research related career plans
	Overcoming challenges

4.1 Theme One: Readiness to Conduct Research

The participants got their first exposure to research methodology during their third year of study. However, they conduct their research under supervision in the final year. They highlighted their readiness in various ways, i.e., setting their mind before thesis conduction, methodological understanding based on classes from the academic institute and online courses, title selection, and proposal development. The four sub-themes are given below:

4.1.1 Sub-theme one: Mind-set before Thesis Conduction

Participants expressed that they needed to set their mind before conducting their research. Five interns stated that they started their research with a low level of confidence and nervousness for lack of knowledge about the process. Meef expressed during talking about her study preparation:

"This is my first and honours-level research. So, for me it was a bit of... (thinking for a while) nervousness and I had to keep a bit of courage myself. So, in that case, I would say that I was little prepared."

Moreover, four participants reported that they had some confidence to a certain extent for previous experience. The reasons behind these confidences were volunteer involvement with academic teachers or international research groups, excitement for getting research as merit basis, and their passionate towards the subject. Aman emphasised that his previous experience of engagement in research activities encouraged him to continue his work. He stated:

"Apart from my undergraduate research, I worked as an assistant of my academic teacher's research. I was engaged and helped during their data

collection and data entry...I acquired some good ideas on these segments. I also worked on a mixed research project with the United Kingdom's Leonard Cheshire Group. That is why in the case of my research, I did not have to give extra effort."

Participants reported that if they want to conduct research in future, they will be mentally ready for the work despite their lacking in methodological understanding.

4.1.2 Sub-theme two: Methodological Understanding

Six interns expressed that they took self-preparation on their desired methodology before selecting their research topic. They were keenly interested to conduct their research on that methodology. But some participants' preferred methodology was changed keeping in line with their study. Aman expressed his feelings while talking about his methodological changes as:

"At first, I wanted to perform my research on Randomised Control Trial. So, I had a lot of preparations on that. But after my final title selection, the methodology changed to cross-sectional study according to my thesis... After that I started to get new preparation on cross-sectional study with my supervisors' guideline and motivation."

Two participants reported that they accomplished an online course regarding their study methods. Moreover, watching YouTube tutorials for better understanding arose from participants. Joey mentioned about her online course that "I did an online four-month course. I have learned the details of methodology through that course."

4.1.3 Sub-theme three: Title Selection

According to interns' statement, several participants' topic ideas arose from several experiences. One of them got the idea from clinical basement placement activities, and two of them had their idea from random article reviewing. Besides subject teacher hints, curiosity and interest departmental service focusing on unexplored areas were the sources of topic selection ideas among the participants. During explaining title idea, Joey described:

“During a lecture on a topic during third year, suddenly the lecturer stated that you may conduct research with it or anything else as a content of this topic... Later, I went to the library and looked it up... For me, that seemed more appropriate. Because the topic was quite interesting and it has never been studied previously in Bangladesh.”

Title modification was one of the most common experiences that maximum interns reported. One participant, Fahim disclosed that he was determined to keep the title on his area of interest which was a tabooed topic. He stated:

"Teachers were little concerned that the way I set the questions for this research, whether I could collect data or whether the persons would give me data... After the field test and translation and transcript of the information and demonstrated to the supervisor, it was clear that we can dig deep into this topic."

4.1.4 Sub-theme four: Proposal Development

Some participants described that developing a concise research proposal was quite challenging. A resembling finding has arisen from them about proposal development

during the COVID-19 lockdown situation. While talking about the participant's proposal development, intern Elli expressed:

"We got online classes from getting the guidelines for proposal submission to finalising the proposal before presentation. ...We E-mailed our soft copies to the subject teacher. Then she specifically provided corrections through E-mail where we need to fix, which lines need to be fixed. And then she cleared our mistakes through ZOOM."

4.2 Theme- Two: Institutional Support

Participants described that they got academic, library, and additional support from the institution.

4.2.1 Sub-theme one: Academic Support

Participants reported multiple academic supports such as lectures on research methodology, IRB approval, subject teachers' guidelines, thesis process summarisation on each topic, and departmental help for data collection. Ira stated that she got departmental help during communicating with the in charge of her data collection area. She stated:

"I got lots of help from the department when I faced some difficulties during data collection permission. At that time, I got academic help through contacting the in-charge and managing the permission."

4.2.2 Sub-theme two: Library Support

Most of the participants reported that they got enough books support, journals support, and staffs help through library facilities. Joey stated that: "I needed some experimental

research samples which were done by physiotherapy students. So, I accessed the thesis books with the help of the library staffs."

They also expressed that they faced difficulties regarding working in the library for insufficient internet access especially when many students worked together. Furthermore, participants did not emphasise or clearly stated about the access to international journals through library.

4.2.3 Sub-theme three: Additional Support

Participants stated that they needed comfort and experts' suggestions to understand critical sections. Interns shared that information about the participants from clinical staffs, suitable environment creation for data collection, help from the in-charge, and schedule management with participants during therapy time were the main supports they got. Participants sought help from their classmates who were using the same method or scale. Fahim stated that he got supportive instructions from a health professional which was helpful to develop the interview guide by keeping it consistent with the aim and objectives of the research. He stated:

Before developing the interview guide, I went to a health professional of the MDT team with whom I did not have teacher-student relationship. I discussed with the professional about my topic and asked how should I organise my questions to get specific information. Then he gave me some guidelines which helped me to develop the plan of my interview guide."

4.3 Theme-Three: Data Collection Experience

Participants shared a wide range of experiences during data collection of their study conduction period. The common difficulties they have faced were data collection tool selection, and accessing participants.

4.3.1 Sub-theme one: Data Collection Tools Selection

Most of the participants who conducted quantitative research shared common difficulties including data collection tool or scale selection, accessing scale, and data analysis especially binary logistic regression. They reported a f lack of practical understanding regarding these. Sarah described her scale accessing experience as:

"I realised during scale selection that I was the first who used this scale at my institute. So, in the case of the translation or excessing the scale, few more difficulties and challenges I faced... I used two scales mainly, but while combining the two scales, I had to face some problems during the result analysis and regression."

Besides, participants who conducted qualitative research stated that they faced difficulties during the development of the interview guide and repetitive change of questions to achieve their study objectives after field test. Pranay stated "About seven to eight times I worked on developing my questions...Although initially my questions were very scattered. Later in order to get the exact findings, it was modified twice after the field test."

4.3.2 Sub-theme two: Conducting Interviews/ Surveys

Some interns expressed that they had to face participants' unwillingness and misconceptions during conducting their interviews and surveys. Luna stated, "A few

patients who were a little older were afraid that why I was taking data or taking signs. Whether, I was going to take land or something like that." Meef added about her data collection experience as:

"I have taken data from a group of health professionals. So, in that case, it was very difficult to manage their time.... I had to manage every individual professional's permission and time...Some of them communicated very well. On the other hand, there were some whom I did not get a chance to talk and could not manage the time even after many attempts."

Furthermore, the interns expressed that during data collection they have to face reluctance of data sharing.

4.3.3 Sub-theme three: COVID-19 Effects

COVID-19 made the participants reluctant to both physical and mental exhaustion due to research completion uncertainty. Thesis conduction time reduction, participants exclusion, participants' unwillingness for fear of COVID infection, submission through online guidelines, and supervision interruption were the findings from the experienced participants. Luna stated:

"The entire lockdown was a hindrance... I do not get the same number of patients that I might get at the normal time. I think if I had a little more time, I could have collected more data between the pre-test and the post-test which could have been better."

4.4 Theme-Four: Supervision

Each participant conducted their undergraduate research under the guidance of a supervisor. They got their supervisors' guidance through face-to-face or online. They also expressed their relationship with their supervisor.

4.4.1 Sub-theme one: Face to Face Supervision

Participants reported numerous supportive experiences from supervisor. They got guidelines with the topic-based example, planned schedule for accomplishing the thesis, and extra supervision. During expressing the experience of supervision, Luna stated that:

"There were four types of students under my supervisor who conducted different types of research design study. Since I conducted a quasi-experimental study, I had to collect some books from the library when supervisor asked me to read those books. Then sir explained even after the official time of 5 pm, he used to give time whenever I went up to 6/7/8 pm."

Another noticeable finding from few interns' statements was that some supervisors were unable to provide sufficient supervision for their workload and time limitation. Sometimes they worked with co-supervisor to ensure the students adequate supervision. Elli stated:

"There are four or five students along with fieldwork students are given under some supervisors who had lots of non-academic responsibilities. So, I think one or maximum two students should be given under them. Either way, supervising with a co-supervisor will be beneficial for the students."

4.4.2 Sub-theme two: Online Supervision

Mainly participants got online supervision during the lockdown time. ZOOM was the most common online platform used for supervision. Besides, interns stated that they got personal supervision over the phone and WhatsApp. They used to submit their documents through E-mail. They expressed that they got individual and group, two types of online supervision from their supervisor. Some of them stated that during group supervision, they had to face some privacy troubles. Joey told "In a group supervision, there were six people in the team. It had been seen that I could not state my problems in that way. But it appeared that I had more to know or more to ask."

4.5 Theme- Five: Family Support

This study participants mainly focused on family's mental and financial support.

4.5.1 Sub-theme one: Mental Support

Participants stated that their family members encouraged them even though did not have a clear understanding about research. They also made regular inquiries during data collection travel. Pranay told "They were not concerned about research. But later I informed them about our curriculum at home, they encouraged me to conduct and publish good quality research for abroad higher study."

4.5.2 Sub-theme two: Financial Support

All participants except one stated that their family was the main economic source behind their study conduction. Participants reported that they had no source of finance from institute. Even one participant Luna, told that she had to manage an extra accommodation for data collection during the lockdown. Luna said:

"During the lockdown, I could not come for data collection. So, my father came and managed a room for me. Then I collected data by staying there. Financially full support is usually given from home."

4.6 Theme- Seven: Self-reflection

Undergraduate research is the first step to meeting the practical skills of research students. They reflected on their self-reflection by describing the experiences of skills development, lessons learned, and overcoming challenges throughout the process.

4.6.1 Sub-theme one: Lessons Learned

Participants shared that they accomplished basic research skills such as theoretical knowledge, methodological understanding, new scales, and professional institutes exploration through data collection, patience development, time management, and formatting. Elli stated her skills development as:

"Undergraduate research is the first hands-on skill at the undergraduate level. So how to find literature, how to collect data, how to communicate with the supervisor, and how to develop results, all the initial steps involved with conducting research are the steps I have learned at my undergraduate level."

4.6.2 Sub-theme two: Research Related Career Plans

Participants reflected their constructive interpretation of planning for the future regarding research conduction learning. They reported that they all have publication planning to articulate their learning. Besides the presentation at international conferences and seminars, findings implementation in clinical practice, and abroad higher study was the future planning of the interns. Joey described when talking about her planning:

"First of all, when I will publish it in a journal, it will make my CV heavier. Publication matters a lot whether it is a lecturer or clinical side or NGO... The study is not limited to the undergraduate level. I will do my master's next and MPhil. After that when I will go for any job, they would see whether my publication is still in progress, or I am doing research. That is much necessary for every profession. Because in abroad, they are much enriched in this regard."

4.6.3 Sub-theme three: Overcoming Challenges

Participants reported the execution of problem-solving skills for research setbacks during conducting their research. Supervision from the supervisor beyond the allotted time, setting a deadline for each step, and working autonomously according to research ethics were the overcoming techniques arisen from the interns. When talking about workload management, Elli stated:

"Since my research was qualitative and qualitative research workload was also much. So, I started very actively in my research from the beginning. But when it looked like the work was never going to get done, supervisor would set me a deadline. After that, whenever the tasks were given, I tried to do them on time."

For new undergraduate researchers, they suggested reviewing interest area-based articles, taking topic-based lesson prior to clear understanding as part of preparation, timely task completion, maintaining a relationship with the supervisor, and discussing with previous students. Fahim suggested to the students during conducting sensitive topic research "It is best, to discuss first sensitive issues research with someone expert in that area. Because the person can explain very well at which level of data can be achieved and how."

CHAPTER V: DISCUSSION

This chapter describes the study findings concerning what was already investigated in previous research with new understanding or insights that emerged as a result of this research. This study was conducted to explore the experiences of rehabilitation professionals graduated from the BHPI concerning conducting their undergraduate research.

In this study, the participants were mostly in the age ranges of 24-26 years. However, previous literatures mostly include post-graduated and early career researchers with five years of work experience who were between 26-36 years old (Abiola & Ajao, 2022; Ingrassia et al., 2014; Laustsen et al., 2021). Global literature shows an important finding that there have been various studies on physiotherapy with medical and other health professionals' research experience. On the other hand, a very limited number of studies have been conducted based on Occupational therapy and Speech and language therapy department. Concerning Bangladesh context, a study was conducted with 41-65 years old early career health professional researchers and postgraduate students who were doing dissertations in FCPS second/ third part in Bangladesh which added some perspective in this field (Matin & Khan, 2017). The lack of participants' required experience on assigned tasks, as well as the significance of regular meetings with supervisors, were prominent findings that support this current thesis. Some studies show that gender, especially male has made an important impact on students' perceived readiness for research. They are more likely to be prepared than their female counterparts. Despite increased female participation rates in higher education, research shows that the ratio of women's advancement continues, and research careers are

limited for women, particularly in academia and the fields of science, technology, engineering, and mathematics (Bovijn et al., 2017; Shaw et al., 2013). However, this result contradicts the findings of this study because the majority of the participants in this study were female and had an effective plan for their studies. They also desired to make their career based on research and preparing them for conducting new studies. A possible reason could be that in Bangladesh females work more in number than the males in the health industry (WHO, 2018).

Those who have previous research experience felt more motivated and worked better during conducting their further research (Abiola & Ajao, 2022; Laustsen et al., 2021). There was a strong connection between individuals who studied research methodology as undergraduates and with further involved in research (Abiola & Ajao, 2022). Therefore, we can assume that the graduates from BHPI will feel more motivated and readier for the further research works either as part of education or career.

A mix experience arose in this study concerning supervision adequacy. Some participants received guidelines with the topic-based example, advanced work pattern before starting the thesis, and extra supervision for doubt clearance. On the other hand, some participants could not manage enough time with their supervisor. Previous studies reflected the information that how research mentors can be the best support for students (Coetzee & Kruger, 2018; Cooper et al., 2020; El Achi et al., 2020). Contrarily, 74.4 % of physiotherapists believed that their research conduct was very challenging for inadequate mentorship (Abiola & Ajao, 2022). But this study included supervisors as well who reported that they are providing enough supervision which means there was a difference of opinion between the supervisors and students. So, as the current study only included students, further study could be done to investigate the experience of supervisors' regarding supervising undergraduate research students. The current study

reported a similar finding in consistent with previous relationship that interpersonal relationship between participants and their peers encourage to continue the research process (El Achi et al., 2020). In addition, this study result showed that the support system from the subject teacher, friends, parents, and juniors was potentially involved to improve student fluency in completing the thesis.

Previous studies investigated some common barriers. The top three were lack of financial support, lack of statistical support, and poor research training and skill (Abiola & Ajao, 2022; Ingrassia et al., 2014; Uebel et al., 2021). Most of the supervisors (84.7%) and a reasonable number of students (54.1%) of FCPS degree in Bangladesh agreed about the limited resources of their institutes for thesis works (Matin & Khan, 2017). This study participants stated about inadequate institutional internet facility during their study conduction period.

Though this study described only the struggles during their data collection, scale test, and analysis, some authors investigated the specific psychological and physiological complications and the effects on conducting research. Cooper et al., 2020 described how depression would cause participants demotivation, which would often negatively affect their research productivity. Therefore, this study findings suggest conducting a further study emphasising the mental health status of the BHPI students during the research process. Some other authors found that some students faced extra stress from family to finish their research (Cooper et al., 2020; Ermiati et al., 2021; Matin & Khan, 2017). But in this study, it can be seen that despite not having much idea about research, the family did not give any kind of extra pressure. Instead, they took regular updates and provide adequate mental and financial support.

As mentioned in the previous literature, participants improved creative thinking skills, computer-based knowledge and skills, oral presentation skills, organisational skills, and time management skills (Azmat & Ahmad, 2022; Bridge et al., 2018; Coetzee & Kruger, 2018; Ermiati et al., 2021; Higginson, 2019; Jones & Lerner, 2019). The current study finds the similar result on the ability to think creatively about literature finding, methodological understanding in relating with their thesis. An interesting finding from literature is that allied health professional students are generally more likely to engage in voluntary research than medical students. These students were also more likely to show the greater tendency to indicate an interest in future research participation. (Bovijn et al., 2017). Same result also reflects this study because this study participants also showed their interest in further research conduction. There are similarities between some authors findings and this studies about recommendations on undergraduate research conduction. These are: research methodology incorporation in undergraduate and postgraduate curricula, and provision of adequate funds for academic thesis works. Additionally, the arrangement of adequate research facilities and resources and the introduction of meeting schedules for supervisors and students were also included (Azmat & Ahmad, 2022; Bovijn et al., 2017; Cooper et al., 2020).

CHAPTER VI: CONCLUSION

6.1 Strengths and Limitations

6.1.1 Strengths

- The study was conducted by following qualitative research design which worked to explore the deep insight of the interns' undergraduate research experiences.
- Participants from department of Occupational therapy, Physiotherapy and Speech and Language therapy were selected to investigate the variation of each departmental thesis conduction process.
- There was a variation in participants' background in their undergraduate research methodology, for example: Cross-sectional study, Quasi Experimental study and Phenomenological study design. This portrayed different kinds of experience in this study which were the key strength of this study.
- There was variety in topics which provided in-depth information about participants positive and challenging experiences.
- Student researcher maintained the thesis domain with consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews (Tong et al., 2007).

6.1.2 Limitations

- The generalisability of the study findings is restricted for including limited number (nine) of participants' and potential bias while they responded to the interview questions.

- The study participants were selected through convenient sampling. So, this study sample cannot be the full representative of the total population for including the participants' who were easiest to reach.
- If this study conduction experience was not the student investigator's first hands on experience, research process expertism would have more enriched the data.

6.2 Practice Implication

This thesis can affect the system of undergraduate research conducted in the academic sector of BHPI. Firstly, BHPI can intensely focus on the methodological problems of the students from the very beginning of their third year. Therefore, students and supervisors can make structured schedule plans throughout the study by realizing the importance of adequate supervision. It was seen that participants had to face some privacy problems during the COVID-19 online supervision period. However, apart from COVID-19, online supervision may be needed for other reasons. So academic supervisors can be prepared in advance. In addition, BHPI would be more concerned about students' difficulties during data collection. Institutions can also understand the research council's importance from the participants' recommendations. In addition, the institutions will get aware and may take steps to improve internet and database access journal facilities.

6.2.1 Recommendation for Further Research

- Further study can be conducted including the supervisor's experiences in conducting undergraduate research.
- Study can be conducted to identify the mental health and physical health of students during conducting undergraduate research and overcoming processes.
- Further study can include the postgraduate research students of BHPI.

- Further research can be conducted with a larger group of students in professionals graduated from different institutes including Occupational therapy, Speech and language therapy, and Physiotherapy to identify the factors related to research experiences in Bangladesh.

6.3 Conclusion

This study aimed to explore the experiences of rehabilitation professionals of BHPI regarding conducting their undergraduate research. According to this study's findings, almost all participants were dedicated to fulfilling their undergraduate research. Third-year academic courses formed their basic research knowledge. Though they simultaneously showed positive experiences and hardships, they completed their thesis on time. Some participants recommended that the department enhance the involvement of students in research conduction as volunteers or assistants before conducting their research. This system will minimise the difficulties in the research process. They also recommended developing a research council to familiarise the junior students with basic research knowledge. Most of the participants complained about the institute's limited internet support. Moreover, participants encountered a variety of psychological difficulties during the thesis course. But after completing the thesis, participants realised they had learned some important lessons and hoped these skills would translate well in their future endeavours.

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APPENDICES

Appendix A: Ethical Approval Form



Ref

CRP/BHPI/IRB/09/22/645

Date

28th September, 2022

Monisha Chakraborty
 4th Year B.Sc. in Occupational Therapy
 Session: 2017-18, Student ID: 122170289
 BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Subject: Approval of the thesis proposal "Experience of Rehabilitation Professionals Regarding Conducting Undergraduate Research" by ethics committee.

Dear Monisha Chakraborty
 Congratulations.

The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application to conduct the above-mentioned dissertation, with yourself, Arifa Jahan Ema 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 determine "to explore the experience of newly graduate rehabilitation professionals of BHPI about conducting their undergraduate research". The study involves use of a self-developed interview guide to explore the experience that may take approximately 30 to 45 minutes to answer 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,

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

Appendix B: Information sheet (English version)**Bangladesh Health Professions Institute (BHPI)****Occupational Therapy Department**

CRP, Chapain, Savar, Dhaka-1343

Research Title: Experience of Rehabilitation Professionals Regarding Conducting Undergraduate Research: A Qualitative Study.

Researcher Name: Manisha Chakraborty, 4th Year, Department of Occupational Therapy, Roll: 35

Supervisor: Arifa Jahan Ima, Lecturer, Department of Occupational Therapy, Course Coordinator, MSc in Occupational Therapy, Bangladesh Health Professions Institute (BHPI), Savar, Dhaka-1343

I am Manisha Chakraborty, inviting you to participate in my research project. Before you decide you need to understand why the research is being done and what it would involve for you. Please take time to read the following information carefully. Ask questions if anything you read is not clear or if you would like more information. Take time to decide whether or not to take part.

Who am I and what this study is about?

I am Monisha Chakraborty, 4th year student of Bangladesh Health Professions Institute (BHPI) under the faculty of medicine, University of Dhaka, an academic institute of Centre for the Rehabilitation of the Paralysed (CRP), Savar, Dhaka. As a part a of Occupational Therapy course curriculum, I'm going to be conducting a study. The title of my study is "Experience of Rehabilitation Professionals Regarding Conducting Undergraduate Research: A Qualitative Study". The aim of the study is to explore the

experiences of rehabilitation professionals who graduated from the BHPI in conducting their undergraduate research.

What will taking part involve?

The study will conduct to find out the intern working in rehabilitation discipline positive experiences and the challenging experiences during conducting the undergraduate research. The research will be done through a semi structured interview over a period of time through an interview guide. An interview will conduct for 30 to 45 min with some questions and record by tape recorder.

Why have you been invited to take part?

According to the inclusion criteria of the thesis, the study will conduct with the intern working rehabilitation discipline of Occupational Therapy, Physiotherapy and Speech & language therapy having maximum one-year experience after graduation. So, you have been invited to take part in this study for meeting up these criteria.

Do you have to take part?

Your participation in the research program is completely optional. You have the opportunity to withdraw participation if you do not wish to participate voluntarily. Your workplace or professional activities will not be affected in any way by your decision to participate or not to participate in the research program or to subsequently withdraw participation. You may withdraw your participation in the study within 2 weeks of data collection.

What are the possible risks and benefits of taking part?

You will not receive any direct benefits for participating in the study. In addition, it is expected that there are no risks and benefits in participating in the research program.

Furthermore, by conducting research at the undergraduate level, students can acquire skills related to the methodological process of research-related inquiry. This includes data collection and analysis, recording of significant data, and subsequent analysis and interpretation of that data according to the rehabilitation protocol defined by the academic process. By exploring and analysing the experience of conducting undergraduate research in the rehabilitation profession, some common and rare experiences may emerge. Through which the importance of research involvement at the undergraduate level of the students, the understanding of the overall research activities of the post-graduate research and the influence of discretion in the career as a healthcare professional will be revealed.

Will taking part be confidential?

The confidentiality of all your records will be maintained with utmost privacy. All details will be kept in a confidential database which will be accessible only to the researcher myself and my supervisor for research purpose.

How will information you provide be recorded, stored and protected?

Research data collection will be done subject to your consent at a place and time as per your convenience. Your identity will not be disclosed anywhere without your consent. All your information will be stored on a password protected laptop. Also, your name/identity will be published anonymously in blog, magazine, journal or any publication. If you have any questions about this study, please feel free to ask. I am responsible for answering any questions regarding the research and your interest in asking questions will further encourage me to conduct the research.

If you have any queries, you may contact

Monisha Chakraborty

4th year, Department of Occupational Therapy

Session: 2017-18

Cell Phone- 01629017116

Supervised by

Arifa Jahan Ema

Lecturer and Course Coordinator of MSc in Occupational Therapy

Department of Occupational Therapy

Bangladesh Institute of Health Professions

CRP, Savar, Dhaka: 1343

Cell Phone- 01753979041

Appendix B: Information sheet (Bengali version)

বাংলাদেশ হেলথ প্রফেশনস ইনস্টিটিউট (বিএইচপিআই)

অকুপেশনাল থেরাপি বিভাগ

সিআরপি, চাপাইন, সভার, ঢাকা- ১৩৪৩

অংশগ্রহণকারীদের তথ্য পত্র

গবেষণার শিরোনাম: স্নাতক পর্যায়ে গবেষণা পরিচালনার বিষয়ে পুনর্বাসন পেশায় কর্মরত ইন্টার্নদের অভিজ্ঞতা।

গবেষকের নাম: মনীষা চক্রবর্তী, ৪র্থ বর্ষ, অকুপেশনাল থেরাপি বিভাগ

তত্ত্বাবধায়ক: আরিফা জাহান ইমা, প্রভাষক, কোর্স সমন্বয়ক, অকুপেশনাল থেরাপি স্নাতকোত্তর অকুপেশনাল থেরাপি বিভাগ, বাংলাদেশ হেলথ প্রফেশনস ইনস্টিটিউট (বিএইচপিআই), সভার, ঢাকা-১৩৪৩

আমি মনীষা চক্রবর্তী, আপনাকে আমার গবেষণা কার্যক্রমে অংশগ্রহণের জন্য আমন্ত্রণ জানাচ্ছি। সিদ্ধান্ত নেওয়ার আগে আপনাকে বুঝতে হবে কেন গবেষণাটি করা হচ্ছে এবং আপনি কিভাবে এই গবেষণায় অংশ নিতে পারেন। নিম্নলিখিত তথ্য সময় নিয়ে ভালোভাবে বুঝে পড়ুন। কারণ তথ্য পত্রে গবেষণার উদ্দেশ্য, তথ্য সংগ্রহের প্রণালীসহ সংশ্লিষ্ট অন্যান্য তথ্য আপনার অবগতির জন্য বিস্তারিতভাবে উপস্থাপন করা হয়েছে। আপনার পড়ার পর কিছু পরিষ্কারভাবে বুঝতে সমস্যা হলে বা আরও তথ্য জানতে চাইলে প্রশ্ন জিজ্ঞাসা করুন। অংশ নেবেন কি না সিদ্ধান্ত নিতে অবশ্যই পর্যাপ্ত সময় নিন।

আমার পরিচয় এবং এই গবেষণার উদ্দেশ্য:

আমি মনীষা চক্রবর্তী, ঢাকা বিশ্ববিদ্যালয়ের চিকিৎসা অনুষদের অন্তর্ভুক্ত পক্ষাঘাতগ্রস্তদের পুনর্বাসন কেন্দ্র (সিআরপি), সাভার, ঢাকার একাডেমিক ইনস্টিটিউট বাংলাদেশ হেলথ প্রফেশনস ইনস্টিটিউট (বিএইচপিআই) এ অধ্যয়নরত ৪র্থ বর্ষের একজন অকুপেশনাল থেরাপি বিভাগের ছাত্রী। বি,এস,সি কোর্স কারিকুলামের একটি অংশ হিসাবে আমি অকুপেশনাল থেরাপি বিভাগের প্রভাষক আরিফা জাহান ইমা এর তত্ত্বাবধানে একটি গবেষণা কার্যক্রম পরিচালনা করতে যাচ্ছি। আমার গবেষণার শিরোনাম হল " স্নাতক পর্যায়ে গবেষণা পরিচালনার বিষয়ে পুনর্বাসন পেশায় কর্মরত ইন্টার্নদের অভিজ্ঞতা। গবেষণাটির লক্ষ্য হল বিএইচপিআই এ অধ্যয়নকৃত পুনর্বাসন পেশায় কর্মরত ইন্টার্ন অর্থাৎ অকুপেশনাল থেরাপি, ফিজিওথেরাপি এবং স্পিচ অ্যান্ড ল্যাঙ্গুয়েজ থেরাপিতে কর্মরত ইন্টার্নদের স্নাতক পর্যায়ে গবেষণা পরিচালনার বিষয়ে অভিজ্ঞতা অন্বেষণ করা।

কোন কোন বিষয় গবেষণায় অন্তর্ভুক্ত থাকবে?

বিভাগীয় কোর্স কারিকুলামের অংশ হিসেবে প্রতি বছর অকুপেশনাল থেরাপি, ফিজিওথেরাপি এবং স্পিচ অ্যান্ড ল্যাঙ্গুয়েজ বিভাগের ছাত্রছাত্রীরা স্নাতক পর্যায়ে একটি গবেষণা কার্যক্রম পরিচালনা করে থাকে। এই গবেষণা পরিচালনার সময় তারা বিভিন্ন ধরনের অভিজ্ঞতা অর্জন করে থাকে। তাদের এইসব ইতিবাচক অভিজ্ঞতা এবং বাধাসমূহ নিরূপণ করার জন্যই গবেষণাটি পরিচালনা করা হবে। গবেষণাটি একটি প্রশ্নপত্রের মাধ্যমে নির্দিষ্ট সময়ের মধ্যে একটি সুগঠিত সাক্ষাৎকারের মাধ্যমে সম্পন্ন করা হবে। ৩০ থেকে ৪৫ মিনিটের জন্য কিছু প্রশ্নের মাধ্যমে সাক্ষাৎকারটি নেওয়া হবে এবং মোবাইল ফোন দ্বারা রেকর্ড করা হবে।

গবেষণায় কেন আপনাকে অংশ নিতে আমন্ত্রণ জানানো হয়েছে ?

গবেষণায় অন্তর্ভুক্ত মানদণ্ড অনুসারে, অকুপেশনাল থেরাপি, ফিজিওথেরাপি এবং স্পিচ অ্যান্ড ল্যাঙ্গুয়েজ থেরাপির পুনর্বাসন সেবায় নিয়োজিত ইন্টার্নদের সাথে গবেষণাটি পরিচালিত হবে যাদের স্নাতক পর্যায়ে গবেষণার অভিজ্ঞতা এবং স্নাতক পরবর্তী সর্বাধিক এক বছরের অভিজ্ঞতা রয়েছে। তাই এই মানদণ্ডগুলি আপনার সাথে সামঞ্জস্য হওয়ার কারণে আপনাকে এই গবেষণায় অংশ নিতে আমন্ত্রণ জানানো হয়েছে।

আপনার অংশগ্রহণ আবশ্যিক কি না ?

গবেষণা কার্যক্রমে আপনার অংশগ্রহণ সম্পূর্ণ ঐচ্ছিক। স্বেচ্ছায় অংশগ্রহণ করতে না চাইলে আপনি অংশগ্রহণ প্রত্যাহার করার সুযোগ রয়েছে। গবেষণা কার্যক্রমে অংশগ্রহণ করা বা না করা অথবা পরবর্তীতে অংশগ্রহণ প্রত্যাহার করার সিদ্ধান্তের মাধ্যমে আপনার কর্মস্থল বা পেশাগত কার্যক্রম কোনভাবে প্রভাবিত হবে না। আপনি চাইলে গবেষণায় অংশগ্রহণ তথ্য সংগ্রহের ২ সপ্তাহের মধ্যে প্রত্যাহার করতে পারেন।

গবেষণায় অংশগ্রহণের সম্ভাব্য ঝুঁকি এবং সুবিধাগুলি কী কী ?

গবেষণায় অংশগ্রহণের জন্য সরাসরি কোন সুযোগ সুবিধা পাবেন না। এছাড়াও গবেষণা কার্যক্রমে অংশগ্রহণে কোন ধরনের ঝুঁকি বা বিপত্তি নেই বলেই আশা করা যাচ্ছে। অধিকন্তু, স্নাতক পর্যায়ে গবেষণা পরিচালনা করার মাধ্যমে শিক্ষার্থীরা গবেষণা সংশ্লিষ্ট তদন্তের পদ্ধতিগত প্রক্রিয়া সংক্রান্ত দক্ষতা অর্জন করতে পারে। যার মধ্যে রয়েছে তথ্য সংগ্রহ এবং বিশ্লেষণ, উল্লেখযোগ্য তথ্যের রেকর্ডিং, এবং পরবর্তী বিশ্লেষণ এবং একাডেমিক প্রক্রিয়া দ্বারা সংজ্ঞায়িত পুনর্বাসন প্রোটোকল অনুসারে সেই তথ্যের ব্যাখ্যা। পুনর্বাসন পেশায় স্নাতক পর্যায়ে গবেষণা পরিচালনার অভিজ্ঞতা অন্বেষণ এবং

বিশ্লেষণের মাধ্যমে কিছু প্রচলিত ও বিরল অভিজ্ঞতা উঠে আসতে পারে। যার মাধ্যমে শিক্ষার্থীদের স্নাতক পর্যায়ে গবেষণায় সম্পৃক্ততার গুরুত্ব, পরবর্তী স্নাতক পর্যায়ের গবেষকদের সামগ্রিক গবেষণার কার্যক্রম সম্পর্কে ধারণা এবং স্বাস্থ্যসেবা পেশাদার হিসেবে কর্মজীবনে বিচক্ষণতার প্রভাব প্রকাশ পাবে।

আপনার অংশগ্রহন কতটুকু গোপনীয় হবে?

আপনার সমস্ত রেকর্ডের গোপনীয়তা অত্যন্ত সতর্কতার সাথে রক্ষণাবেক্ষণ করা হবে। সমস্ত বিবরণ একটি গোপনীয় ডাটাবেসে রাখা হবে যা শুধুমাত্র গবেষণা কার্যক্রমের জন্য গবেষক আমি এবং আমার তত্ত্বাবধায়কের অ্যাক্সেসযোগ্য হবে।

আপনার দেওয়া তথ্য কীভাবে সংগ্রহ, সংরক্ষণ এবং সুরক্ষিত হবে?

গবেষণার তথ্য সংগ্রহের ক্ষেত্রে আপনার স্বাচ্ছন্দ্য অনুযায়ী স্থান এবং সময় নির্ধারণ করে আপনার সম্মতির পরিপ্রেক্ষিতে সম্পন্ন করা হবে। আপনার সম্মতি ছাড়া কোথাও আপনার পরিচয় প্রকাশ করা হবে না। আপনার সকল তথ্য পাসওয়ার্ড দ্বারা সুরক্ষিত একটি ল্যাপটপে সংরক্ষণ করা হবে। এছাড়াও ব্লগ, পত্রিকা, জার্নাল বা যেকোন প্রকাশনার ক্ষেত্রে আপনার নাম/ পরিচয় ব্যতীত প্রকাশ করা হবে। এই অধ্যয়ন সম্পর্কে আপনার কোন প্রশ্ন থাকলে অনুগ্রহ করে নির্দিধায় জিজ্ঞাসা করতে পারেন। গবেষণা সংক্রান্ত যেকোন প্রশ্নের উত্তর দিতে আমি দায়বদ্ধ এবং প্রশ্ন করলে আপনার আগ্রহ আমাকে গবেষণাটি পরিচালনায় আরও উৎসাহিত করবে।

আপনার যদি কোন প্রশ্ন থাকে তাহলে আপনি যোগাযোগ করতে পারেনঃ

মনীষা চক্রবর্তী

তত্ত্বাবধানে

আরিফা জাহান ইমা

প্রভাষক

অকুপেশনাল থেরাপি বিভাগ

কোর্স সমন্বয়ক, অকুপেশনাল থেরাপি স্নাতকোত্তর

বাংলাদেশ হেলথ প্রফেশনস ইনস্টিটিউট

সিআরপি, সাভার, ঢাকা: ১৩৪৩

৪র্থ বর্ষ, অকুপেশনাল থেরাপি বিভাগ

সেশনঃ ২০১৭-১৮

সেল ফোন- ০১৬২৯০১৭১১৬

সেল ফোন- ০১৭৫৩৯৭৯০৪১

Appendix C: Consent and Withdrawal Consent form (English version)

Consent form (English version)

As a part a of Occupational Therapy course curriculum, Monisha Chakraborty a 4th year B.Sc. in Occupational Therapy student of Bangladesh Health Profession Institute (BHPI) is going to be conducting a study. The study is “Experience of Rehabilitation Professionals Regarding Conducting Undergraduate Research: A Qualitative Study.” The purpose of the study is to explore the experiences of rehabilitation professionals who graduated from the BHPI in conducting their undergraduate research. By this study the participants will not get any benefit but the information will help the researcher to reach the scientific findings of the study.

The information of the participant will collect by an interview process and the information will keep safe by maintaining confidentiality. The researcher only will access the information and the personal information will not mention in anywhere in the study.

In this study I am a participant, have been clearly informed about the aim and purpose of the study. And the researcher can ask study related any question if have any inquiry. But I will not bound to answer any question which can create impact on me. Though the researcher clarifies the details about the study, I will try my best to cooperate by ensuring my participation. And I am willingly participating in the study by giving consent with concerning the above informed information.

Signature of the participant: Date:.....

Signature of the researcher:.....Date:.....

Withdrawal Consent Form (English version)

(Applicable for Voluntary Withdrawal only)

Title: Experience of Rehabilitation Professionals Regarding Conducting Undergraduate Research: A Qualitative Study

Investigator: Monisha Chakraborty

I am..... (participant), want to withdraw my consent for participating in the study.

Withdrawal Form Participants

Name:

Reason of Withdraw:

.....
.....

Participants Signature:

Date.....

Appendix C: Consent and Withdrawal Consent Form (Bengali version)
Consent Form (Bengali version)

সম্মতি পত্র

অকুপেশনাল থেরাপি কোর্সের পাঠ্যক্রমের একটি অংশ হিসেবে, মনীষা চক্রবর্তী বাংলাদেশ হেলথ প্রফেশনাল ইনস্টিটিউটের (বিএইচপিআই) বি.এসসি. ইন অকুপেশনাল থেরাপি বিভাগের ৪র্থ বর্ষের ছাত্রী একটি গবেষণা পরিচালনা করতে যাচ্ছে। গবেষণাটি হল " স্নাতক পর্যায়ে গবেষণা পরিচালনার বিষয়ে পুনর্বাসন পেশায় কর্মরত ইন্টার্নদের অভিজ্ঞতা"। গবেষণাটির লক্ষ্য হল বিএইচপিআই এ অধ্যয়নকৃত পুনর্বাসন পেশায় কর্মরত ইন্টার্ন অর্থাৎ অকুপেশনাল থেরাপি, ফিজিওথেরাপি এবং স্পিচ অ্যান্ড ল্যাঙ্গুয়েজ থেরাপিতে কর্মরত ইন্টার্নদের স্নাতক পর্যায়ে গবেষণা পরিচালনার বিষয়ে অভিজ্ঞতা অন্বেষণ করা। এই অধ্যয়নের মাধ্যমে অংশগ্রহণকারীরা কোন সুবিধা পাবেন না কিন্তু তথ্য গবেষণার বৈজ্ঞানিক ফলাফলে পৌঁছাতে সাহায্য করবে। অংশগ্রহণকারীর তথ্য একটি ইন্টারভিউ প্রক্রিয়ার মাধ্যমে মোবাইল ফোন দ্বারা রেকর্ড করা হবে এবং তথ্য গোপনীয়তা বজায় রেখে নিরাপদ রাখা হবে। এই গবেষণার গবেষক এবং তত্ত্বাবধায়ক শুধুমাত্র তথ্য অ্যাক্সেস করবেন এবং ব্যক্তিগত তথ্য গবেষণার কোথাও উল্লেখ করবেন না।

এই গবেষণায় আমি একজন অংশগ্রহণকারী, গবে লক্ষ্য এবং উদ্দেশ্য সম্পর্কে স্পষ্টভাবে অবগত। কিন্তু আমি এমন কোনো প্রশ্নের উত্তর দিতে বাধ্য নই যা আমার ওপর ব্যক্তিগত প্রভাব ফেলতে পারে। যদিও গবেষক গবেষণা সম্পর্কে বিস্তারিত ব্যাখ্যা করেছেন, তাই আমি আমার অংশগ্রহণ নিশ্চিত করে সহযোগিতা করার জন্য যথাসাধ্য চেষ্টা করব। এবং আমি স্বেচ্ছায় উপরোক্ত তথ্যের বিষয়ে সম্মতি দিয়ে এই গবেষণায় অংশগ্রহণ করতে যাচ্ছি।

অংশগ্রহণকারীর স্বাক্ষর: তারিখ:.....

গবেষকের স্বাক্ষর: তারিখ:.....

Withdrawal Consent Form (Bengali version)

প্রত্যাহার পত্র

(শুধুমাত্র স্বেচ্ছায় প্রত্যাহারের জন্য প্রযোজ্য)

গবেষণার শিরোনাম: স্নাতক পর্যায়ে গবেষণা পরিচালনার বিষয়ে পুনর্বাসন পেশায় কর্মরত ইন্টার্নদের অভিজ্ঞতা।

গবেষক: মনিষা চক্রবর্তী, ৪র্থ বর্ষ, অকুপেশনাল থেরাপি বিভাগ

অংশগ্রহণকারীর নাম:

আমি (অংশগ্রহণকারী),

গবেষণায় অংশগ্রহণের জন্য আমার সম্মতি প্রত্যাহার করতে চাই।

পূর্ববর্তী তথ্যের অনুমতি ব্যবহার করা যাবে কি না? হ্যাঁ/ না

অংশগ্রহণকারীর নাম:.....

প্রত্যাহারের

কারণ:.....

অংশগ্রহণকারীর স্বাক্ষর:

তারিখ:.....

গবেষকের স্বাক্ষর.....তারিখ:.....

Appendix D: Translation Contract Form (English Version)

As a part a of Occupational Therapy course curriculum, Monisha Chakraborty a 4th year B.Sc. in Occupational Therapy student of Bangladesh Health Profession Institute (BHPI) is going to be conducting a study. The study is “Experience of Rehabilitation Professionals Regarding Conducting Undergraduate Research: A Qualitative Study.” The purpose of the study is to explore the experiences of rehabilitation professionals who graduated from the BHPI in conducting their undergraduate research.

In accordance with the conduct of the research, the researcher and supervisor of the study will only access the data and the interview data will not be referred to other than personal information. In working as a translator in this research, I am clearly aware of the aims, objectives and confidentiality of data collection. I will translate this research data into English with utmost confidentiality. I will not discuss any information related to this matter with anyone.

Signature of translator: Date:

Signature of Researcher:Date:

Appendix D: Translation Contract Form (Bengali Version)

অনুবাদ চুক্তিপত্র

অকুপেশনাল থেরাপি কোর্সের পাঠ্যক্রমের একটি অংশ হিসেবে, আমি মনীষা চক্রবর্তী বাংলাদেশ হেলথ প্রফেশন্স ইনস্টিটিউটের (বিএইচপিআই) এর বি.এসসি. ইন অকুপেশনাল থেরাপি বিভাগের ৪র্থ বর্ষের একজন ছাত্রী একটি গবেষণা কার্যক্রম পরিচালনা করতে যাচ্ছি। গবেষণাটি হল " স্নাতক পর্যায়ে গবেষণা পরিচালনার বিষয়ে পুনর্বাসন পেশায় কর্মরত ইন্টার্নদের অভিজ্ঞতা"। গবেষণাটির লক্ষ্য হল বিএইচপিআই এ অধ্যয়নকৃত পুনর্বাসন পেশায় কর্মরত ইন্টার্ন অর্থাৎ অকুপেশনাল থেরাপি, ফিজিওথেরাপি এবং স্পিচ অ্যান্ড ল্যাঙ্গুয়েজ থেরাপিতে কর্মরত ইন্টার্নদের স্নাতক পর্যায়ে গবেষণা পরিচালনার বিষয়ে অভিজ্ঞতা অন্বেষণ করা।

গবেষণা পরিচালনার নিয়মানুসারে, গবেষণার গবেষক এবং তত্ত্বাবধায়ক শুধুমাত্র তথ্য অ্যাক্সেস করবেন এবং ব্যক্তিগত তথ্য ছাড়াও সাক্ষাৎকারের তথ্য অন্যকোথাও উল্লেখ করা যাবেনা।

এই গবেষণায় আমি একজন অনুবাদক হিসেবে কাজ করার ক্ষেত্রে গবেষণার লক্ষ্য, উদ্দেশ্য এবং তথ্য সংগ্রহের গোপনীয়তা সম্পর্কে স্পষ্টভাবে অবগত। আমি সর্বোচ্চ গোপনীয়তা রক্ষা করে এই গবেষণার তথ্য ইংরেজি অনুবাদ করবো। এই বিষয় সংশ্লিষ্ট কোন তথ্য কারো সাথে আলোচনা করবো না।

অনুবাদকের স্বাক্ষর: তারিখ:.....

গবেষকের স্বাক্ষর: তারিখ:.....

Appendix E: Interview Guide (English Version)

Name:

Age:

Gender: Male / Female / Other

Marital Status: Married / Unmarried

Workplace:

Occupation: Intern in Occupational Therapy/ Intern in Physiotherapy/ Intern in Speech Therapy

Research Design:

Place of data collection:

1. What was your research conducting area during undergraduate research course?
2. How did you prepare for conducting research before starting the research process?
3. How confident were you about your self-efficacy at the beginning of the study?
4. How was your relationship with your supervisor during the course of the study?
5. Did you understand all types of feedback from your supervisor?
6. Did you complete your tasks on time according to your supervisor's feedback?
7. Have you ever had supervisors' feedback and take longer time than necessary? If so, please explain why.
8. How did you choose your research topic area?
9. Did you face any problem while choosing your research topic? If yes what was the problem?

10. Did you face any problem while choosing your research topic? If yes what was the problem?
11. Did you have to conduct your research during the lockdown for COVID 19 pandemic? If yes please explain your experience.
12. Did you ever require online supervision? If yes, then how was the experience?
13. Did you face any problems' during your data collection? If yes, please describe the problem in detail.
14. How and what institutional support did you receive for your research?
15. Did you face any problem for organizational data collection? If so, please describe the problem in detail.
16. How was your experience during collecting or using the necessary scales or tools to conduct your quantitative research project? Please describe if you conduct your thesis through quantitative research design.
17. How was your experience in developing an interview guide for conducting a qualitative research project? Please describe if you conduct your thesis through qualitative research design.
18. Did you get enough institutional internet supply for research activities?
19. Did you face any problems in data analysis in the study? If so, tell me in detail what the problem is.
20. Were you able to work towards the goals you set before starting the research?
21. Did you need the help of your classmates or anyone else involved in conducting the entire research? If so, tell me the details.

22. What skills have you been able to gain by doing research at the undergraduate level?
23. How do you think you need to prepare differently if you are going to conduct the research in a different design than the one you followed the research design?
24. How do you think your undergraduate research experience will affect on your future research?
25. What is your next plan about this study?
26. How do you think this undergraduate research will be useful in your future career?
27. How effective and important do you find undergraduate research opportunities as a part of rehabilitation profession?

Appendix E: Interview Guide (Bengali Version)

প্রশ্নপত্র

সাক্ষাৎকারের তারিখঃ

সময়ঃ

স্থায়িত্বকালঃ

নামঃ

বয়সঃ

সেল ফোনঃ

লিঙ্গঃ পুরুষ/মহিলা/অন্যান্য

বৈবাহিক অবস্থাঃ বিবাহিত/অবিবাহিত

কর্মস্থলঃ

পেশাঃ অকুপেশনাল থেরাপি ইন্টার্ন/ ফিজিওথেরাপি ইন্টার্ন / স্পিচ থেরাপি ইন্টার্ন

রিসার্চ ডিজাইনঃ

তথ্য সংগ্রহের স্থানঃ গ্রামীণ/

শহুরে/ অন্যান্য

১। স্নাতক পর্যায়ে কোন বিষয়ের উপর আপনি গবেষণা কার্যক্রম পরিচালনা করেছিলেন?

২। গবেষণা শুরু করার পূর্বে আপনি স্নাতক পর্যায়ের গবেষণার জন্য কেমন প্রস্তুত ছিলেন?

৩। গবেষণার শুরুতে আপনি নিজের কার্যক্ষমতার উপর কেমন আত্মবিশ্বাসী ছিলেন?

৪। গবেষণাটি পরিচালনা করার ক্ষেত্রে আপনি আপনার পরিবার থেকে কেমন মানসিক এবং অর্থনৈতিক সমর্থন ও সহায়তা পেয়েছিলেন?

৫। গবেষণা চলাকালীন সময়ে আপনি এবং আপনার সুপারভাইজারের সাথে পারস্পরিক সম্পর্ক কেমন ছিল?

৬। আপনি কি আপনার সুপারভাইজারের সকল ধরনের ফিডব্যাক বুঝতে পারতেন?

৭। আপনার সুপারভাইজারের ফিডব্যাক অনুযায়ী কি আপনি আপনার কাজগুলো সময়মত করতেন?

৮। আপনার কি কখনও সুপারভাইজারের কাছে প্রয়োজনের অধিক সময় লেগেছে? লাগলে কেন বিস্তারিত বলুন।

- ৯। আপনি আপনার গবেষণার বিষয়বস্তুর এরিয়া কিভাবে নির্বাচন করেছিলেন?
- ১০। আপনি আপনার গবেষণার বিষয় নির্বাচন করার সময় কোনও ধরনের সমস্যার সন্মুখীন হয়েছিলেন? যদি হ্যাঁ হয় কেমন সমস্যা ছিল?
- ১১। COVID 19 মহামারীর জন্য লকডাউন চলাকালীন সময়ে আপনাকে কি আপনার গবেষণা পরিচালনা করতে হয়েছিল? যদি হ্যাঁ হয় আপনার অভিজ্ঞতা বিস্তারিত বলুন।
- ১২। আপনার কি কখনও অনলাইন সুপারভিশন লেগেছে? যদি লেগে থাকে তাহলে ওই সময়কার অভিজ্ঞতা বিস্তারিত বলুন।
- ১৩। আপনার গবেষণার তথ্য সংগ্রহের সময়ের অভিজ্ঞতা বিস্তারিত বলুন।
- ১৪। আপনার গবেষণার জন্য আপনি কেমন এবং কি কি প্রাতিষ্ঠানিক সহযোগিতা পেয়েছিলেন? বিস্তারিত বলুন।
- ১৫। প্রতিষ্ঠান থেকে গবেষণাকেন্দ্রিক তথ্য সরবরাহের ক্ষেত্রে কেমন অভিজ্ঞতার সন্মুখীন হয়েছিলেন? বিস্তারিত বলুন।
- ১৬। কোয়ালিটেটিভ গবেষণা কার্যক্রম পরিচালনা করার জন্য প্রয়োজনীয় স্কেল বা টুলস সংগ্রহ বা ব্যবহার করার অভিজ্ঞতা কেমন ছিল বিস্তারিত বলুন।
- ১৭। কোয়ালিটেটিভ গবেষণা কার্যক্রম পরিচালনার জন্য ইন্টারভিউ গাইড তৈরি করতে কি কি অভিজ্ঞতা হয়েছিল বিস্তারিত বলুন।
- ১৮। গবেষণা কার্যক্রমের জন্য কি প্রতিষ্ঠান থেকে পর্যাপ্ত ইন্টারনেট সরবরাহ পেয়েছিলেন?
- ১৯। গবেষণায় ডাটা এনালাইসিস করার ক্ষেত্রে আপনি কোনো ধরনের সমস্যার সন্মুখীন হয়েছিলেন? হলে কেমন সমস্যা বিস্তারিত বলুন।
- ২০। গবেষণা শুরুর পূর্বে আপনি যে লক্ষ্যগুলো স্থাপন করেছিলেন সে অনুযায়ী কি আপনি কাজ করতে পেরেছিলেন?
- ২১। সম্পূর্ণ গবেষণাটি পরিচালনার ক্ষেত্রে আপনার কি আপনার সহপাঠী বা ওই বিষয় সম্পৃক্ত অন্য কারও সহায়তার প্রয়োজন হয়েছিল? হয়ে থাকলে বিস্তারিত বলুন।

২২। স্নাতক পর্যায়ে গবেষণা করার মাধ্যমে আপনি কি কি দক্ষতা অর্জন করতে পেরেছেন?

২৩। আপনি যে রিসার্চ ডিজাইন অনুসরণ করে গবেষণাটি পরিচালনা করেছেন, এ ছাড়া অন্য ডিজাইনে গবেষণা পরিচালনা করতে গেলে আপনার আলাদা কেমন প্রস্তুতি নিতে হবে বলে মনে করেন?

২৪। স্নাতক পর্যায়ে পরিচালিত গবেষণার অভিজ্ঞতা ভবিষ্যতে কোন গবেষণা পরিচালনার ক্ষেত্রে কীরূপ প্রভাব ফেলবে বলে আপনি মনে করেন?

২৫। এই গবেষণাটি নিয়ে আপনার পরবর্তী পরিকল্পনা কি?

২৬। এই স্নাতক পর্যায়ের গবেষণাটি ভবিষ্যৎ কর্মজীবনে কোন কোন কাজে আসতে পারে বলে আপনি মনে করেন?

২৭। একজন পুনর্বাসন পেশাজীবী হিসেবে স্নাতক পর্যায়ে গবেষণা করার সুযোগকে আপনি কেমন কার্যকরী এবং গুরুত্বপূর্ণ মনে করেন?

Appendix F: Supervision Contact Schedule

Bangladesh Health Professions Institute
Department of Occupational Therapy

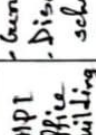
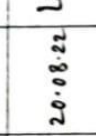
Experience of Rehabilitation Professionals
Regarding Conducting Undergraduate Research

Title of thesis:

Name of student: Monisha Chakraborty

Name and designation of thesis supervisor: Anifa Jahar Fima
lecturer

Department of Occupational Therapy.

Appointment No	Date	Place	Topic of discussion	Duration (Minutes/Hours)	Comments of student	Student's signature	Thesis supervisor signature
1	17.08.22	BHPI office building	<ul style="list-style-type: none"> General discussion on thesis Discussion on contact schedule of research supervision. Research approach Qualitative approach Research design (narrative approach & case study) 	45 min	Complete the methodology of research proposal	Monisha Chakraborty	
2	20.08.22	Library	<ul style="list-style-type: none"> Research approach Qualitative approach Research design (narrative approach & case study) 	1.15 hr	Complete the Math, sampling and discuss with p intern student.	Monisha Chakraborty	

21.08.22	library	Methodology of literature research proposal	1-20 hr	Complete and submission of methodology	Monisha Chakraborty	AYM 2022
4	BHPI office building	Feedback of methodology of research proposal.	1 hr	Complete the powerpoint of literature research proposal	Monisha Chakraborty	AYM 2022
5	BHPI office building	Feedback of powerpoint and the interview guide.	40 min	Complete the methodology according to feedback.	Monisha Chakraborty	AYM 25.08.22
6	BHPI office building	Discussion on socio-demographic status of interview guide feedback of powerpoint.	1-50 hr	Complete the interviewing guide, methodology	Monisha Chakraborty	AYM 28.08.22
7	BHPI office building	Discussion on feedback of research proposal introduction literature review and methodology.	25 min	Rewrite the introduction	Monisha Chakraborty	AYM 03.09.22
8	BHPI office building	Taking feedback of literature review, methodology and interview guide	25 min	Submit the proposal.	Monisha Chakraborty	AYM 03.09.22
9	BHPI office building	Taking feedback on short interview information sheet content withdrawal consent for starting data collection.	20 min	Re-write information sheet, consent & withdrawal consent in Bangla	Monisha Chakraborty	AYM 10.10.22

10	16.10.22	DHPI office building	Guideline for data collection (interview guide, bengla transcription) interaction video	Guideline for feedback on transcript and reflection of data collect	1.30 hr	Starting data collection and bengla transcript	Monisha Chakraborty	16.10.22
11	25.10.22	DHPI office building	Guideline for feedback on transcript and reflection of data collect	Feedback on transcript and translation of data collect	30 min	Guideline for further data collection.	Monisha Chakraborty	25.10.22
12	31.10.22	DHPI office building	Feedback on transcript and translation of data collect	Feedback on transcript and translation of data collect	30 min	Continue data collection and starting preparation for data analysis.	Monisha Chakraborty	31.10.22
13	06.11.22	DHPI office building	Feedback on transcript and translation of data collect	Feedback on transcript and translation of data collect	30 min	Continue data analysis according to the guideline	Monisha Chakraborty	06.11.22
14	17.11.22	DHPI office building	Feedback on transcript and translation of data collect	Feedback on transcript and translation of data collect	40 min	Continue data analysis according to the guideline	Monisha Chakraborty	17.11.22
15	24.11.22	DHPI office building	Feedback on transcript and translation of data collect	Feedback on transcript and translation of data collect	1 hr	Continue data analysis according to the guideline	Monisha Chakraborty	24.11.22

16	29-11-22	BHPI Office building	Feedback on data analysis and guideline for and then development.	40 min	Theme 2 sub-theme development	Monisha Chakraborty	AYMA 20.12.22
17	07-12-22	BHPI Office building	Feedback on result section and guideline for to write up methodology	30 min	Result correction & methodology write up.	Monisha Chakraborty	AYMA 20.12.22
18	13-12-22	BHPI Office building	Feedback on result and section and re-write the new guideline	30 min	Result write up according to instruction	Monisha Chakraborty	AYMA 20.12.22
19	20-12-22	BHPI Office building	Feedback on re-doing result and re-write the section	30 min	Re-Complete the result write up according to instruction	Monisha Chakraborty	AYMA 20.12.22
20	3-01-23	BHPI Classroom	Guideline to write literature literature review.	20 min	Make an overview of literature review	Monisha Chakraborty	AYMA

Note:

1. Appointment number will cover at least a total of 40 hours; applicable only for face-to-face contact with the supervisors.
2. Students will require submitting this completed record during submission your final thesis.

21	04.01.23	DHPS office building	Guideline for write up literature review, discussion & conclusion and set up the deadlines.	40 min	Submission of literature review on 05 Jan 2023	Monisha Chakrabarti	AYMA 04.01.23
22	25.03.23	DHPS office building	Overall feedback on 1st draft of thesis and guideline on methodology correction for methodology chapter.	1 hr	Complete methodology chapter correction	Monisha Chakrabarti	AYMA 25.03.23
23	29.03.23	DHPS office building	Feedback on methodology chapter.	1 hr	Complete the methodology chapter writing accordingly to correction.	Monisha Chakrabarti	AYMA 29.03.23
24	08.04.23	DHPS office building	Final guideline on final A1 the correction.	1 hr	Complete methodology and result write-up	Monisha Chakrabarti	AYMA
25	11.04.23	DHPS office building	Feedback on methodology and result	1 hr	Complete the result chapter write-up	Monisha Chakrabarti	AYMA
26	16.04.23	DHPS office building	Feedback on correction of result and discussion chapter	80 min	Complete the introduction and conclusion.	Monisha Chakrabarti	AYMA 16.04.23
27	27.04.23	DHPS office building	Feedback on form abstract to half of literature review	1 hr	Complete the thesis according to the updated template	Monisha Chakrabarti	AYMA 27.04.23

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28	00.04.23	Office building	feedback on the first of literature review - first part of ppt preparation	2 hr	Complete the power point to defend	Monisha Chakrabarti	EMA
29	06.05.23	Office building	feedback on result of chapter and discussion	1 hr	Complete discussion and conclusion write up	Monisha Chakrabarti	EMA
30	10.05.23	Library	feedback on abstract	1 hr	Complete the abstract according to the feedback	Monisha Chakrabarti	EMA
31	11.05.23	Library	feedback on the updated abstract	1 hr	Preparation for on defence ppt	Monisha Chakrabarti	EMA
32	14.05.23	Office building	feedback on thesis power point	1.30 hr	Reap correct the ppt preparation on defence	Monisha Chakrabarti	EMA
33	02.06.23	Library	feedback on 2nd draft.	2.30 hr	Correct the ppt according to feedback	Monisha Chakrabarti	EMA
34							
35							
36							
37							