LEVEL OF FUNCTIONAL DISABILITIES AMONG DENTISTS PRACTITIONER IN DHAKA CITY.

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Acknowledgement

Acronyms

WHO   World Health Organization

LBP   Low Back Pain

SPSS   Statistical Package of Social Science

MSD   Musculoskeletal Disorder

WRMD/WMSD   Work Related Musculoskeletal Disorder

ODI   Oswestry Disability Index

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Abstract

Purpose: To identify the functional disability level among the dentists due to back pain in Dhaka city**. Objectives**: To explore the socio-demography (age, sex, BMI, education level, marital status, job experience) of the dentists. To find out the disability level among the dentists. **Methods:** The study design was cross-sectional. Total 120 samples were selected hospital based random sampling technique for this study. Data was collected by using Oswestry Disability Index (ODI) scale. Descriptive statics was used for data analysis which focused through table, pie chart and bar chart. **Result**: Among 120 Dentists were participants. The mean of the respondents (N=120) was 35.77 years (SD: ±7.522). in here highest age of the participants was 60 and lowest age was 24. Most vulnerable age group was <36 years 54.2%. The study was focused that 54% were male and 46% were female. Here married 73 (81.1%) and unmarried 17 (18.9%). The mean BMI of the respondents (N=120) Was 24.432 (SD± 3.3056). In here highest BMI of the participants was 37.5and lowest BMI was 14.5. Most vulnerable BMI group was 18.6-24.9 (64.2%). A total of 120 dentists were participants B.D.S was 88% and Diploma was 12%. Among 120 dentists were participants here married 73 (81.1%) and unmarried 17 (18.9%). Among 120 participants' highest year of job experience was 28 year and lowest job experience 3 year. Among 120 participants I found that 100% back pain of the participants. Here 53.3% participants were worked 7-8 hours and 47.7% participants worked 4-6 hours**.**76% participants were working sitting posture and 24% participants were working standing posture. In this showed that among the 120 dentists were participants. Mild disability 81.7%, moderate disability 11.7%, severe disability 5.8%, disabling0.8%. Most vulnerable group mild disability 81.7%. **Conclusion:** Back pain was very common in dentists. Prolong sitting and standing posture exerted abnormal loads to the spine and increased risk of back pain. Chronic back pain major causes of functional disability.

Key words: Dentists, Back pain, functional disability.

CHAPTER – I	INTRODUCTION

1.1 Background

Dentists is the prestigious and expanding profession. Back pain is the most common problem among the dentist. As they work long time sitting and standing position. They cannot maintain accurate body posture; heavy loads are exerted to the lumbar spine that is high risk of increase back pain among the dentist. It is the most frequent complaint and almost all dentists worldwide have experienced this during their careers that's why occurs disability and discomfort or persist pain in the joints, muscles, tendons, and others soft parts. (Samat et al., 2011)

Functional disability is lead to a major impact on the health related quality of life as well as performance and productivity at work. Large number functional disability and worker compensation day in many countries (Wang et al. 2008)

Workload imposition is an important factor in the occurrence of back pain symptom in general and specially occurs functional disability among the working population. The life time history of back pain range from 51-80%. Throughout western society, low back pain among working population has increased dramatically. Studies note a higher incidence musculoskeletal symptom and back pain among dentists than other occupational groups. Studies have reported identify of 30 to 70 percent of musculoskeletal pain among dentists (Ratzon et al., 2000)

Most of the risk factors typically associated with functional disability experienced in dentists, dental hygienists, and dental assistants, including force, repetition, and awkward and static posture (Morse, bruneau and Dussetschleger, 2009)

Survey data on the health and function of dentists, largely from outside of the united states, showed the apprehension that dentists may be at an elevated risk of chronic injury and pain due to musculoskeletal exposure. burke et al. reported that work related problem in dentists were a primary reason for early retirement among British dentists. There have been a number of general alarms that the practice of dentistry carries high risk of disabling disease and injury and potential premature career loss due to static posture and prolonged and

adverse arm and neck positions. In a study of Dutch dentists carrying disability insurance, 7% of dentists were observed to require extended sick leave, with 30% of this fraction remaining out of the workforce on excess of one year. The author estimated that at least 15% of claims were work related and concluded that 50% of dentists were likely to retire prematurely due to disability. Several investigators have concluded that dentists require ergonomic correction to prevent high risk of physical injury and entails exposure to physical and organizational risk factors (Dussestschleger and Bjor, 2008)

In developed country, epidemiological studies have suggested that functional disability are most affect of adult population. the opinion that a psychosocially and physically stressful work is a major cause of functional disability is supported by several studies. Occupation entailing long standing static, monotonous, or repetitive movements are associated with development of early symptoms and disorders in the neck and back. This indicates the positive effects of more movements and changes in posture at work.

Since the 1980's, researchers have reported a high rate of back pain among dentists. During the survey of 432 dentists in Denmark, of them 90.4% were utilizing the sit down operating technique, found that 60% suffered from pain in the neck and back. Another survey of 465 Toronto areas, Canadian dentists showed that 62.2% had suffered back and neck pain at some time in their lives, while 36.3% were currently suffering from such problems. Seventy percent of dentists in this survey had never missed work because of their back problem and 62% of those who had backaches had missed less than one week. A survey of dentists in Southern Thailand reported that 63.3% had experienced back pain. Dental auxiliaries also experience back problems (Al Wazzan et al., 2013)

1.2 Rationale

Back pain disorders becomes increasingly common throughout the world during the past decades. Functional disability is one of the most important occupational health problem for dental professionals. The disorders causes long periods of work disability and treatment is often necessary. From the study dentists will able to identify the functional disability due to back pain. Dentists may provide proper recommendation for every single risk which will be helpful for them. Besides this it will help to established ergonomic guidelines for space, equipment, furniture and environmental for every single risk which are mandatory in the design of workplace. This study will also help to discover the lacking area of a dentists, especially about their posture before doing any activities. Besides this it will help to professional development which is mandatory for current situation. From this study researcher can identify functional disability which are harmful. So investigator can help them to teach and give proper education about the posture the condition and prevention methods. By this there will develop a good relationship with dentists and as well as others professionals, which is very important for identify the functional disability. And it will help to discover the role and important of physiotherapy in every sector of Bangladesh.

Functional disability are the common hazards of the dental personnel are caused or aggravated by repeated movements and prolonged awkward or forced body posture. (Samat et al., 2011)

Al wazzan et al., (2013) claimed that common postural faults among dentists and dental auxiliaries are craning and or excessive bending and twisting forward from the waist elevation of the shoulders, and general bending or twisting of the back.

1.3 Research Question

What is the level of functional disability among the dentists due to back pain in Dhaka city?

1.4 Objective of the study

General objective:

To identify the functional disability level among the dentists due to back pain in Dhaka city

Specific objectives

1.To evaluate the sociodemographic information of the participants

2. To assess the rate of disability among the dentists in Dhaka city by Oswestry disability index.

3. To examine the association between working position and the level of disability among the participants.

1.5 Conceptual framework

Respond variables

Response variables

Sociodemographic factors: Age, Gender. Education, Marital status.

Health related information: BMI, Height, weight, Back pain

Functional disability

Lifestyle and work related factors: Experience, working hour, working position
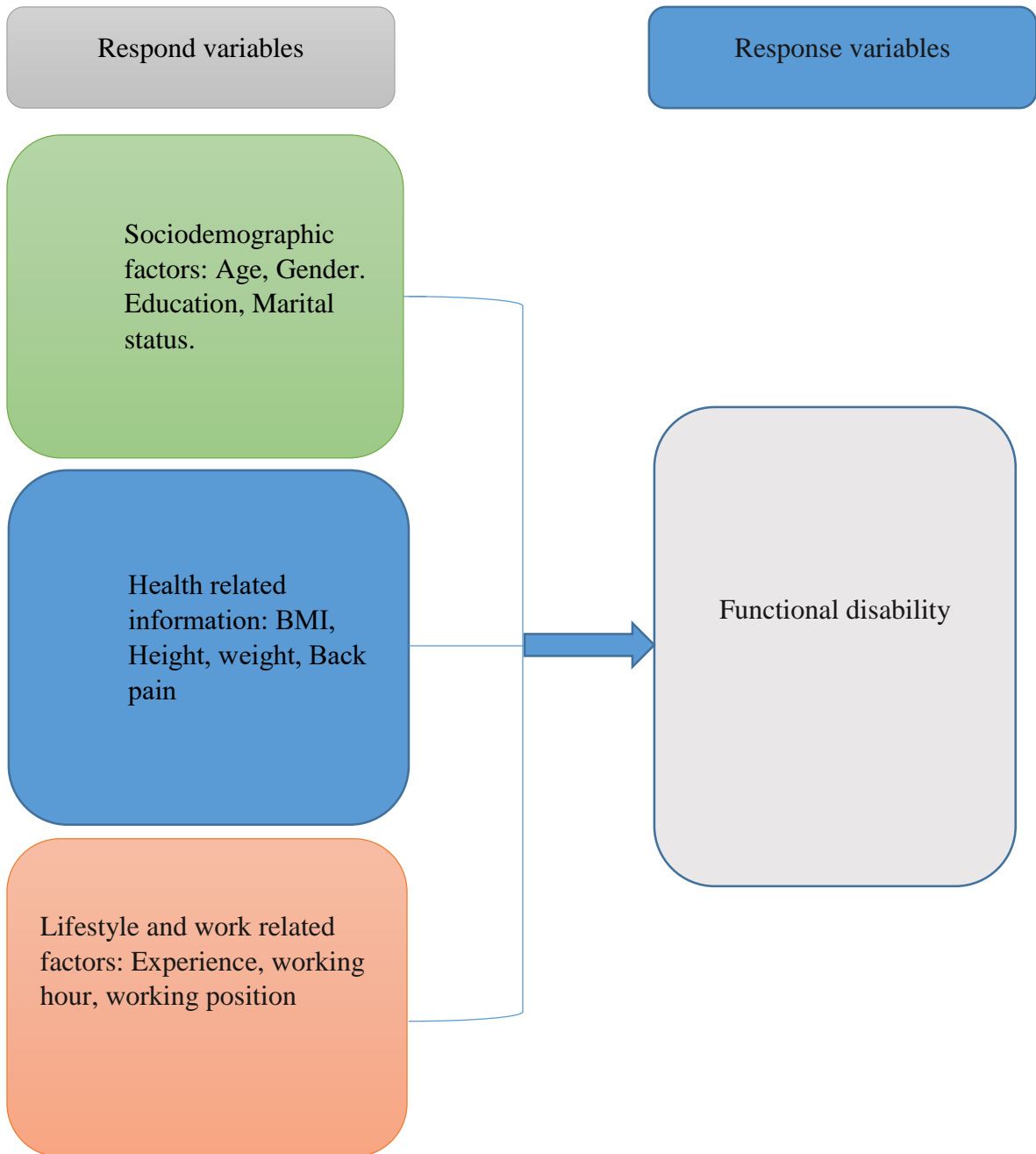
1.6 Operational definitions of the variables

Dentists: A person who is qualified to treat diseases and other conditions that affect the teeth and gums, especially the repair and extraction of teeth and the insertion of artificial ones.

Back pain: Back pain is the common medical condition in world wide. Back pain, discomfort or sometimes debilitating suffering associated with an injury or some other affliction of the back, the posterior portion of the body that extends from the shoulders to the hips. Back pain is a ubiquitous compliant and a leading cause of the disability worldwide.

Functional Disability: functional disability has been defined as acquired difficulty in performing basic everyday tasks or more complex tasks needed for independent living.

Low back pain (LBP) is one of the most frequent medical problem globally. It defined as pain, stiffness or muscle tension localized below the costal margin and above the inferior gluteal folds. The life time prevalence of LBP is reported to be high, affecting nearly 80% of people at some time and the point prevalence is ranging from 30% to 50%. For example, in France more than half of the French population experienced LBP at least one day in the previous 12 months. In Iran, LBP is reported to be the most common health problem affecting all population with different prevalence rates, ranging from 17% for school children, 31.1% for teachers, 62% for nurses and 84% for pregnant women to 84.4% for surgeons. (MA, M., et al.,2017)

In a German study, average total back pain cost per patient was estimated to be 1322 per year. Different reported prevalence rates may be attributed to different methodologies, definition for LBP, definition for point prevalence, small sample size, etc. As dentists use prolonged sitting and standing during their job, apply awkward posture and repetitive movements, many loads are exerted to the lumbar spine. It is believed that the higher muscular demand may lead to fatigue and consequently increase the risk of LBP in dentists. (Al-Mohrej,A,.et al.,2016)

In a systematic review, it was reported that the prevalence of general musculoskeletal pain ranges between 64% and 93% and the most prevalent regions for pain in dentists have been shown to be the back (36.3-60.1%). However, despite technical advances, dentists worldwide and particularly in the middle east are still at higher risk of developing LBP.The aim of this study was to estimate the prevalence and risk factors associated with LBP in dentists of Tehran, Iran and to analyze the association between individual and occupational characteristics and LBP. Low back pain (LBP) was one of the most frequent medical problems globally. It is defined as pain, stiffness or muscle tension localized below the costal margin and above the inferior gluteal folds. Up to 84% of adults suffer from LBP at some point in life. The prevalence of chronic LBP is about 23%. Around 11%–12% of the population become disabled due to LBP. It causes substantial personal, social and financial

burdens globally. In the USA, LBP is the second most frequent cause for a physician consultation.(MD,P,.et al.,2010)

LBP was ranked globally as the topmost cause of disability as it affects mostly working-age people. It accounted for 60.1million disability-adjusted life-years in 2015. There was a significant increase of LBP by 54% since 1990, and the highest escalation took place in the low-income and middle-income countries (LMICs)Disability from LBP is a primary concern for the LMICs, specially in Bangladesh where manual labour rickshaw pulling, day labourers, house maids, work exposure to lifting of heavy weight during their day-to-day activities and so on is common.

The scope for job switching is restricted in resource constraint countries. LBP has multisectorial health outcomes like a lower quality of life, poorer self-reported health, depression and more. workspace absenteeism. As a result, LBP has become an important cause of sick leave and early retirement among the working population. In the USA, approximately 149million workdays are lost due to LBP, leading to an estimated loss of 100–200billion US dollars per year. Non-specific LBP is the the most common of all causes of LBP. Non-specific LBP is defined as LBP not particularly attributable to specific aetiology like malignancy, infection, fracture, inflammatory condition, radiculopathy or cauda equina syndrome Although high in most studies, there is a difference in LBP prevalence in various epidemiological studies. (Pargali,N,.2010)

The estimated lifetime prevalence was 84.1% in a Canadian study, 70% in Denmark and 59% in the UK. In Iran, the prevalence of LBP was 29.3%. The estimated prevalence of LBP in India ranged between 42% and 83%. A recent cross-sectional, community-based, epidemiological study conducted in Northern India yielded an estimated lifetime prevalence of 47% in man 57% in women. A Community Oriented Programmed for Control of Rheumatic Disorders (COPCORD) survey in Bangladesh published in 2005 showed 6.6%, 9.9% and 9.2% prevalence of LBP in the rural, urban slum and affluent urban areas, respectively. A cross-sectional national study in Bangladesh in 2015 showed LBP was the top-ranking musculoskeletal disorder (MSD) with a prevalence of 18.6%. We have further analyzed the data from the 2015 study and report the population weighted

prevalence according to sociodemographic factors, comorbid conditions, disability and work loss due to LBP, and identify the factors associated with LBP. Most of the cause at work could predispose people to develop musculoskeletal disorders. Lifting and carrying loads whole body vibrations having a statics postures for along time and frequent bending and twisting have been provided to be physical load risk factors consistently associated with work related back and neck disorders. There was evidenced for a causal relationship between low back and neck injuries and disorders with workplace excusers to forcefully extortions awkward postures and vibrations. (Pargali,E.,2010)

Various preventive measures could be taken such as stretching before work taking a break in the middle of the day performing procedures with good body postures and reducing repetitive motion. However, many other factors might still be associated with LBP. The literature suggests others associated factors was age of the dentists' number of patients treated per day, and type of case handled. (Gaowgzeh,A,R.,et al., 2015)

While the occasional backache or neck ache not a cause for alarm, if regular pain or discomfort was ignored, the cumulative physiological damage could lead to an injury or a career – ending disability. The dentists were at high risk of neck and back problems due to the limited work area and impaired vision associated with the oral civility. These working restrictions frequently cause a clinician to assume stressful body positions to achieve good access and visibility inside the oral cavity. Back pain is one of the most common and troublesome of complain its exact causes are legion and an exact diagnosis was often difficult.(Harhid,P., et al.,2012)

The world health organization currently defined disability as the umbrella term for impairments, activity limitations and participation restrictions. This definition stresses that disability results from the interactions between persons with impairments and attributed and environmental barriers that hinder their full and effectively participation in society on an equal basis with others. Defining disability as an interaction means that disability is not an attribute of the person's. Progresses on improving social participation can be made by addressing the barriers which hinder persons with disabilities in their day to day lives. (Okil,v.e.,202016)

The world health organization found that over 1 billion people worldwide experience disability. This means 1 in 7 people globally. There are so many methods of classifying disability- physical and mental, visible and invisible, etc. Each country seems to have its own classifications to its own local circumstances. This has made comparison of literature on disability somewhat difficult. The international classification of functional disability and health is the most current method of classifying disability. It adopts neutral language and does not distinguish between the type and cause of disability for instance, between physical and mental health.

Dentists are trained professionals who help care for the teeth and mouth. Regularly seeing a dentists can help you to maintain a good level of dental health, which may have a direct impact on your overall well-being. A dentists has many responsibilities, and one of the most important is promiting good dental hygine. This helps to prevent complications in your mouth or other parts of the body. A dentist also diagnosis and treats problems of the gums, teeth and mouth. (Brennan,d., 2021)

Dentistry was a demanding profession regarding concentration and precision. Most dentists today work in the sitting position treating the patients in the supine position. Because their work area (the mouth of the patient) was narrow performance of dental treatment results in a very inflexible work posture. Studies have shown that dentists have a high frequency of musculoskeletal disorders. (BP,S. et al.,2008)

Dentistry was an expanding profession in Saudi Arabia. According the Saudi Commission for Health Specialties there were 5946 Saudi dentists in 2015, comprising 32% of all dentists working in Saudi Arabia. Musculoskeletal (MSK) pain is a major occupational health concern in dentistry. The higher rates of MSK pain among dentists can be attributed to various physiological and ergonomic factors related to the profession. Work-related factors include awkward postures and movements, frequent and prolonged use of vibrating tools, and time spent with each patient. Additional factors include the dentists body mass index (BMI), lengthy working hours, number of walk-in patients and number of scheduled patients per day. The frequency of awkward movements performed by dentists such as stooping, slouching, ducking, uncomfortable posture while sitting, and bending forwards and sideways for better maneuverability make dentists more prone to MSK pain.

Such prolonged and awkward postures mostly affect the back, neck and upper extremities. MSK pain affects the quality of life of the dentist and may lead them to change profession to protect their health. Lower back pain is common among dentists. Its prevalence was reported to be around 37% in a study from Surat, India, which revealed that mental health. And exercise play a vital role in the development of MSK pain. A study of dentists carried out in New Zealand showed a prevalence of lower back pain of 54%, a prevalence of neck pain of 57% and a prevalence of shoulder pain of 52%. A study from Saudi Arabia in 2001 demonstrated that dentists reported reduced visibility of the mouths of their patients and restricted movement due to lack of work space. (BP,S.,et al.2008)

The study also reported that 55% of the sample population had neck pain while 74% had lower back pain that could potentially have been reduced by exercise. A more recent study in 2015 among dentists in Saudi Arabia showed that 85% have work-related MSK pain. However, the study had major limitations. (Harshid,A,.et al.,2012)

First, it reported on only 225 members of one dental association and included dental assistants, dental hygienists and dental technicians, which is not considered representative of the total dental population. A further limitation is that questionnaire validation was not described. The present study aims to estimate the prevalence of MSK pain among Saudi dentists and identify common risk factors, thus allowing intervention measures to be planned and implemented. (Alghadir,A.,2015)

CHAPTER – III	METHODOLOGY

3.1 Study design: It was a cross sectional type of descriptive study

3.2 Study place: Private dental chambers in Savar area and also Dhaka dental college hospital.

3.3 Study area: : Dhaka, Bangladesh

3.4 Study period: The duration of the study was 12 months from 1st July 2022 to 30th June 2023.

3.5 Study population: BDS dentists includes. Who practiced in Dhaka city.

3.6 Sample size: we know that;

$$n = \frac{z2pq}{d2}$$

Here,

n= required sample size.

z =confidence level at 95% (Standard value of 1.96).

P = P is the expected rate of prevalence, here we have taken the prevalence rate of 24.7% from the previous published literature by Mohammad ali et al., 2021.

d = margin of error at 5% (Standard value of 0.05).

$$n = \frac{z2pq}{d2}$$

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

$$= \frac{(1.96)^2 \times 0.24(1-0.24)}{(0.05)^2}$$

$$= 280$$

3.7 Sampling technique: Convenience sampling technique where applied for this study.

3.8 Eligibility criteria:

3.8.1 Inclusion criteria

- Professionals who has work experience more than 3 years
- BDS dentists are included in this study.
- Participant who are mentally stable.
- Participant who are willingly participant

3..8.2 Exclusion criteria

- Who had major surgery in the back
- Who had history of trauma

3.9 Method of data collection: The data was collected through face to face interview with participants.

3.9.1 Tools of data collection:

➢ Oswestry Disability Index (ODI)

➢ Self-structured questionnaire for socio-demographic information.

3.9.3 Data analysis: Data analysis was done by using statistical package for social sciences (SPSS) version 26. Descriptive (mean, SD) inferential (chi-square) statistics were used in this study

3.10 Ethical consideration:

- Bangladesh Medical Research Council (BMRC) and World Health Organization (WHO) guideline also were followed to conduct the study.
- The research proposal was submitted to the ethical committee that ethical review board of Saic College of Medical Science and Technology (SCMST) approval was obtained from the Board.
- Written informed consent was taken at the time of enrolling the respondents.
- The proposal information of the respondents was kept totally confidential.
- The research proposal also submitted to the ethical committee office Dhaka dental college.

CHAPTER – IV	RESULTS

This was a cross sectional study. The main objective of the study was to level of functional disability among dentist's practitioner in Dhaka city. Total 108 data were collected from Dhaka city. Data were numerically coded and captured in Microsoft Excel, using an SPSS 25.0 version This software program**.**

4.1 Socio-demographic information:

4.1.1 Age of the Participate:

The number of total participants was 108. The mean of the respondents (N=108) was 35.77 years (SD: ±7.522). in here highest age of the participants was 60 and lowest age was 24. Most common age group was <36 years 54.2%.

Table 1: Frequency distribution Age group of the participate

Age group in years	Frequency n	Percentage %	Mean ± SD
<36	65	54.2	35.77 ±7.522
>37	55	45.8	

4.1.2 Gender of the participant

The study was conducted on 108 participants among them 59%(65) were male and 41%(43) were female.
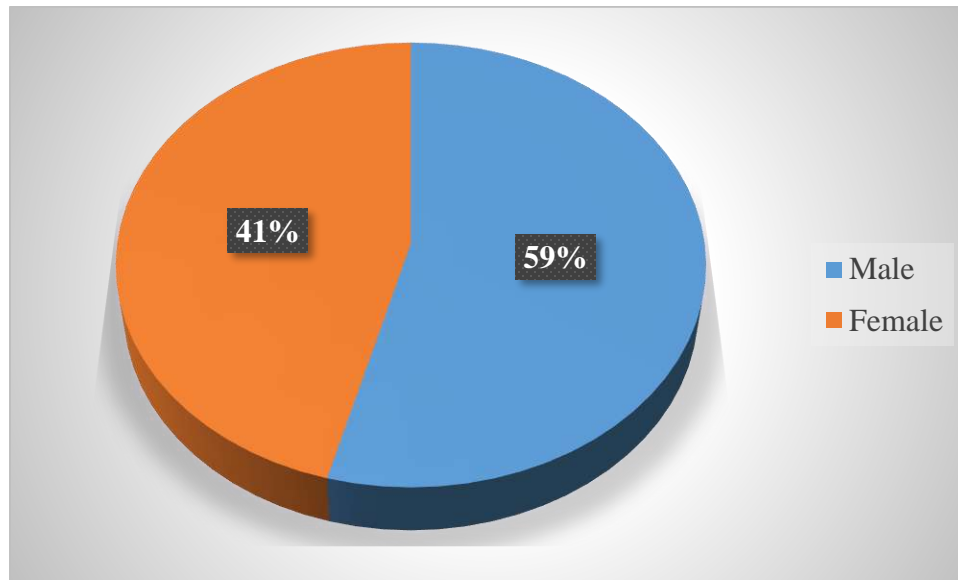
Figure -1: Gender of the respondents**.**

4.1.3 BMI of the participants (Body mass index)

A total of 108 dentists were participants. The mean BMI of the respondents (N=108) Was 24.432 (SD± 3.3056). In here highest BMI of the participants was 37.5and lowest BMI was 14.5. Most vulnerable BMI group was 18.6-24.9 (64.2%).

Table -2 Frequency distribution of BMI (Body Mass Index)

BMI Group	Frequency N	Percentage %	Mean ± SD
Under weight <18.5	4	3.3	
Normal 18.6 – 24.9	77	64.2	24.432 ± 3.3056
Over weight 25 – 29.9	33	27.5	
Obesity >30	6	5.0	

4.1.5 Marital status of the participants:

A total 108 dentists were participants. In this study here married (84%) and unmarried (16%).
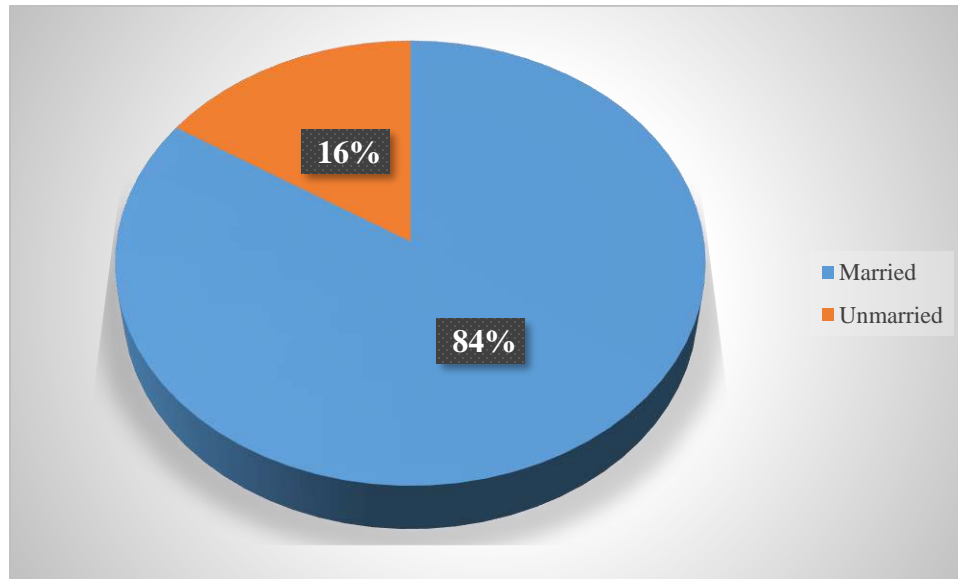
Figure-3: Marital status of the participants

4.1.6 Job experience of the participants

A total of 108 dentists were participants. Among them highest year of job experience was 21- 28 years and lowest job experience 3 -11 years.

Table -3: Frequency distribution of job experience

Year of experience group	Frequency (n)	Percent (%)
3-11 Years	78	65
12-20 Years	38	31.7
21-28 Years	4	3.3

4.2.2 Working hours of the participants

In this study showed that a total of 108 dentists were participants. Among them 53.3% participants were worked 7-8 hours and 47.7% participants worked 4-6 hours**.**

Table-5: Working hours of the participants

Working hours	Frequency (n)	Percentage (%)
4-6 Hours	64	53.3
7-8 Hours	56	47.7

4.2.3 Working posture of the participants

In this study showed that a total of 108 dentists were participants. This here 76% participants were working sitting posture and 24% participants were working standing posture
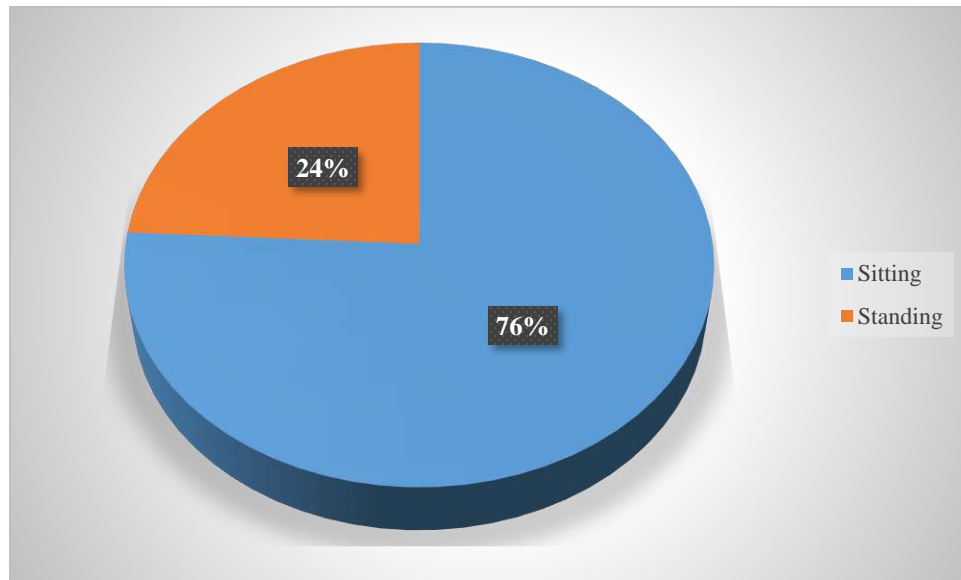
Figure-4: Working posture of the participants

4.3 Disability related questionnaire

In this study among the 108 dentists. Mild disability had 81.7%, moderate disability had 11.7%, severe disability had 5.8% and disabling was 0.8%. Here it was found that mild disability due to back pain most frequent among them.

4.3.1 Interpretation of the ODI score

Table-6: Frequency distribution of ODI score.

Disability rate	Frequency (n)	Percentage (%)
Mild disability	98	81.7
Moderate disability	14	11.7
Severe disability	7	5.8
Disabling	1	0.8

4.4.1 Association between posture and Disability rate:

In this cross tabulation between posture and disability level of the participants, it was found that there was no significant association between those variables. Where Pearson Chi square value 0.904 and P value was 0.567.

Table-7: Frequency distribution between posture and Disability rate.

Posture	Mild disability	Moderate disability	Severe disability	Disabling	Pearson Chi square	P Value
Sitting	75	10	5	1		
Standing	23	4	2	0	0.904	0.567

4.4.2 Association Between age group and disability rate:

A total of 108 dentists were participants. This table showed that Pearson Chi square (3.477) and p value (0.324) there is no significance between age group and disability rate.

Table-8: Frequency distribution age group and disability rate.

Age Group	Mild disability	Moderate disability	Severe disability	Disabling	Pearson Chi square	P value
<36	56	7	2	0	3.477	0.324
>37	42	7	5	1		

This population based cross sectional survey revealed the functional disability level among the dentists due to back pain in Dhaka city. The purpose of the study was to identify the functional disability level among the dentists due to back pain. All of the 108 participants had low back pain and were therefore considered participants. Because only those who have back pain they can participate. This study found that among the 108 dentists were participants. Mild disability 81.7%, moderate disability 11.7%, severe disability 5.8%, disabling0.8%. This result is comparable to Freire et al., (2017) at Brazil 69.1% had moderate disability due to back pain.

This study found that the mean of the respondents (N=108) was 35.77 years (SD: ±7.522). in here highest age of the participants was 60 and lowest age was 24. Most vulnerable age group was <36 years 54.2%. Piyapat et al., 2017. 74 dentists were participating (46.8%). Their mean age was 33.0 ± 9.1 years old. Mohammad et al. (2017). Their mean age was 41.30±8.43.

This study find out the mean BMI of the respondents (N=108) Was 24.432 (SD± 3.3056). In here highest BMI of the participants was 37.5and lowest BMI was 14.5. underweight <18.5 BMI group 3.3%. normal 18.6-24.9 BMI group 64.2%. over weight 25-29.9 BMI group 27.5%. obesity > 30 BMI group 5.0%.
Mohammad et al.2017. Pakistan their BMI mean (SD) 27.85±3.67. According to Al-Mohrej OA et al., 2016. Saudi Arabia, the mean BMI of participants was 26.6±4.7.

In this study here B.D.S dentists include. Other study showed that sixty subject including postgraduate students and staff of the dental college were participated in the study. Another study showed that 68 dental surgeons who were interviewed sixty-three were from the collage of dental surgery and five private practitioners who had passed the Bachelor of Dental surgeon (BDS) and working was considered eligible for the study. Shrestha BP et al. 2015 Nepal.

A total 108 dentists were participants. In this study here married 73 (81.1%) and unmarried 17 (18.9%).

Mohrej OA et al., 2016. Their study showed that one hundred and thirty 63.7% participants were married and seventy-four participants were unmarried.

This study A total of 108 dentists were participants. Among them highest year of job experience was 28 year and lowest job experience 3 years. Mohammad et al.2017, Pakistan, year of job experience mean and SD (12.83±7.46).

Alghadir A et al. ,2015, work related musculoskeletal disorders among dental professionals in Saudi Arabia, showed that ninety-four (64%) had work experience of more than 5 years.

In this study a total of 108 dentists were participants 53.3% participants were worked 7-8 hours and 47.7% participants worked 4-6 hours. other study showed that all of dentists Near about one fourth (21.9%) 7 of the participants had work interruption due to WRMD. Al wazzan et al. found in his research at Riyadh in 2011 that only 21.62% missed work due to neck pain and only 24.66% due to back pain. Leggat and Smith surveyed 285 Australian dentists more than one third (37.5%) requiring medical care for musculoskeletal disorder and 9% requiring extended leave from practice. Alexopoulos et al. also found a high prevalence of MSD problems that required medical attention or leave that is 10% of dentists for low back pain, 4% for hand or wrist and 3% for shoulder pain in Greek dentists in Thessaloniki. (Cherniacka, Dussetschleger and Bjor 2014) Just only one fourth 8 (25.0%) participants who have suffered from WRMD have taken physiotherapy treatment for their condition. Leggat et al. (2017) said that 38% dentists seeking medical attention for MSD in the Queensland, which were very 50 similar (37%) dental personnel in Saudi Arabia. Alexopoulos, Stathi & Charizani (2014) found that one hundred thirty-six dentists sought for medical care from orthopedists (60% in cases of back and shoulder complaints and 50% for neck and hand/wrist complaints) followed by physical therapists. On the other hand, they visited less than two times for any problem an orthopedist while they visited more than six times a physical therapist (10 times for shoulder complaints). In total they paid more than 800 visits mainly in physical therapists and orthopedists . worked for mean of 7.6 hours daily with their patients. (Mohrej OA et al., 2016).

This study a total of 108 dentists were participants here 76% participants were working sitting posture and 24% participants were working standing posture. Shrestha BP et al. 2015 Nepal their study showed that among the eighteen dentists 26.6% practiced sitting and fifty dentists 73.5% practiced sitting and standing posture.

Association Between posture and disability rate a total of 108 dentists were participants. This study showed that Pearson Chi square (0.904) and p value (0.567). according to the result of the current study, there was no significant correlation between age group and disability rate. The study conducted by Mohammad et al., (2017) there was no significant correlation between prevalence of LBP and years of practice (p=0.49).

Association Between age group and disability rate a total of 108 dentists were participants. This study showed that Pearson Chi square (3.477) and p value (0.324) there was no significance between age group and disability rate. So that back pain was very common in dentists. Age, gender, marital status, long time sitting and standing posture and movement contribute movement among the Dhaka city dentists. Studies have shown that disability increase with age as older dentists have spent more time with patients and eventually experience complicated pain.

CHAPTER – VI	**LIMITATIONS**

To make successful research it may be time consuming. As I get short period of time to complete the research. I have to take small sample size that is 108. If large number of sample size was taken, the result would be more reliable and appropriate and also give a clear perception about dentists in Dhaka city. As it was the first research of the researcher so there might be some mistakes that would be overlooked by the supervisor and the honorable teachers.

CHAPTER – VII   CONCLUSION AND RECOMMENDATION

6.1 Conclusion

The dental department is an essential component of the medical industry. Back discomfort affects practically everyone. As a result, physical impairment occurs. Those that have been in this field for a long time. It might be either male or female. This discomfort is most common in people who are tall and hefty who work standing or sitting for lengthy periods of time. who are thus translated into physical limitations. They can't sit or stand for extended periods of time or perform their own job, they have a difficult sexual life, and their sleep is disrupted owing to discomfort. Social activities become more limited. It becomes increasingly difficult to do so, and many people's lives are being cut short. The goal of this study is to identify functional disability caused by pain in dentists. that was discovered.

6.2 Recommendation

A recommendation evolves out of the context in which the study was conducted. Functional disability among the dentists due to back pain. Though the research has some limitations but researcher identified some further step that might be taken for the better accomplishment of further research. For the ensuring of the generalization of the research it is recommended to investigate large sample. In this study researcher only took the Dhaka city. But due to time limitation the investigator was not able to gather huge amount of participants and for this result cannot be generalized in all over the Bangladesh. So for further study it is strongly recommended to increase sample size to generalize the result in all of the dentists in Bangladesh. So it is recommended for further study.

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Appendix - A

Institutional Review Board (IRB) Permission Letter

SAIC COLLEGE OF MEDICAL SCIENCE AND TECHNOLOGY

Approved by Ministry of Health and Family Welfare
Affiliated with Dhaka University

Ref :   Date : ....

Ref.No: *SCMST/PT/ERB-2017-18/1-2023/28*

3rd January'2023

To

Md. Elious Hossain

4th Professional B.Sc. in Physiotherapy

Saic College of Medical Science and Technology (SCMST)

Mirpur-14, Dhaka-1216.

Sub: Permission to collect data

Dear Hossain,

Ethical review board (ERB) of SCMST pleased to inform you that your proposal has been reviewed by ERB of SCMST and we are giving you the permission to conduct study entitled "Identify the functional disability among dentist due to back pain" and for successful completion of this study you can start data collection from now.

Wishing you all the best.

Thanking You,

11.01.23

Head of ERB

Ethical Review Board

Saic College of Medical Science and Technology

11.01.23

Principal

Saic College of Medical Science and Technology

Mirpur-14, Dhaka-1216

Address: Saic Tower, M-1/6, Mirpur-14, Dhaka-1216. Mobile:01936005804
E-mail: simt140@gmail.com, Web:www.saicmedical.edu.bd

Appendix - B

Permission letter for data collection

Ref.No: SCMST/PT/ERB-2017-18/1-2023/28

Date : 13/3/2023

22th February'2023

To

1. The Director, Dhaka Dental College Hospital, Mirpur -14, Dhaka-1206.
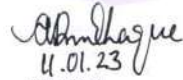2. The Chief Executive Officer, Enam Medical college Hospital, Savar, Dhaka-1340.
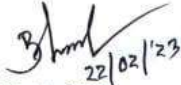
Sub: Permission to collect data
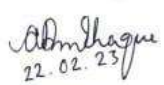
Dear Sir/Madam

Ethical review board (ERB) of SCMST pleased to inform you that that Md. Elious Hossain of final year B.Sc. in Physiotherapy student from Saic College of Medical Science and Technology doing a thesis entitle of "Identify the functional disability among dentist due to back pain" which has been reviewed by ERB of SCMST and we are giving permission to his to conduct this study. . So he wants to take data from your department.

I hope you will give kind permission to her to collect data to complete her study successfully and oblige thereby.

Thanking You,

22/02/'23

Head of ERB

Ethical Review Board

Saic College of Medical Science and Technology

22.02.23

Principal

Saic College of Medical Science and Technology

Mirpur-14, Dhaka-1216

আসসালামুয়ালাইকুম/আদাব, আমার নাম মোঃ ইলিয়াস হোসেন। আমি সাইক কলেজ অফ মেডিকেল সায়েন্স অ্যান্ড টেকনোলজির একজন ছাত্র, ফিজিওথেরাপি বিভাগে বিজ্ঞানের স্নাতক শেষ বর্ষের। শিরোনাম-

পিঠে ব্যথার কারণে ডেন্টিস্টদের মধ্যে কার্যকরী অক্ষমতা চিহ্নিত করুন।

আমাকে ঢাকা বিশ্ববিদ্যালয়ের মেডিসিন অনুষদের অধীনে সাইক কলেজ অফ মেডিকেল সায়েন্স অ্যান্ড টেকনোলজি (এসসিএমএসটি) থেকে এই বিষয়ে গবেষণা করার জন্য নিয়োগ দেওয়া হয়েছে। আমি আমার অধ্যয়ন সম্পর্কিত কিছু তথ্য জানতে চাই। এটি প্রায় 15-20 মিনিট সময় নেবে। সম্পূর্ণ তথ্য সংগ্রহ করার জন্য আমাকে একবার আপনার সাথে দেখা করতে হবে। আমি আপনাকে জানাতে চাই যে এটি একটি সম্পূর্ণ একাডেমিক অধ্যয়ন এবং তথ্য প্রাপ্ত করা অন্য কোন উদ্দেশ্যে ব্যবহার করা হবে না। আপনার দ্বারা প্রদত্ত সমস্ত তথ্য গোপন রাখা হবে এবং তথ্যের উৎসও বেনামী থাকবে, এই গবেষণায় আপনার অংশগ্রহণ স্বেচ্ছাকৃত এবং ইন্টারভিউ চলাকালীন আপনি পছন্দ করেন না বা উত্তর দিতে চান না এমন একটি নির্দিষ্ট প্রশ্নের উত্তর না দেওয়ার অধিকারও।

আমি শুরু করার আগে আপনার কোন প্রশ্ন আছে?

তাহলে, ইন্টারভিউ নিয়ে এগিয়ে যেতে আমি কি আপনার সম্মতি পেতে পারি?

হ্যাঁ ☐   না ☐

গবেষকের স্বাক্ষর ....   তারিখ ....

অংশগ্রহণকারীর স্বাক্ষর ....   তারিখ ....

মোবাইল নম্বর ....

ঠিকানা ....

সাক্ষীর স্বাক্ষর ....

Consent Form (English)

Assalamu Alaikum/ Adab,

I am conducting this thesis for my B.Sc. In Physiotherapy program titled "Title on - Functional disability level among the dentists due to back pain in Dhaka city**.** Now I want to ask some personal, pain and disability related question. This will take approximately 15-20 minutes.

I would like to inform you that this is a purely academic study and will not be used for any other purpose. Your participation in the research will research will have no impact on your present or future treatment in the area. All information provided by you will be treated as confidential and in the event of any report or publication it will be ensured that the source of information remains secret.

Yours participation in this study is voluntary and you may withdraw yourself at any time during this study without any negative questions. You also have the right not to answer a particular question that you don't like or do not want to answer during interview.

If you have any query about the study or your right as a participant, you may contact with me and/or my research supervisor, Abid Hasan Khan, Lecturer, Department of physiotherapy, Saic College of Medical Science and Technology, Mirpur-14, Dhaka-1216.

So, may I have your consent to proceed with the interview?

Yes Δ   No Δ

Signature and date of the Participant …………………………………….

Signature and date of the Interviewer ……………………………………

Signature and date of the Physiotherapist ………………………………….

প্রশ্নাবলী (বাংলা)

প্রশ্নাবলী :পিঠে ব্যথার কারণে ডেন্টিস্টদের মধ্যে কার্যকরী অক্ষমতা শনাক্ত করুন।

কোড নং

অংশগ্রহণকারীর নাম ....

অংশ A: সামাজিক-জনতাত্ত্বিক তথ্য:

ক্রমিক সংখ্যা	প্রশ্ন	উত্তর	কোড
১	আপনার বয়স কত	...................বছর	
২	. লিঙ্গ	১. পুরুষ ২.মহিলা ৩. অন্যান্য	
৩	ওজন (কেজি)	....	
৪	উচ্চতা	....	
৫	শিক্ষাগত যোগ্যতা	১.বিডিএস ২. ডিপ্লোমা	
৬	বৈবাহিক অবস্থা	.১. বিবাহিত ২. অবিবাহিত	
	কাজের অভিজ্ঞতা	....	

অংশ-বি:

অক্ষমতা সম্পর্কিত তথ্য

নির্দেশনা

এই প্রশ্নপত্রটি আমাদেরকে তথ্য দেওয়ার জন্য ডিজাইন করা হয়েছে যে কীভাবে আপনার পিঠের ব্যথা দৈনন্দিন জীবনে পরিচালনা করার ক্ষমতাকে প্রভাবিত করছে। আপনার জন্য সবচেয়ে ভালো প্রযোজ্য বিবৃতির জন্য প্রতিটি বিভাগে একটি বাক্স চেক করে উত্তর দিন। আমরা বুঝতে পারি যে আপনি বিবেচনা করতে পারেন যে কোনও একটি বিভাগে দুটি বা ততোধিক বিবৃতি প্রযোজ্য তবে অনুগ্রহ করে কেবল সেই জায়গাটি ছায়া দিন যা বিবৃতিটি নির্দেশ করে যা আপনার সমস্যাটিকে সবচেয়ে স্পষ্টভাবে বর্ণনা করে।

১	**ব্যথার তীব্রতা**	
	০. এই মুহূর্তে আমার কোন ব্যথা নেই	
	১.এই মুহূর্তে ব্যথা খুব হালকা	
	২.এই মুহূর্তে ব্যথা মাঝারি	
	৩ .এই মুহূর্তে ব্যথা মোটামুটি গুরুতর	
	৪. এই মুহূর্তে ব্যথা খুব তীব্র	
	৫ . এই মুহূর্তে যন্ত্রণা সবচেয়ে খারাপ	

২	**ব্যক্তিগত যত্ন (ধোয়া, ড্রেসিং ইত্যাদি)** ০. আমি অতিরিক্ত ব্যথা না করেই নিজের যত্ন নিতে পারি ১.আমি সাধারণত নিজের যত্ন নিতে পারি কিন্তু এটি অতিরিক্ত ব্যথার কারণ হয় নিজেকে দেখাশোনা করা বেদনাদায়ক এবং আমি ধীর এবং সতর্ক 3. আমার কিছু সাহায্য দরকার কিন্তু আমার ব্যক্তিগত যত্নের অধিকাংশই পরিচালনা করুন 4. স্ব-যত্নের বেশিরভাগ ক্ষেত্রে আমার প্রতিদিন সাহায্যের প্রয়োজন হয় 5. আমি পরিধান করি না, আমি কষ্ট করে ধুয়ে বিছানায় থাকি	
৩	**উত্তোলন** 0. আমি অতিরিক্ত ব্যথা ছাড়াই ভারী ওজন তুলতে পারি 1. আমি ভারী ওজন তুলতে পারি কিন্তু এটি অতিরিক্ত ব্যথা দেয় 2. ব্যথা আমাকে মেঝে থেকে ভারী ওজন তুলতে বাধা দেয়, তবে আমি পরিচালনা করতে পারি যদি সেগুলি সুবিধাজনকভাবে স্থাপন করা হয় যেমন। একটি টেবিলের উপর 3. ব্যথা আমাকে ভারী ওজন তুলতে বাধা দেয়, তবে আমি হালকা থেকে মাঝারি ওজন পরিচালনা করতে পারি যদি সেগুলি সুবিধামত অবস্থানে থাকে 4. আমি খুব হালকা ওজন তুলতে পারি 5. আমি কিছুতেই তুলতে বা বহন করতে পারি না	

৪	**হাঁটা** 0. ব্যথা আমাকে কোনো দূরত্ব হাঁটতে বাধা দেয় না 1. ব্যথা আমাকে 2 কিলোমিটারের বেশি হাঁটতে বাধা দেয় 2. ব্যথা আমাকে ১ কিলোমিটারের বেশি হাঁটতে বাধা দেয় 3. ব্যথা আমাকে 500 মিটারের বেশি হাঁটতে বাধা দেয় 4. আমি কেবল লাঠি বা ক্রাচ ব্যবহার করে হাঁটতে পারি 5. আমি বেশিরভাগ সময় বিছানায় থাকি	
৫	**বসা** 0. আমি যতক্ষণ চাই ততক্ষণ যে কোনও চেয়ারে বসতে পারি 1. আমি যতক্ষণ চাই ততক্ষণ আমার পছন্দের চেয়ারে বসতে পারি 2. ব্যথা আমাকে এক ঘন্টার বেশি বসতে বাধা দেয় 3. ব্যথা আমাকে 30 মিনিটের বেশি বসতে বাধা দেয় 4. ব্যথা আমাকে ১০ মিনিটের বেশি বসতে বাধা দেয় 5. ব্যথা আমাকে একেবারে বসতে বাধা দেয়	
৬	**দাঁড়ানো** 0. আমি অতিরিক্ত ব্যথা ছাড়া যতক্ষণ চাই ততক্ষণ দাঁড়াতে পারি 1. আমি যতক্ষণ চাই ততক্ষণ দাঁড়াতে পারি কিন্তু এটি আমাকে অতিরিক্ত ব্যথা দেয় 2. ব্যথা আমাকে 1 ঘন্টার বেশি দাঁড়িয়ে থাকতে বাধা দেয় 3. ব্যথা আমাকে 3 মিনিটের বেশি দাঁড়িয়ে থাকতে বাধা দেয় 4. ব্যথা আমাকে 10 মিনিটের বেশি দাঁড়িয়ে থাকতে বাধা দেয় 5. ব্যথা আমাকে একেবারে দাঁড়াতে বাধা দেয়	

৭	**ঘুমন্ত** 0. ব্যথা দ্বারা আমার ঘুম কখনও ব্যাহত হয় না 1. আমার ঘুম মাঝে মাঝে ব্যথা দ্বারা বিরক্ত হয় 2. ব্যথার কারণে আমার 6 ঘন্টার কম ঘুম হয় 3. ব্যথার কারণে আমার 4 ঘন্টার কম ঘুম হয় 4. ব্যথার কারণে আমার 2 ঘন্টার কম ঘুম হয় 5. ব্যথা আমাকে ঘুমাতে বাধা দেয়	
৮	**যৌন জীবন (যদি প্রযোজ্য হয়)** 0. আমার যৌন জীবন স্বাভাবিক এবং কোন অতিরিক্ত ব্যথা সৃষ্টি করে না 1. আমার যৌন জীবন স্বাভাবিক কিন্তু কিছু অতিরিক্ত ব্যথা কারণ 2. আমার যৌন জীবন প্রায় স্বাভাবিক কিন্তু খুব বেদনাদায়ক 3. ব্যথা দ্বারা আমার যৌন জীবন গুরুতরভাবে সীমাবদ্ধ 4. ব্যথার কারণে আমার যৌন জীবন প্রায় অনুপস্থিত 5. ব্যথা যে কোনো যৌনজীবনকে আদৌ বাধা দেয়	
৯	**সামাজিক জীবন** 0.আমার সামাজিক জীবন স্বাভাবিক এবং আমাকে কোন অতিরিক্ত ব্যথা দেয় না 1.আমার সামাজিক জীবন স্বাভাবিক কিন্তু ব্যথার মাত্রা বাড়ায় 2.আমার আরও উদ্যমী আগ্রহ যেমন খেলাধুলাকে সীমিত করা ছাড়া আমার সামাজিক জীবনে ব্যথার কোন উল্লেখযোগ্য প্রভাব নেই 3. ব্যথা আমার সামাজিক জীবনকে সীমাবদ্ধ করেছে এবং আমি প্রায়শই বাইরে যাই না 4. ব্যথা আমার সামাজিক জীবন আমার বাড়িতে সীমাবদ্ধ 5. ব্যথার কারণে আমার কোন সামাজিক জীবন নেই	

১০	ভ্রমণ	
	0. আমি ব্যথা ছাড়াই কোথাও ভ্রমণ করতে পারি	
	1. আমি যে কোন জায়গায় ভ্রমণ করতে পারি কিন্তু এটি আমাকে অতিরিক্ত ব্যথা দেয়	
	2. ব্যথা খারাপ কিন্তু আমি দুই ঘণ্টার বেশি যাত্রা পরিচালনা করি	
	3. ব্যথা আমাকে এক ঘন্টার কম ভ্রমণে সীমাবদ্ধ করে	
	4. ব্যথা আমাকে 30 মিনিটের কম ছোট প্রয়োজনীয় ভ্রমণে সীমাবদ্ধ করে	
	5. ব্যথা আমাকে চিকিৎসা করা ছাড়া ভ্রমণ করতে বাধা দেয়	

English Questionnaire

IDENTIFY THE FUNCTIONAL DISABILITY AMONG THE DENTISTS DUE TO BACK PAIN.

Code no

Participant Name …………………………………………

Part A: Socio-demographic information:

Serial no	Question	Response	Code
1.	Age	………………..years	
2.	Gender	1. Male 2. Female 3. Other	
3.	Weight (kg)	………………..	
4.	Height	……………….	
5.	Education qualification	1. B.D.S 2. DIPLOMA	
6.	Marital status	1. Married 2. Unmarried 3.	
7.	Job experience	………………..	

Instructions

This questionnaire has been designed to give us information as to how your back pain is affecting your ability to manage in everyday life. Please answer by checking ONE box in each section for the statement which best applies to you. We realise you may consider that two or more statements in any one section apply but please just shade out the spot that indicates the statement which most clearly describes your problem.

Division no	Question	Result
1.	**Pain intensity** 0. I have no pain at the moment 1. The pain is very mild at the moment 2. The pain is moderate at the moment 3. The pain is fairly severe at the moment 4. The pain is very severe at the moment 5. The pain is the worst imaginable at the moment	
2.	**Personal care (washing, dressing etc)** 0. I can look after myself normally without causing extra pain 1. I can look after myself normally but it causes extra pain 2. It is painful to look after myself and I am slow and careful 3. I need some help but manage most of my personal care 4. I need help every day in most aspects of self-care 5. I do not get dressed, I wash with difficulty and stay in bed	

3.	**Lifting** 0. I can lift heavy weights without extra pain 1. I can lift heavy weights but it gives extra pain 2. Pain prevents me from lifting heavy weights off the floor, but I can manage if they are conveniently placed eg. on a table 3. Pain prevents me from lifting heavy weights, but I can manage light to medium weights if they are conveniently positioned 4. I can lift very light weights 5. I cannot lift or carry anything at all	
4.	**Walking** 0. Pain does not prevent me walking any distance 1. Pain prevents me from walking more than 2 kilometers 2. Pain prevents me from walking more than 1 kilometers 3. Pain prevents me from walking more than 500 miters 4.I can only walk using a stick or crutches 5. I am in bed most of the time	
5.	**Sitting** 0. I can sit in any chair as long as I like 1. I can only sit in my favorites chair as long as I like 2. Pain prevents me sitting more than one hour 3. Pain prevents me from sitting more than 30 minutes	

	4. Pain prevents me from sitting more than 10 minutes 5. Pain prevents me from sitting at all	
6.	**Standing** 0. I can stand as long as I want without extra pain 1. I can stand as long as I want but it gives me extra pain 2. Pain prevents me from standing for more than 1 hour 3. Pain prevents me from standing for more than 3 minutes 4. Pain prevents me from standing for more than 10 minutes 5. Pain prevents me from standing at all	
7.	**Sleeping** 0. My sleep is never disturbed by pain 1. My sleep is occasionally disturbed by pain 2. Because of pain I have less than 6 hours' sleep 3. Because of pain I have less than 4 hours' sleep 4. Because of pain I have less than 2 hours' sleep 5. Pain prevents me from sleeping at all	

8.	**sex life (if applicable**)	
	0. My sex life is normal and causes no extra pain	
	1. My sex life is normal but causes some extra pain	
	2. My sex life is nearly normal but is very painful	
	3. My sex life is severely restricted by pain	
	4. My sex life is nearly absent because of pain	
	5. Pain prevents any sex life at all	
9.	**Social life** 0.My social life is normal and gives me no extra pain 1.My social life is normal but increases the degree of pain 2.Pain has no significant effect on my social life apart from limiting my more energetic interests e.g., sport 3.Pain has restricted my social life and I do not go out as often 4.Pain has restricted my social life to my home 5. I have no social life because of pain	

10.	**Travelling** 0. I can travel anywhere without pain 1. I can travel anywhere but it gives me extra pain 2. Pain is bad but I manage journeys over two hours 3. Pain restricts me to journeys of less than one hour 4. Pain restricts me to short necessary journeys under 30 minutes 5. Pain prevents me from travelling except to receive treatment	

Appendix : H   Gantt chart

Activities/ Month	July 22	Aug 22	Sep 22	Oct 22	Nov 22	Dec 22	Jan 23	Feb 23	Mar 23	App 23	May 23	Jun 23
Proposal Presentation	■											
Introduction	■	■										
Literature Review	■	■	■	■	■	■	■	■	■	■	■	■
Methodology			■	■								
Data collection							■	■	■			
Data Analysis										■		
Result										■		
1st progress presentation										■		
Discussion											■	
Conclusion and Recommendation											■	
2nd progress presentation										■		
Communication with supervision	■	■	■	■	■	■	■	■	■	■	■	■
Final Submission												■