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GREEN LIFE MEDICAL COLLEGE JOURNAL

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AIMS & SCOPE:

The Green Life Medical College Journal is an english language scientific papers dealing with clinical medicine, basic sciences, epidemiology, diagnostic, therapeutics, public helath and healthcare in relation to concerned specialities. It is an official journal of Green Life Medical College and is published bi-annually.

This Joural is recognized by Bangladesh Medical & Dental Council (BM&DC).

The Green Life Medical College Journal of Bangladesh intends to publish the highest quality material on all aspects of medical science. It includes articles related to original research findings, technical evaluations and reviews. In addition, it provides readers opinion regarding the articles published in the journal.

INSTRUCTION TO AUTHORS:

Papers:

The Green Life Medical College Journal (published bi-annually) accepts contributions from all branches of medical science which include original articles, review articles, case reports, and letter to the Editor.

The articles submitted are accepted on the condition that they must not have been published in whole or in part in any other journal and are subject to editorial revision. The editor preserves the right to make literary or other alterations which do not affect the substance of the contribution. It is a condition of acceptance that the copyright becomes vested in the journal and permission to republish must be obtained from the publisher. Authors must conform to the uniform requirements for manuscripts submitted to biomedical journals (JAMA 1997; 277: 927-34).

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In preparing the manuscript, use double spacing throughout, including title, abstract, text, acknowledgement, references, table and legends for illustrations and font type and size 'Times New Roman 12'. Begin each of the following sections on a separate paper. Number pages consecutively.

The standard layout of a manuscript:

- Title page
- Abstract, including Keywords
- Introduction
- Methods
- Results
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The pages should be numbered in the bottom right-hand corner and the title page being page one, etc. Start each section on a separate page.

Title page:

A separate page which includes the title of the paper. Titles should be as short and concise as possible (containing not more than 50 characters). Titles should provide a

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reasonable indication of the contents of the paper. This is important as some search engines use the title for searches. Titles in the form of a question, such as 'Is drinking frequent coffee a cause of pancreatic carcinoma?" may be acceptable.

The title page should include the name(s) and address(es) of all author(s). Details of the authors' qualifications and post (e.g., professor, consultant) are also required. An author's present address, if it differs from that at which the work was carried out, or special instructions concerning the address for correspondence, should be given as a footnote on the title page and referenced at the appropriate place in the author list by superscript numbers ([1, 2, 3] etc.) If the address to which proofs should be sent is not that of the first author, clear instructions should be given in a covering note, not on the title page.

Abstract:

The 'Abstract' will be printed at the beginning of the paper. It should be on a separate sheet, in structured format (Introduction/Background; Methods; Results; and Conclusions) for all Clinical Investigations and Laboratory Investigations. For Reviews and Case Reports, the abstract should not be structured. The Abstract should give a succinct account of the study or contents within 350 words. The results section should contain data. It is important that the results and conclusion given in the 'Abstract' are the same as in the whole article. References are not included in this section.

Keywords:

Three to six keywords should be included on the summary page under the heading Keywords. They should appear in alphabetical order and must be written in United Kingdom English spelling.

Introduction:

The recommended structures for this section are:

- Background to the study/Introduction
- What is known/unknown about it
- What research question / hypothesis you are interested in
- What objective(s) you are going to address

The introduction to a paper should not require more than about 300 words and have a maximum of 1.5 pages double-spaced. The introduction should give a concise account of the background of the problem and the object of the investigation. It should state what is known of the problem to be studied at the time the study was started. Previous work should be quoted here but only if it has direct bearing on the present problem. The final paragraph should clearly state the primary and, if applicable, secondary aims of the study.

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The title of this section should be 'Methods' - neither 'Materials and methods' nor Patients and methods'. The Methods section should give a clear but concise description of the process of the study. Subjects covered in this section should include:

- Ethics approval/license
- Patient/population
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Ethical clearance:

Regardless of the country of origin, all clinical investigators describing human research must abide by the Ethical Principles for Medical Research Involving Human Subjects outlined in the Declaration of Helsinki, and adopted in October 2000 by the World Medical Association. This document can be found at: http://ohsr.od.nih.gov/guidelines/helsinki.html. Investigators are encouraged to read and follow the Declaration of Helsinki. Clinical studies that do not meet the Declaration of Helsinki criteria will be denied peer review. If any published research is subsequently found to be non-compliant to Declaration of Helsinki, it will be withdrawn or retracted. On the basis of the Declaration of Helsinki, the Green Life Medical Journal requires that all manuscripts reporting clinical research state in the first paragraph of the 'Methods' section that:

- The study was approved by the appropriate Ethical Authority or Committee.
- Written informed consent was obtained from all subjects, a legal surrogate, or the parents or legal guardians for minor subjects.

Human subjects should not be identifiable. Do not disclose patients' names, initials, hospital numbers, dates of birth or other protected healthcare information. If photographs of persons are to be used, either take permission from the person concerned or make the picture unidentifiable. Each figure should have a label pasted on its back indicating name of the author at the top of the figure. Keep copies of ethics approval and written informed consents. In unusual

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circumstances the editors may request blinded copies of these documents to address questions about ethics approval and study conduct.

The methods must be described in sufficient detail to allow the investigation to be interpreted, and repeated if necessary, by the reader. Previously documented standard methods need not be stated in detail, but appropriate reference to the original should be cited. However, any modification of previously published methods should be described and reference given. Where the programme of research is complex such as might occur in a neurological study in animals, it may be preferable to provide a table or figure to illustrate the plan of the experiment, thus avoiding a lengthy explanation. In longitudinal studies (case-control and cohort) exposure and outcome should be defined in measurable terms. Any variables, used in the study, which do not have universal definition should be operationalised (described in such terms so that it lends itself to uniform measurement). Where measurements are made, an indication of the error of the method in the hands of the author should be given. The name of the manufacturer of instruments used for measurement should be given with an appropriate catalogue number or instrument identification (e.g. Keyence VHX-6000 digital microscope). The manufacturer's town and country must be provided, in the case of solutions for laboratory use, the methods of preparation and precise concentration should be stated.

Single case reports:
Single case reports of outstanding interest or clinical relevance, short technical notes and brief investigative studies are welcomed. However, length must not exceed 1500 words including an unstructured abstract of less than 200 words. The number of figures/tables must not be more than 4 and references more than 25.

Animal studies:
In the case of animal studies, it is the responsibility of the author to satisfy the board that no unnecessary suffering has been inflicted on the animal concerned. Therefore, studies that involve the use of animals must clearly indicate that ethical approval was obtained and state the Home Office License number or local equivalent.

Drugs:
When a drug is first mentioned, it should be given by the international non-proprietary name, followed by the chemical formula in parentheses if the structure is not-well known, and, if relevant, by the proprietary name with an initial capital letter. Dose and duration of the drug should be mentioned in sufficient details. If the drug is already in use (licensed by appropriate licensing authority), generic name of the drugs should preferably be used followed by proprietary name in brackets.

Present the result in sequence in the text, table and figures. Do not repeat all the data in the tables and/or figures in the text. Summarize the salient points. Mention the statistics used for statistical analysis as footnote under the tables or figures. Figures should be professionally drawn. Illustration can be photographed (Black and White glossy prints) and numbered.

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Do not repeat the data in detail, already given in the results. Give implications of the findings, their strengths and limitations in comparison to other relevant studies. Avoid un-qualified statements and conclusions which are not supported by the data. Avoid claiming priority.

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Comments on the observation of the study and the conclusion derived from it. New hypothesis or implications of the study may be labeled as recommendations.

References:
References should be written in Vancouver style, numbered with arabic numerals in the order they appear in the text. The reference list should include all information, except for references with more than six authors, in which case give the first six names followed by et al.

Examples of correct forms of references:
Dorababu M, Prabha T, Priyambada S, Agrawal VK, Aryaa NC, Goel RK. Effect of Azadirachta indica on gastric ulceration and healing of bacopa monnierang in experimental NIDDM rats. *Indian J Exp. Biol 2004; 42: 389-397.*

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Any reader can provide feedback regarding published articles by writing letter to editor. The reader can also share any opinion in relation to medical science.

Prof. Dr. A.B.M. Bayezid Hossain
Editor-in-chief
Green Life Medical College Journal and
Principal
Green Life Medical College

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ABOUT THE COLLEGE

INTRODUCTION

In 2005, about fifty distinguished physicians of the country started a hospital to give specialized care in the private sector. They named it Green Life Hospital and it turned out to be a great success. So in 2009, they decided to establish a medical college which will be a non-government, non-profit, self-financing project and will serve the humanity.

This College came into existence in 2009. The college commences its activities with the enrollment of 51 students in the 1st batch in 2010. Since inception, the college has undergone tremendous development and became a splendid centre for learning and development. At present we are enrolling 120 students each year. Among them, numbers of seats are reserved for overseas students.

We continue to evaluate and improve our programme to ensure the best medical education for the students. Our educational strategy is to create a conducive learning environment and to steer our students to acquire adequate knowledge, skills and temperament to practice medicine and be a competent health care professional group.

Green Life Medical College (GLMC) is approved by the Ministry of Health and Family Welfare (MOHFW), Government of Bangladesh and Bangladesh Medical and Dental Council (BM&DC) and affiliated to the University of Dhaka.

AIMS AND OBJECTIVES OF THE COLLEGE

Aims:

To create a diverse and vibrant graduate scholars in medical discipline and to create highly competent and committed physicians for the country.

Objectives:

- To provide an appropriate learning environment where medical students can acquire a sound theoretical knowledge and practical skills with empathetic attitude to the people.
- To carry out research in medical sciences to scale up the standard of medical education in the country.

LOCATION

The campus is located at 31 and 32, Bir Uttom K. M. Shafiullah Sarak (Green Road), Dhanmondi, Dhaka. The location is at the heart of the mega city Dhaka and is facilitated with very good communication networks.

The Medical College and the Hospital complexes have been raised in a multistoried fully air-conditioned building with an arrangement of approximately 600 patients. The building is equipped with state-of-the-art infrastructure, excellent with an out-patient department and adequate in-patient facilities.

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EDITORIAL

Emerging Trends to Endemic Disease: Nipah Virus Infection in Bangladesh

Nipah virus (NiV) is an RNA enveloped virus, member of Paramyxoviridae family and an emerging zoonotic pathogen. Nipah virus causes severe respiratory illness and brain inflammation (encephalitis) and the fatality rate is reported to be high, between 40 percent and 75 percent among people infected with the virus. In 2024 and 2025, the case fatality rate was 100%.[1] The primary natural carriers are fruit bats (*Pteropus* species); humans can become infected through direct contact with infected bats or other animals, or by consuming food contaminated with bat saliva, urine or faces. "Human-to-human transmission of Nipah virus has also been reported among family and caregivers of infected patients" according to World Health Organization (WHO).[2]

Nipah virus was first identified in 1999 after an outbreak of encephalitis and respiratory illness among pig farmers and others who had close contact with infected pigs in Malaysia and Singapore. Since then, repeated outbreaks have been recorded in South Asia. Parts of northeast India and several districts in Bangladesh have reported cases, with Bangladesh experiencing outbreaks almost every year since 2001.[3]

About 348 Nipah virus cases have been reported in Bangladesh since 2001, about half of which occurred among people with a confirmed history of drinking raw palm sap. WHO says outbreak tend to occur on a seasonal basis from the months of December through April. On 3 February 2026, a laboratory-confirmed Nipah virus infection case died in Rajshahi which was confirmed by WHO.[4]

Nipah virus infection most often begins with non-specific symptoms, making early detection difficult. According to the US Centers for Disease Control and Prevention (CDC), the incubation period is generally believed to range from four to 21 days, though longer delays between exposure and illness have been reported in rare cases during previous outbreaks.[5] Patients typically develop a sudden flu-like illness marked by fever, headache, muscle pain and fatigue. In some cases, respiratory symptoms such as cough, shortness of breath or pneumonia also occur which ultimately leads to Acute Respiratory Distress Syndrome (ARDS). The most serious and defining complication of Nipah infection is inflammation of the brain, known as encephalitis. Neurological symptoms, including confusion, altered consciousness, seizures or coma, usually appear several days to weeks after the initial onset of illness.[6]

The samples should be collected as early as possible. The samples may be throat swab, urine, CSF, blood etc. In Bangladesh, Nipah virus can be diagnosed by RT-PCR and serological tests.[7]

There is currently no proven, targeted treatment for Nipah virus infection and no approved vaccine to prevent it. Care for patients remains largely supportive, focusing on managing symptoms and complications as they arise.[8,9]

With no vaccine available, preventing Nipah viral infection relies on awareness and simple protective measures, global health agencies recommend. Public health advice focuses on reducing contact with the virus, whether from bats, animals, or infected people.[9] Bats are the main carriers of Nipah. People should avoid consuming raw date palm sap or fruits that might have been contaminated by bats, WHO guidelines advise. Boiling fresh date palm juice and thoroughly washing or peeling fruits can reduce risk. Any fruit showing signs of bat bites should be discarded, the health agency advises. People handling sick animals or their tissues, or during slaughtering should wear gloves and protective clothing. Contact with infected pigs should be minimized, and pig farms in areas with fruit bats should take steps to protect feed and enclosures from bats.[10]

Its high fatality rate, potential for outbreaks, and lack of a vaccine made it a model for triggering a pandemic. The virus is listed by the WHO as a priority pathogen under its Research and Development Blueprint, which identifies epidemic threats that require urgent research.[2]

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ORIGINAL ARTICLE

Factors Related to Obesity among Female Students of a Medical College in Bangladesh

CHOUDHURY S[1], AZIM E[2], KAMRUN S[3], KARIM F[4]

Abstract

Introduction: *The prevalence of obesity is increasing at an alarming rate in many parts of the world. About 2.5 billion people are overweight and one third of them are obese worldwide. Obesity has now become a public health issue affecting both developed and developing countries simultaneously. It is a multifactorial condition caused by a combination of behavioral, social, environmental and genetic factors. Females are particularly vulnerable to developing serious chronic health conditions associated with obesity. The aim of the study was to identify overweight and obese female medical students during their undergraduate years and address the issue of obesity. Identifying and addressing the risk factors at an early stage may help to reduce various morbidities and long-term complications among female medical students.*

Methods: *A cross sectional descriptive study was conducted among 253 female medical students of Green Life Medical College from October 2022 to December 2022. Non probability purposive sampling was done and data were collected through face-to-face interview by using semi-structured questionnaire.*

Results: *Among 253 female medical students, half of them (54.9%) were found to be in normal BMI range. However, 28.9% and 13% were found overweight and obese respectively. Majority (88.5%) had their sleeping time less than 7 hours and maximum students (83%) had mentioned the usual bed time is after 12 am. More than one third female medical students (39.9%) did not exercises regularly. One third (36.8%) did exercise only for just 30 minutes among those who did exercise and only 21.1% did >30 minutes and about half (47.4%) preferred walking as their mode of exercise. Majority (88.9%) of them did not follow a diet chart. Family history of obesity was present in only 10.28% respondents. About one fourth female students (19.8%) had irregular menstrual cycles. Two third (78.66%) of female medical students in this study were found to be desk bounded for more than 3 hours in a day. This study revealed that obesity is significantly associated with menstrual irregularities (P= 0.024, Or= 0.490, 5% CI= 0.262-0.917) and desk bound (P= 0.039, Or= 1.961, 5% CI= 1.026-3.747). This study found no significant association between obesity with family income, physical activity, sleeping habit and food habit.*

Conclusion: *Obesity is a new challenge for developing countries and urges immediate attention and prevention. The prevalence of obesity and overweight increased among the young girls at a higher rate. Health promotion can be done by health education and lifestyle modification in terms of healthy sleep habit, desk bound habit and regular physical exercise.*

Keywords: *Obesity, BMI, Physical exercise, Menstrual irregularities, Deskbound*

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Introduction:

The prevalence of obesity is increasing at an alarming rate in many parts of the world. Adult obesity has more than doubled since 1990 and now 1 in 8 people were living with obesity globally.[1] According to World Health Organization (WHO), in 2022, 2.5 billion adults (18 years and older) were overweight and 890 million were obese.[1] Worldwide, at least 2.8 million people die each year as a result of being overweight or obese and an estimated 35.8 million (2.3%) of global **Disability-Adjusted Life Years** (DALYs) are caused by overweight or obesity.[2]

The problem of overweight or obesity is no more restricted only to the developed world.[3] It is a new challenge for developing countries and urges immediate attention and prevention. The prevalence of obesity and overweight increased among the young girls aged 18 to 23 at a higher rate.[4]

Based on the existing prevalence and the epidemiological evidence linking obesity with a range of physical and psychosocial health conditions, it is reasonable to describe obesity as a public health crisis that severely impairs the health and quality of life of the people.[3]

Overweight is a condition of excessive fat deposits. Obesity is a chronic complex disease defined by excessive fat deposits that can impair health.[1] Obesity may be measured and categorized in various ways, which include body mass index (BMI), waistsize, waist-to-hip ratio (WHR), and percent body fat. The most commonly used measure of obesity is BMI, which is a supporting marker for a person's body fat composition, based on a person's weight in kilograms and height in meters.[5] According to WHO, BMI of 18.5 to 24.9 is normal weight. Overweight is defined as a BMI of 25 to 29.9, and BMI of 30 or greater is considered obese. Moreover, morbid obesity is a BMI above 40.[6]

Overweight and obesity result from an imbalance of energy intake (diet) and energy expenditure (physical activity). It is a multifactorial disease resulting from a combination of individual factors, psycho-social factors and genetic variants.[1] Individual factors include lack of physical activity, dietary habit, sedentary lifestyle, hormonal imbalances and use of medication. Family history strongly influences the development of obesity. Stress increased cortisol levels which may redistribute fat into the stomach area and increase food cravings which is very common now-a-days amongst young females. Certain medications such as antidepressants, steroids, antipsychotics and diabetic medications may lead to weight gain.[7]

Obesity increases the risk of several health conditions including diabetes mellitus, hypertension, dyslipidemia, ischemic heart disease and obesity related cancers.[8] Women with a BMI greater than 45 kg/m² have a sevenfold higher risk of developing gallstones. Additionally, overweight and obesity are associated with menstrual irregularities, infertility, miscarriage and adverse pregnancy outcomes.[8]

Females are at a higher risk of being affected with serious chronic medical conditions deriving from obesity.[8] At the same time, the lack of an effective health system response to identify excess weight gain and fat deposition in their early stages is aggravating the progression to obesity. It is alarming as medical students are the role models for the general population to follow in terms of a healthy weight and diet. But very few studies have actually been conducted regarding the determinants related to obesity amongst female medical students. The college years are a formative period when many young females can be aware about their life choices and direct their lifestyle accordingly which will later on have great impacts in their life. So medical colleges can use this opportunity to reach students during their undergraduate years and addressing the risk factors earlier may lead to reduce different morbidities and lifelong complications. The conclusions deriving from this study will help the female medical students to mitigate these health risks by being informed and well prepared for high-risk situations.

Methods:

The study was carried out in Green Life Medical College from October to December, 2022 among 253 female students of Green Life Medical College (Phase I, Phase II, Phase III & Phase IV). Non probability purposive sampling was done. Data were collected using semi structured questionnaire by face-to-face interview. Ethical consideration was followed strictly. Participant anonymity and confidentiality were maintained. Participation was entirely voluntary and informed consent was provided to all participant. Objectives and goals were explained at the beginning of the questionnaire to all participating students and they enrolled after they get consent to participate in the study. After completion of data collection, those were checked and edited for consistency. Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 23.

Results:

Table I demonstrate that age of the students (n-=253) ranges from 18 to 25 years. Near half of them were within the age group of 22-23 years. Majority were Muslim (85.8%) and unmarried (95.7%). About half of the students (54.9%) had their family income above 60,000 taka. Two third of them (86.6%) belong from nuclear family. Regarding father's occupation, 41.5% were businessman followed by government service holder (28.9%), non-government service and other professions were 21.3% & 8.3% repetitively. Majority (67.2%) student's mother were homemaker followed by government service holder.

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Table I

Socio-economic condition of the participants

Variable	Frequency	Percentage (%)
Age distribution		
18-19	21	8.3
20-21	80	31.6
22-23	115	45.5
24-25	37	14.6
Monthly family income (in taka)		
>60000	139	54.9
<60000	114	45.1
Father's Occupation		
Businessman	105	41.5%
Government service	73	28.9%
Non-government service	54	21.3%
Other professions	21	8.3%
Mother's Occupation		
Homemaker	170	67.2%
Government service	49	19.4%
Non-government service	19	7.5%
Businesswomen	04	1.6%
Other professions	11	4.3

Table II outlines that about half of the respondents (54.9%) were within the normal BMI range. Considerable number of female (28.9%) were overweight and very few (3.2%) of them were underweight.

Table II

Distribution of BMI among participants according to WHO classification

BMI	Frequency	Percentage (%)
<18.5 (Underweight)	8	3.2
18.5-24.9 (Normal)	139	54.9
25-29.9 (Overweight)	73	28.9
≥30 (Obese)	33	13.0
Total	253	100.0

In figure 1, the study population was further divided into two groups which are Non-obese (BMI <30) and Obese (BMI e" 30), to assess the association of obesity and all studied variables, including food habits and regular physical activity. Non-obese group includes underweight, normal and overweight according to the range of BMI. The frequency of Non-obese and Obese that is 147 (58.1%) and 106 (41.9%) respectively.

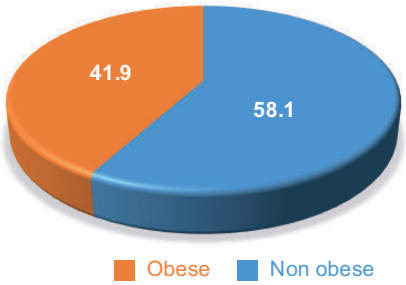

Figure 1: *Scenario of Obesity of the participants*

Figure 2 presents that most of them (80.2%) had regular menstrual cycles and about one fifth (19.8%) had irregular menstrual cycles. Only 17% (43) students had systemic disease and 83% (210) had not. Near half of them (56.9%) had diagnosed psychological health issues like anxiety, depression, revealed by asking question.

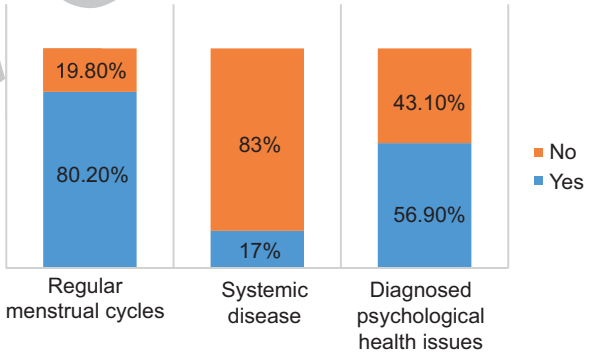

Figure 2: *Medical History of the participants*

Table III illustrates that about two third (78.7%) of the students were desk bounded for more than 3 hours in a day while 21.3% were less than 3 hours in a day. Two third (60.8%) of them did regular exercises but 39.9% did not. Among 152 who did regular exercises, half of them (50.7%) did exercise 3-4 days in a week while 29.6% did on a daily basis. The duration of exercise was less than 30 minutes (42.1%), while 36.8% did for just 30 minutes and only 21.1% did for more than 30 minutes. Majority (88.5%) had their sleeping time less than 7 hours and maximum students (83%) had mentioned the usual bed time is after 12 am.

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Table III

History of regular physical activity of the participants

Variable	Frequency	Percentage (%)
Desk bounded duration per day		
<3 hours	54	21.3
≥3 hours	199	78.7
Practice of exercise (n=253)		
Yes	152	60.1
No	101	39.9
Practice of exercise in a week (n=152)		
Daily	45	29.6
3-4 days	77	50.7
>4 days	30	19.7
Duration of exercise at a time (n=152)		
<30 minutes	64	42.1
30 minutes	56	36.8
>30 minutes	32	21.1
Sleep cycle		
< 7 hours	224	88.5
≥7 hours	29	11.5
Usual bed time		
Before12 am	43	17.0
After 12 am	210	83.0

Table IV shows food habit of the respondents. Among them only 11.1% respondents follow a diet chart. Maximum (71.5%) took meal 3-4 times per day and only 3.6% took 5-6 times per day. Majority (63.7%) consumed food 2 hours before bed time.

Table IV

Food habit of the participants

Food habit	Frequency	Percentage (%)
Following a diet chart		
Yes	28	11.1
No	225	88.9
Number of meals taken		
1-2	63	24.9
3-4	181	71.5
5-6	9	3.6
Consuming food 2 hours before bed		
Yes	161	63.7
No	92	36.3

Majority consumed sweet, fruits, soft drink and fast food several times in a week that is 26.5%, 42.3%, 35.6% and 29.6% respectively. (Table V)

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Table V

Duration of food consumption by the participants

Item of food consumed	Everyday	Once a week	Several time a week	Once a month	Several times in a month	Never
Sweet	21(8.3)	65 (25.7)	67 (26.5)	40(15.8)	48(19)	12(4.7)
Fruit	73(28.9)	34(13.4)	107(42.3)	14(5.5)	20(7.9)	5(2.0)
Fast food	28(11.1)	73(28.9)	75(29.6)	32(12.6)	40(15.8)	5(2.0)
Soft drink	33(13.0)	50(19.8)	90(35.6)	25((9.9)	31(12.3)	24(9.5)

Table VI highlights that there are significant association between obesity with menstrual cycle (P= 0.024, Or= 0.490, (5% CI= 0.262-0.917) and desk bound (P= 0.039, Or= 1.961, (5% CI= 1.026-3.747) but there was no significant association with others variable like menstrual cycle, regular physical exercise, diet chart, systemic disease, sleep hour etc.

Table VI
Relationship between BMI with other variables

Profile of the respondents	Pearson Chi Square (df)	p-value	OR	95% CI
Family income (e" 60,000 tk & > 60,000 tk)	7.598 (1)	0.006	2.051	1.227 – 3.430
Menstrual Cycle	5.091 (1)	0.024	0.490	0.262-0.917
Regular Physical exercise	0.744 (1)	0.388	1.253	0.75-2.093
Diet Chart	0.088 (1)	0.766	0.885	0.397-1.977
Systemic Disease	0.453 (1)	0.501	1.254	0.648-2.424
Sleep hour	0.004 (1)	0.952	0.976	0.445 – 2.141
Usual time to sleep	1.047 (1)	0.306	1.427	0.720 – 2.829
Consume food 2 hours before bed time	0.168 (1)	0.682	1.115	0.662-1.876
Desk Bound	4.244 (1)	0.039	1.961	1.026-3.747
Eat sweet	6.293 (5)	0.279		
Eat Fruits	2.013 (5)	0.847		
Fast Food	2.973 (5)	0.704		
Soft Drink	5.871 (5)	0.319		

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Discussion:

This study revealed that obese and overweight female students were remain between the age group of 18 to 25. A study done in Chennai, India where 49.7% of the undergraduate female medical students aged 17-24 years were found to be overweight and obese which is coincide with our study.[9]

In this study revealed that half of the female medical students (54.9%) were found to be in normal BMI range which is 18.5-24.9. However, 28.9% respondents were overweight followed by 13% were obese. A study conducted among female medical students of South India showed that the percentage of overweight and obese were 18.6% and 5% respectively.[10] An analytical study based on Bangladesh Demographic Health Survey 2014 found that around 23% of women of reproductive age in Bangladesh were obese and overweight.[11] But the result does not coincide with other study done in Saudi Arabia and other state of India. In Saudi Arabia the obesity rate is low among medical and dentistry students that is11.2%.[12] Similarly in Sri Siddhartha Medical College, *Karnataka,* India shows that 14.5% and 1.5% of the students were overweight and obese respectively.[13]Also in Pune, India the prevalence of female obese students was 16.6%.[14] But in a study of Shyam Shah Medical College, Madhya Pradesh, India reveled the high rate of overweight that is 32% and 12% were obese.[15] Lower prevalence of obesity among female medical students in those area stem from several interconnecting factors like medical education, awareness and lifestyle.

Alterations of daily sleeping hours, nap hours and sleeping late affects the health of the students badly.[16] Adults should sleep 7 or more hours per night on a regular basis to promote optimal health. Sleeping less than 7 hours per night on a regular basis is associated with adverse health outcomes, including weight gain and obesity, [17] In this study maximum students (88.5%) had their sleeping time less than 7 hours and majority (83%) had mentioned the usual bed time is after 12 am. Remarkably we did not found any significant association between obesity and sleeping habit. But a study conducted in Boston revealed that there is an inverse linear relationship between sleep duration and prevalence of obesity. A reduction of 1 hour sleep increased obesity prevalence by 4.1% (95% CI, 1.6-6.6; P = .002) and abdominal obesity prevalence by 3.6% (95% CI, 1.1-6.1; P = .007).[18]Another study found varying pattern of sleep among students in working days and non-working days and oversleeping at weekends were found to be directly associated with obesity.[19,20] Sleep deprivation is associated with growth hormone deficiency and elevated cortisol levels, both of which have been linked to obesity. Insufficient sleep can also impair the metabolism of food.[21]

Physical activity is another factor of great importance. This study revealed that, more than one third female medical

students did not exercise regularly. One third (36.8%) did exercise only for just 30 minutes among those who did exercise and only 21.1% did >30 minutes. Similarly, in Delhi, India 30% female were involved in physical activity for a minimum period of 30 minutes a day.[22] Our female students (47.4%) preferred walking as their type of exercise followed by other types such as jogging, yoga, skipping, cardio, zumba. But a study conducted in Lahore, Pakistan reveals that only 28.7% of medical students were involved in walking/jogging and 80.7% were not involved in any sptors.[23] In this study no significant association was observed between obesity and physical activity. But in other studies, conducted in Bangladesh and Ethiopia indicate the lack of physical activity contributes to obesity.[11] The reason behind this may be about half of the female medical students in this study were within normal BMI range and more than half did physical exercise.

The associate findings we got from our study that family history of obesity was present in only 10.28% respondents. Some studies revealed that there is a strong genetic component to the likelihood of having obesity.[6,12,15,24]

In this study it was found that about one fourth female students (19.8%) had irregular menstrual cycles. This study revealed that obesity is significantly associated with menstrual irregularities (P= 0.024, Or= 0.490, (5% CI= 0.262-0.917). Similarly, other studies showed that adolescent girls with obesity were significantly more likely to experience menstrual irregularities.[25,26]

It is recommended that individuals who sit for more than four hours per day are considered to have a sedentary lifestyle, which can increase their risk of developing various health problem. When a person remains inactive, the body burns fewer calories throughout the day. If calorie intake is not adjusted accordingly, this may result in weight gain.[1] Two third (78.66%) of female medical students in this study were found to be desk bounded for more than 3 hours in a day. This study found significant association between obesity and desk bound (P= 0.039, Or= 1.961, (5% CI= 1.026-3.747). But a study revealed that sitting time was not associated with obesity. Prior obesity was prospectively associated with time spent watching TV per week but no other types of sitting.[27]

This study found no significant association between obesity and food habit. But a study in Uttar Pradesh, India revealed that increased consumption of soft drinks, sweets and fast foods are seen to be significantly related to high BMI.[28] In a similar study in China, significant relation was found between the consumption of soft drink and fast food and overweight and obesity in adolescents.[29] This could be explained by nearly half of our female students (42.3%) were consuming fruits several times a week and only less percentage (35.6% and 29.6%) were found to have consumed soft drinks and fast foods several times a week respectively.

Conclusion:

Obesity has now become a public health issue affecting both developed and developing countries simultaneously. It is a complex health issue resulting from a combination of causes and individual factors such as behavioral, social, environmental and genetical. Therefore, the purpose of this study was to identify obesity among female medical students during their undergraduate years and address the issue early so that they may lead healthier lives. Health promotion can be achieved through health education and lifestyle modification, including maintaining healthy sleep habits, reducing desk-bound behavior by breaking up sedentary hours with frequent light movem ent, engaging in regular physical exercise and routinely checking BMI. Inclusion of different physical activities like indoor and outdoor games, sports, aerobic exercises can play a vital role. A range of physical activities from brisk walking for 150 minutes weekly to vigorous activity for 75 minutes weekly can be practiced along with regular sleeping time for at least 7 hours daily play a pivotal part to reduce obesity.

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ORIGINAL ARTICLE

Pattern of Breast Diseases in the Surgical OPD of a Medical College Hospital

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Abstract

Introduction: *Breast diseases are quite common conditions encountered in surgical practice, ranging from benign to malignant lesions. Early diagnosis and management are crucial to reduce morbidity and mortality. This study was conducted to determine the pattern and frequency of various breast diseases among female patients attending the surgical outpatient department of a medical college hospital.*

Methods: *It was a retrospective descriptive study conducted at Green Life Medical College hospital, Dhaka from 1st January, 2020 to 31st December, 2022. Female patients presenting with complaints regarding breast were recruited in the study. All of them underwent clinical breast examination followed by necessary radiological and / or histopathological investigations to diagnose the disease and were treated accordingly.*

Results: *A total of 292 patients were included. Fibrocystic disease was the commonest disease (45.89%) followed by fibroadenoma (19.18%), breast abscess (10.62%) and carcinoma (5.82%). Pain in the breast was the commonest presenting symptom (43.1%). Lump in the breast was found in 36.3%, while pain and lump were present in 29.8% of patients. 52% patients received surgical treatment whereas 48% patient were treated conservatively. Excision & biopsy was the commonest surgical procedure (26%) followed by Incision & drainage and wide local excision (9.6%).*

Conclusion: *Breast complaints are quite common in surgical practice. Benign breast diseases are more common than the malignant ones. Fibrocystic disease is the commonest breast problem. Malignancy of breast presents usually in late stages.*

Keywords: *Fibrocystic disease, Fibroadenoma, Breast abscess, Carcinoma*

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Introduction:

Breast symptoms are quite common in surgical practice.[1] Breast tissue undergoes continuous physiological and structural changes throughout a woman's reproductive life, influenced by hormonal fluctuations during puberty, menstruation, pregnancy, lactation, and menopause.[2] These variations make the breast vulnerable to a wide range of disorders, from self-limiting inflammatory conditions to life-threatening malignant lesions.[3]

Benign breast diseases are more prevalent than malignant ones and account for the majority of breast-related complaints in women attending surgical clinics.[4,5,6] Among them, fibrocystic disease is the most common, particularly affecting women of reproductive age.[7] Other frequent benign lesions include fibroadenoma, breast abscess, duct ectasia, and mastalgia. Malignant breast diseases, though less frequent, represent a major global health concern because of their high morbidity and mortality.

The presenting complaints of breast diseases vary considerably, but breast lump, pain, and nipple discharge are the most common.[8] A careful clinical evaluation, supplemented by imaging and histopathological

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investigations, is essential for accurate diagnosis and timely management. The "triple assessment" approach—clinical examination, imaging (mammography or ultrasonography), and cytological or histopathological confirmation—remains the cornerstone of evaluation for breast lesions.[9]

Globally, the pattern and frequency of breast diseases differ by geographic region, age, lifestyle, and awareness level.[10] In developing countries, lack of awareness, social stigma, and limited access to screening often lead to delayed presentation, especially for malignant cases. As a result, breast cancer frequently presents at an advanced stage, reducing the chances of curative treatment and survival.[11]

Understanding the local pattern of breast diseases helps clinicians prioritize diagnostic strategies, allocate resources efficiently, and plan preventive measures.[12] It also assists in identifying demographic or clinical factors associated with late presentation or poor outcomes.[13]

Therefore, this study was undertaken to determine the pattern of breast diseases among female patients presenting to the Surgical Outpatient Department (OPD) of Green Life Medical College Hospital, Dhaka. The findings are expected to contribute to the existing literature and improve awareness and management strategies for breast diseases in similar healthcare settings.

Methods:

This is a retrospective hospital based descriptive study conducted in the Surgical OPD of Green Life Medical College between 1st January, 2020 and 31st December, 2022. A total of 292 patients were included. The informed consent was taken from each participant and data collected regarding the personal information with the presenting complaints and findings.

All the female patients with complaints of breast problems were included in this study. They were evaluated by clinical history including detailed history of the breast complaint presented, general physical examination, examination of breast and axilla along with the supraclavicular fossa for any palpable lymph nodes.

All female patients attending the Surgical Outpatient Department of Green Life Medical College Hospital during the study period with breast-related complaints were included in the study, irrespective of age. Patients were included if they had adequate clinical evaluation and relevant investigations to establish a diagnosis. Male patients, incomplete records, and cases with inadequate diagnostic information were excluded from the analysis.

The necessary investigations such as Ultrasonography of both breasts and axillae, Mammography, Fine Needle Aspiration Cytology, Trucut biopsy, Cytology of nipple discharge, Excision & biopsy were done to assess various breast problems.

The final diagnosis was made with the clinical findings along with specific investigation of the breast and the histopathology of the lump.

A diagnosis of fibrocystic disease was made clinically in patients presenting with cyclical/ non-cyclical, premenstrual, bilateral or unilateral breast pain & tenderness associated with generalized lumpiness or nodularity of the breast. In few cases diagnosis was confirmed by biopsy or aspiration cytology.

Those with acute mastitis or breast abscess presented with acute breast pain, fever, lump and edema of the breast with marked tenderness and in some cases with history of lactation.

Diagnosis of patients presenting with benign or malignant breast lump were confirmed by FNAC, Trucut biopsy or excision biopsy.

Treatment was offered according to their diagnosis. Patients with fibrocystic disease were treated conservatively with reassurance, analgesics & support to the breasts and were advised to come for follow-up after three months to assess the outcome. Patients with acute mastitis were treated with antibiotics, analgesia & support to the breast and those with breast abscess underwent incision & drainage followed by regular dressing. Patients with benign breast lumps underwent excision & biopsy. Those with malignant breast lumps were managed with surgery, hormone therapy with or without chemotherapy.

All collected data were entered into Microsoft Excel (MS Office 2019) and analyzed descriptively. Results were expressed in terms of frequency, percentage, and proportion to demonstrate the distribution of various breast diseases, presenting symptoms, and treatment modalities. Findings were presented in tabulated and graphical forms for clarity and comparison.

This study was conducted in a single medical college hospital, which may limit the generalizability of the findings. The sample size was relatively small, and histopathological confirmation was not available for all cases.

Results:

A total number of 292 patients were seen during this period. Out of 292 patients, 90 (30.82%) presented in 2020 ,98 (33.56%) in 2021 and 104 (35.62%) in 2022. (Figure 1)

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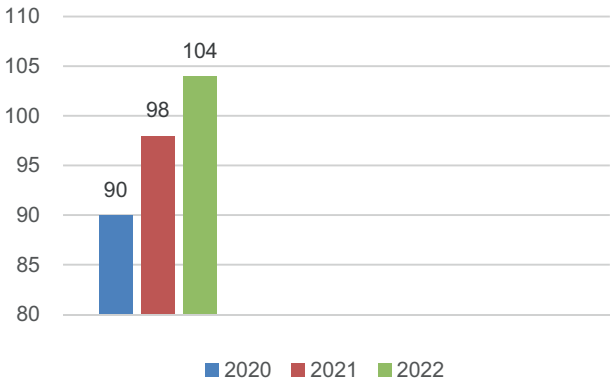

Figure 1: *Total Number of patients with breast disease presented in SOPD per year (2020-2022)*

52% patients were treated by surgical treatment and 48% patients received conservative treatment (Figure 2).

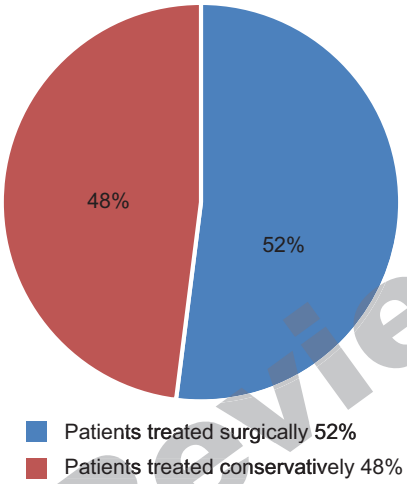

Figure 2: Ratio of patients treated surgically / conservatively

Fibrocystic disease was the commonest disease 134 (45.89%) followed by fibroadenoma 56 (19.18%) and carcinoma 17 (5.82%). (Table I).

Table I

Pattern of breast diseases presenting to the Surgical OPD

Disease	Number	Percentage
Fibrocystic disease	134	45.89
Fibroadenoma	56	19.18
Breast abscess	31	10.62
Carcinoma	17	5.82
Accessory axillary breast tissue	15	5.14
Cracked nipple	11	3.77
Granulomatous mastitis	11	3.77
Mastalgia	10	3.43
Duct ectasia	4	1.37
Fat necrosis	3	1.03
Lipoma	3	1.03
Galactocele	3	1.03
Eczematous lesion in nipple	2	0.69
Phylloides tumor	1	0.34
Total	292	100%

The breast disease and age distribution of the patients are shown in table II. Fibrocystic disease was commonly found in patients of the age group of 30-49yrs. Fibroadenoma was common in the age group of 20-29yrs. Whereas carcinoma was common in the age group of 50-59 yrs.

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Table II

Age distribution of breast disorders

Age/Years	Number	%	Fibrocystic disease	Fibroadenoma	Breast abscess	Carcinoma	Miscellaneous
10-19	35	11.99	10	12	9	-	4
20-29	96	32.88	33	28	8	-	27
30-39	78	26.71	41	14	3	2	18
40-49	51	17.46	35	1	8	3	4
50-59	20	6.85	8	1	3	8	-
60-69	11	3.77	7	-	-	3	1
70-79	1	0.34	-	-	-	1	-
Total	292	100	134	56	31	17	54

Lump in breast was the commonest symptom in females of the age group of 31-40 years. (Table III)

Table III

Common presenting symptoms in patients with breast diseases

Symptoms	Number	Percentage
Pain in breast	126	43.1
Lump in breast	106	36.3
Lumpiness and pain in breast	87	29.8
Nipple discharge	45	15.4
Nipple retraction	23	7.9
Lump in axilla	19	6.5
Eczema	2	0.7

Excision and biopsy was the commonest surgical procedure performed. (Table IV)

Table IV

Different surgical procedures done in patients presenting with breast diseases

Type of Surgery	Number	Percentage
Excision	76	26
Wide local excision	29	9.93
Incision & drainage	28	9.6
Simple mastectomy	13	4.45
Excision of axillary lump	3	1
Redo surgery	2	0.68
Toilet mastectomy	1	0.34
Total	152	52

Discussion:

In our study, fibrocystic disease was the commonest (45.89%) and fibroadenoma the second most common disease (19.18%). Breast abscess (10.62%) and carcinoma (5.82%) were third & fourth most common disease respectively. Ayoade et al., showed that fibroadenoma was the most common breast disease at their setting (26.2% and 48.7% respectively).[9] Carcinoma was the second most common breast disease in Nigeria by Ayoade et al.[9]

In our study, the age range was from 10 to 79 years, the commonest age group was 20-29year group. Benign breast diseases were common in younger age group (20-39) whereas carcinoma was more common in older age group (40-69). This is quite similar to many other studies. Das et al and other authors reported the common age group for benign breast disease to be 21-40 years.[10]

Roy et al., reported carcinoma in 11.6% of cases among breast patients attending a tertiary care hospital, which aligns with the malignant proportion seen in our study.[11] Panchal observed fibroadenoma as the predominant benign lesion, followed by fibrocystic disease and breast abscess.[12] Similarly, Hiremath and Hegde., found fibroadenoma (30%) and fibrocystic disease (28%) as the most common benign conditions.[6] However, in our study, fibrocystic disease predominated, consistent with the findings of Gupta et al., and Selvakumaran and Sangma, who also noted a higher incidence of fibrocystic changes compared to fibroadenoma.[13,14]

Benign breast diseases were more prevalent than malignant ones, similar to the observations of Karki et al. and Alam et al., who reported benign lesions forming the majority (70–80%) of breast pathologies.[15,16] The high incidence of benign lesions in our study reflects the younger age distribution of our patients. In our series, the commonest age group was 20–29 years, followed by 30–39 years. This finding is in accordance with Devkota et al., and Pote et al., who also found that benign breast diseases predominated in women between 20 and 40 years.[17,18]

Breast carcinoma was more common among women aged 50–59 years in our study, which correlates well with the findings of Khan et al., who noted that malignant cases were concentrated in the 5th and 6th decades of life.[19] This pattern supports the established fact that benign diseases affect younger women, while malignancy is more frequent in older age groups. Sharma et al., and Kumar et al., also observed a similar age-related trend in benign and malignant lesions.[20,21]

Regarding presenting symptoms, pain in the breast (43.1%) was the most frequent complaint in our study, followed by lump (36.3%) and both pain and lump (29.8%). Devi et al., and Pachani et al., reported similar findings, with breast lump being the predominant symptom followed by mastalgia.[22,23] The variation in symptom predominance may be due to differences in awareness and health-seeking behavior among populations.

In our study, 52% of patients required surgical treatment, while 48% were treated conservatively. The most common surgical procedure was excision and biopsy (26%), followed by incision and drainage (9.6%) for abscess cases. Anuradha et al., emphasized the importance of triple assessment - clinical, radiological, and cytological evaluation - in selecting appropriate management strategies.[24] Furthermore, Devkota et al., highlighted the role of imaging modalities in accurate diagnosis and treatment planning.[25]

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The relatively lower incidence of carcinoma (5.82%) in our study may reflect the fact that the data were derived from an outpatient setting, where benign and early-stage diseases are more common. However, like many South Asian studies, late presentation remains an issue, as highlighted by Adhikari et al., and Sabir et al., who noted delayed diagnosis and limited awareness as major contributors to poor breast cancer outcomes.[26,27]

Conclusion:

The present study reaffirms that benign breast diseases, particularly fibrocystic changes and fibroadenoma, constitute the majority of breast conditions in women attending surgical OPDs. Regular breast screening, early evaluation of breast symptoms, and public awareness programs are essential to detect malignant lesions earlier and improve overall outcomes.

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ORIGINAL ARTICLE

Diagnostic Validity of Clinical Provocative Tests in Carpal Tunnel Syndrome

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Abstract

Introduction: *Carpal tunnel syndrome (CTS) is the most prevalent mononeuropathy worldwide. Clinical diagnosis of CTS is important for screening of the condition and selecting cases to be confirmed with nerve conduction study (NCS), considering the limited availability of the latter. Numbers of clinical provocative tests have been designed for CTS. This study was conducted to compare the diagnostic validity of five widely used clinical provocative tests for CTS.*

Methods: *This was a case-control diagnostic accuracy study conducted on NCS-proven 140 CTS cases and 202 controls. Five clinical provocation tests – Phalen's test, reverse Phalen's test, Tinel's test, Durkan's test and arm raising test were performed on all participants. Sensitivity, specificity, positive and negative predictive values, positive and negative likelihood ratios, overall accuracy and weighted kappa coefficient were calculated.*

Results: *Phalen's test, reverse Phalen's test, and Tinel's test showed low sensitivity (48-50%) despite their high specificity (91-92%) and moderate accuracy (73-75%). Durkan's test demonstrated 73% sensitivity, 86% specificity and 80% accuracy. Arm raising test results exhibited a poor sensitivity of 42%, despite a high specificity of 89%. Durkan's test had the strongest degree of agreement with the NCS diagnosis with a weighted kappa coefficient of 0.6.*

Conclusion: *Durkan's test exhibited the best diagnostic performance among five most commonly used clinical provocative tests for CTS.*

Keywords: *Carpal tunnel syndrome, Clinical provocative tests, Diagnostic validity*

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Introduction:

Carpal tunnel syndrome (CTS) is the symptomatic compressive neuropathy of the median nerve at wrist.[1] It is the most common mononeuropathy, accounting for more than 90% cases.[2] Prevalence of CTS is 3.8% in general population with a female predominance and a peak age from 40 to 60 years.[3-5] CTS causes a high economic burden because of high number of days away from work and the cost of surgical treatment.[3,6]

The pathophysiology of CTS involves a combination of mechanical trauma, increased pressure and ischemic injury to the median nerve within the carpal tunnel.[7] CTS commonly presents with tingling, numbness and pain in the hand and a reduction of the grip strength and function of the affected hand.[8,9] Symptoms get worse at night and activities that need wrist flexion.[10] Common differential diagnoses of CTS are cervical radiculopathy, brachial plexopathy, proximal median neuropathy and thoracic outlet syndrome.[2] Nerve conduction study (NCS) is the

gold standard diagnostic investigation for CTS, despite its limitations.[11,12]

Several provocative tests are developed to aid the clinical diagnosis of CTS. Phalen's test, reverse Phalen's test, Tinel's test, Durkan's test and arm raising test (ART) are the most widely used clinical provocative tests for CTS.[13-17]

The sensitivity and specificity of Phalen's test, reverse Phalen's test, Tinel's test, Durkan's test and ART are 50-85% and 33-96%, 50% and 79%, 42-53% and 56-96%, 71-87% and 22-96%, and 76-88% and 60-98%, respectively.[18-23]

Numbers of researchers have questioned the validity of these provocative tests.[24-26] However, there is no published research work on the validity of all these provocative tests in Bangladeshi population.

This study was conducted to evaluate the diagnostic validity of the clinical provocative tests in CTS among Bangladeshi people.

Methods:

This was a case-control diagnostic accuracy study conducted on 140 CTS cases and 202 controls attending the Medicine and Physical Medicine outpatient at Shaheed Monsur Ali Medical College Hospital from July 2023 to June 2024. CTS was defined as presence of both 1. One or more of tinging, numbness or pain in hand, and 2. Electrophysiological evidence of CTS in nerve conduction study (NCS).[26] The control group comprised individuals who did not complain of any tingling, numbness or pain in hands.

Five clinical provocation tests – Phalen's test, reverse Phalen's test, Tinel's test, Durkan's test and arm raising test were performed on all participants following standard protocols. Phalen's test was performed by maximal wrist flexion held for 60 seconds while elbow is extended.[27] Reverse Phalen's test was done by keeping the wrist and fingers in extended position for 60 seconds.[14] Tinel's test was conducted with percussion over the median nerve just proximal to the wrist crease.[19] The procedure for the Durkan's test involved maintaining manual compression of the carpal tunnel for 30 seconds.[19] In the Arm Raising Test (ART), participants elevated both hands above their heads and sustained this posture for 120 seconds.[22] A test was recorded as positive if paresthesia developed in the fingers in the median nerve distribution.

The results of the provocative tests were documented in case record forms. Sensitivity (SEN), specificity (SPE), positive predictive value (PPV), negative predictive value (NPV), positive likelihood ratio (LR+), negative likelihood ratio (LR-) and overall accuracy were calculated. The agreement between NCS results and individual clinical provocative test results was evaluated with weighted kappa coefficient (WK). Microsoft Excel 2016 and Statistical Package for the Social Sciences (SPSS) 26.0 were used for the final analyses.

The study received formal approval from the Institutional Ethical Review Board (IERB) of Shaheed Monsur Ali Medical College Hospital (Ref: SMAMC/04/2023/1787, dated 04/10/2023).Written informed consent was taken from all participants. The nature & aim of the study were explained to every study participant in simple understandable language before requesting their consent. The identity of the study participants were kept confidential. Every participant had the right to withdraw from the study at any time.

This study was carried out at a single center with a limited number of participants, which might constrain the generalizability of the study's results.

Results:

The mean age of the CTS group was significantly higher than that of the control group (44.5±10.3 years versus 37.6±10.6 years, p-value <0.0001). Among the CTS group, 132(94.3%) were females, and 8(5.7%) were males. The control group comprised 126(62.4%) females and 76(37.6%) males.

Table I shows the number results of the five provocative tests. Phalen's test, reverse Phalen's test, Tinel's test, Durkan's test and ART were positive in 50%, 49%, 48%, 73% and 42% CTS cases, respectively. In the control group, positive results were obtained in 8% Phalen's test, reverse Phalen's test and Tinel's test each, 14% in Durkan's test and 11% in ART, respectively.

Table I

Results of different clinical provocative tests for CTS

Test	CTS		Controls	
	Positive[1]	Negative[1]	Positive[1]	Negative[1]
Phalen's test	70 (50.0)	70 (50.0)	16 (7.9)	186 (92.1)
Reverse Phalen's test	69 (49.3)	71 (50.7)	17 (8.4)	185 (91.6)
Tinel's test	67 (47.9)	73 (52.1)	18 (8.9)	184 (91.1)
Durkan's test	102 (72.9)	38 (27.1)	28 (13.9)	174 (86.1)
Arm raising test	59 (42.1)	81 (57.9)	23 (11.4)	179 (88.6)

1 – percentages are given within parentheses

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Diagnostic validities of the provocative test are illustrated in Table II. Phalen's test showed 50% sensitivity, 92% specificity, 81% PPV, 73% NPV, 6.3 LR+, 0.5 LR- with 75% accuracy. A sensitivity of 49%, specificity of 92%, PPV of 80%, NPV of 72%, LR+ of 5.9, LR- of 0.6, and an accuracy rate of 74% was observed in the reverse Phalen's test. In the assessment of Tinel's test, the findings revealed a sensitivity of 48%, specificity of 91%, PPV of 79%, NPV of 72%, LR+ of 5.3, LR- of 0.6, and accuracy of 73%. The evaluation of Durkan's test revealed 73% sensitivity, 86% specificity, 79% PPV, 82% NPV, 5.3 LR+, 0.3 LR-, and 81% accuracy. Arm raising test results exhibited a sensitivity of 42%, specificity of 89%, PPV of 72%, NPV of 69%, LR+ of 3.7, LR- of 0.7, and accuracy of 70%.

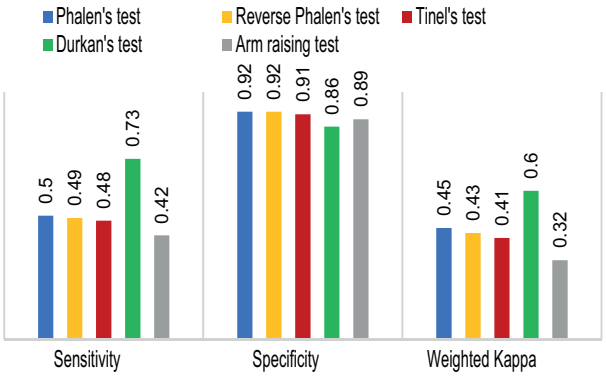

Figure 1: *Sensitivity, specificity and weighted kappa coefficient of provocative test for CTS*

Table II

Diagnostic validity of different clinical provocative tests for CTS

Parameters	Phalen's test[1]	R Phalen's test[1]	Tinel's test[1]	Durkan's test[1]	Arm raising test[1]
SEN	0.50	0.49	0.48	0.73	0.42
	(0.41-0.59)	(0.41-0.58)	(0.39-0.57)	(0.65-0.80)	(0.34-0.90)
SPE	0.92	0.92	0.91	0.86	0.89
	(0.88-0.95)	(0.88-0.95)	(0.86-0.95)	(0.81-0.91)	(0.83-0.946)
PPV	0.81	0.80	0.79	0.79	0.72
	(0.73-0.88)	(0.71-0.87)	(0.70-0.86)	(0.72-0.84)	(0.63-0.80)
NPV	0.73	0.72	0.72	0.82	0.69
	(0.69-0.76)	(0.69-0.76)	(0.68-0.75)	(0.78-0.86)	(0.65-0.72)
LR+	6.3	5.9	5.3	5.3	3.7
	(3.8-10.4)	(3.6-9.5)	(3.7-7.5)	(3.7-7.5)	(2.4-5.7)
LR-	0.5	0.6	0.6	0.3	0.7
	(0.5-0.6)	(0.5-0.7)	(0.5-0.7)	(0.2-0.4)	(0.6-0.8)
Accuracy	0.75	0.74	0.73	0.81	0.70
	(0.70-0.79)	(0.69-0.79)	(0.68-0.78)	(0.76-0.85)	(0.64-0.74)
WK[2]	0.45	0.43	0.41	0.60	0.32
	(0.35-0.54)	(0.34-0.53)	(0.32-0.51)	(0.51-0.68)	(0.23-0.43)

1-estimate (95% confidence interval)2-Weighted Kappa Coefficient

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Durkan's test exhibited the strongest degree of agreement with the NCS diagnosis, with a WK of 0.6, while ART had the weakest agreement with a WK of 0.32. The other three provocative tests showed WK between 0.41 and 0.45.

Discussion:

The CTS patients examined in this study present a mean age of 44.5 years, with a female representation of 93.4%, comparable to findings from contemporary studies.[3-5]

Phalen's test, reverse Phalen's test, and Tinel's test showed analogous diagnostic potentials, characterized by low sensitivity (48-50%) despite their high specificity (91-92%) and moderate accuracy (73-75%). Recent studies revealed similar sensitivity and specificity of Phalen's and Tinel's tests.[20,21] A study on reverse Phalen's test found 55% sensitivity with 78% specificity.[18] ART demonstrated poor performance metrics, with a sensitivity of 42% and an accuracy of 70%, notwithstanding its high specificity. This finding contrasts with that of two recent studies, conducted in the United Kingdom and South Korea demonstrating very high sensitivity.[22,23]

The Durkan test demonstrated the highest sensitivity at 73%, while also achieving a commendable specificity of 86% and an accuracy rate of 81%. A recent study in USA found a very low specificity of 22% of Durkan's test despite 75% sensitivity.[19] However, Richter et al showed high sensitivity (87%) and specificity (96%) of Durkan's test.[21]

Durkan's test achieved the best results, exhibiting considerably higher sensitivity and weighted kappa coefficient than that of the remaining tests, with a reasonable specificity. (Figure-1)

Conclusion:

Clinical provocative tests are useful in the diagnosis of CTS. Durkan's test outperformed the others.

Conflict of interest:

The authors do not have any conflicts of interest.

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REVIEW ARTICLE

Fatigue as a Feature of Rheumatic and Musculoskeletal Diseases: A Narrative Review for Clinical Practice

HASAN ATMT[1]

Abstract

Fatigue is a prevalent and debilitating symptom in patients with rheumatic and musculoskeletal diseases (RMDs), yet it remains inadequately addressed in clinical practice. This narrative review synthesises evidence from a comprehensive scoping review of 134 reviews examining fatigue across rheumatoid arthritis, spondyloarthritis, osteoarthritis, and fibromyalgia, supplemented by recent mechanistic, measurement, and intervention studies. No universally agreed definition of fatigue exists, though subtypes include physical and mental fatigue. Twenty-five self-reported measurement instruments have been identified, with PROMIS (Patient Reported Outcomes Measurement Information System) Fatigue most frequently selected by patients (77.9% uptake). Key determinants include pain, physical function, depressive symptoms, female sex, and stress. Fatigue significantly impacts work performance, physical activity, social functioning, and quality of life. Non-pharmacological interventions (exercise, cognitive-behavioural therapy) demonstrate small effect sizes whilst pharmacological interventions in the form of different biologics and JAK inhibitors show clinically meaningful effects. Fatigue in RMDs is a complex, multidimensional phenomenon requiring tailored management approaches. Rheumatologists must recognise fatigue as a cardinal symptom warranting systematic assessment and individualised intervention strategies.

Keywords: Fatigue, Rheumatic diseases, Rheumatoid arthritis, Spondyloarthritis, Patient-reported outcomes

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Introduction:

Fatigue represents one of the most prevalent and disabling symptoms experienced by patients with rheumatic and musculoskeletal diseases (RMDs), yet it remains inadequately managed in rheumatological care. Whilst rheumatologists traditionally focus on objective markers of disease activity—joint counts, inflammatory markers, and radiographic progression—patients consistently identify fatigue as a priority symptom that profoundly impacts their quality of life and functional capacity.[1]

The complexity of fatigue in RMDs extends beyond simple tiredness. It encompasses physical exhaustion, cognitive impairment, and emotional depletion that persist despite adequate rest. Unlike transient fatigue experienced by healthy individuals after exertion, fatigue in RMDs is often chronic, unpredictable, and disproportionate to activity levels. This disconnection between patient experience and physician focus has created a significant gap in clinical care.[1]

A comprehensive scoping review of 134 reviews examining fatigue across rheumatoid arthritis (RA), spondyloarthritis (SPA), osteoarthritis (OA), and fibromyalgia (FM) has synthesised the extensive literature on this topic.[1] Combined with emerging mechanistic insights and digital health data demonstrating patient priorities, this evidence provides rheumatologists with an evidence-based framework for understanding and managing this cardinal symptom.[2,3] This narrative review compiles information from the scoping review and evidence gathered from subsequent studies to generate an updated synthesis of the existing scientific literature about fatigue in RMDs.

Definition and Conceptualisation of Fatigue

Despite its prevalence, no universally agreed definition of fatigue exists in rheumatology.[1] This reflects the multidimensional nature of the symptom and challenges in capturing subjective experiences through standardised definitions.

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The most commonly recognised distinction is between physical fatigue (asthenia) and mental fatigue. Physical fatigue is characterised by inadequate energy resources, feeling of having no energy, and need to rest. Patients describe this as "tiredness" that is present continuously, worsens with physical exertion, and increases as the day progresses. Importantly, resting may provide temporary relief but does not fully restore energy levels.[1] Mental fatigue encompasses cognitive difficulties, reduced concentration, and mental exhaustion that may occur independently of physical symptoms.

Some researchers have drawn parallels between fatigue in RMDs and cancer-related fatigue, suggesting shared pathophysiological mechanisms.[3] This conceptualisation emphasises the chronic, debilitating nature of the symptom and its resistance to conventional rest-based management strategies.

Clinically, it is essential to recognise that fatigue in RMDs is not simply a consequence of disease activity or inflammation. Rather, it represents a complex interplay of biological, psychological, and social factors that may persist even when traditional markers of disease activity are well controlled.[1,4] This understanding has important implications for assessment and management.

Pathophysiology

The pathophysiology of fatigue in RMDs is multifactorial, involving inflammatory, neuroendocrine, and psychosocial mechanisms.[1,2,3,5]

Inflammatory Mechanisms: Peripheral inflammatory disease is associated with centrally activated interleukin-1 (IL-1) systems in both humans and animal models [2]. This peripheral-to-central inflammatory signalling represents a key mechanism by which systemic inflammation translates into central nervous system symptoms, including fatigue. Cytokines such as IL-6 play particularly important roles in RA-related fatigue, and the link between chronic inflammation and pain pathways provides additional mechanistic insight.[3,5] The concept of "sickness behaviour"—an evolutionarily conserved response to infection or inflammation characterised by fatigue, reduced activity, and social withdrawal—helps explain why inflammatory diseases produce profound fatigue even when peripheral disease activity appears controlled.

Neuroendocrine Dysregulation: Fatigue in RMDs is associated with dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis and autonomic nervous system.[1,3] These neuroendocrine disturbances may persist independently of peripheral inflammation and contribute to the chronicity of fatigue symptoms.

Central Sensitisation and Pain: The relationship between fatigue and pain in RMDs is bidirectional and complex.[3] Chronic pain contributes to fatigue through multiple mechanisms, including sleep disturbance, reduced physical activity, and psychological distress. Conversely, fatigue may lower pain thresholds and amplify pain perception through central sensitisation mechanisms.

Psychosocial Factors: Depression, anxiety, stress, and poor sleep quality contribute significantly to fatigue in RMDs.[1,4] These factors act both as direct causes of fatigue and as moderators of the relationship between disease activity and fatigue severity.

Recent mechanistic research emphasises that fatigue in RA and other RMDs results from integration of multiple pathophysiological processes rather than a single dominant mechanism.[1,2,3,5] This complexity explains why single-target interventions often produce modest effects and supports the rationale for multimodal management approaches.

Measurement Instruments and Clinical Assessment

Systematic assessment of fatigue is essential for effective clinical management. A comprehensive review identified 25 self-reported measurement instruments for fatigue in RMDs, with several demonstrating strong psychometric properties.[1,6,7,8]

Key Validated Instruments: The most extensively validated instruments include the Functional Assessment of Chronic Illness Therapy-Fatigue (FACIT-F), the Short Form-36 Vitality subscale (SF-36 Vitality), the Bristol Rheumatoid Arthritis Fatigue Multidimensional Questionnaire (BRAF-MDQ), the Bristol Rheumatoid Arthritis Fatigue Numerical Rating Scale (BRAF-NRS), and the Fatigue Severity Scale (FSS).[8]

The **BRAF instruments** deserve particular attention for clinical practice. The BRAF-MDQ assesses multiple dimensions of fatigue (physical, cognitive, emotional, and living with fatigue), whilst the BRAF-NRS provides a simple 0-10 rating scale suitable for routine clinical use. Both versions demonstrate strong reliability and sensitivity to change.[6]

PROMIS Fatigue has emerged as the most frequently selected instrument by patients in digital health contexts, with 77.9% uptake in longitudinal monitoring studies.[1] The Patient-Reported Outcomes Measurement Information System (PROMIS) Fatigue scale offers standardised T-score metrics that facilitate comparison across studies and populations, computerised adaptive testing options, and extensive validation across multiple

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rheumatic diseases. Conversion algorithms allow cross-walking between FACIT-F and PROMIS Fatigue scores thereby permitting the comparison of scores obtained across different centres utilizing different scales and thus bringing homogeneity of measurements.[9,10,11]

Clinical Assessment Recommendations: For routine clinical practice, rheumatologists should implement brief fatigue screening using a single-item numerical rating scale (0-10) at each visit. For patients reporting significant fatigue (e”4/10), more comprehensive assessment using a multidimensional instrument such as the BRAF-MDQ or PROMIS Fatigue can guide management planning.[6,8,12] Assessment should extend beyond severity ratings to encompass functional impact, temporal patterns, and potential contributing factors such as sleep quality, mood, and medication side effects.

Determinants of Fatigue

Understanding the determinants of fatigue in RMDs is essential for developing targeted interventions. The scoping review identified numerous disease-related and contextual determinants, with pain, physical function, and depressive symptoms emerging as the most frequently studied disease-related factors, and female sex and stress as the most frequent contextual determinants.[1]

Disease Activity and Inflammation: Whilst inflammatory disease activity contributes to fatigue, the relationship is complex. Longitudinal studies examining fatigue trajectories in patients with established RA starting biologic DMARD therapy found that patient-reported measures (pain, patient global assessment, tender joint counts, anxiety, and depression) predicted persistent fatigue trajectories more strongly than objective markers of peripheral inflammation [4]. This finding has important clinical implications: achieving low disease activity or remission may not fully resolve fatigue, and additional interventions targeting pain, function, and psychological factors may be necessary.

Pain and Physical Function: Pain consistently emerges as one of the strongest determinants of fatigue across RMDs.[1,4,13,14] The bidirectional relationship between pain and fatigue creates a vicious cycle. Physical function limitations similarly contribute to fatigue through multiple mechanisms including deconditioning and reduced activity levels. In patients with ankylosing spondylitis, fatigue associates strongly with disease activity, quality of life, and inflammatory bowel symptoms.[13,14]

Psychological Factors: Depressive symptoms, anxiety, and stress are consistently associated with fatigue severity across RMDs.[1,4] Depression contributes independently to fatigue beyond its association with disease activity, and interventions targeting mood may produce benefits in fatigue even without changes in inflammatory markers.

Sleep and Demographic Factors: Poor sleep quality contributes significantly to fatigue in RMDs, though the relationship is bidirectional.[1] Female sex is consistently associated with higher fatigue severity across RMDs.[1] Other contextual factors including stress, work demands, and social support also influence fatigue.

Importantly, when quantified, associations between fatigue and its determinants are typically small to moderate in magnitude.[1,4] This underscores the multifactorial nature of fatigue and suggests that comprehensive approaches addressing multiple contributing factors simultaneously are more likely to achieve meaningful improvements.

Consequences of Fatigue

Fatigue in RMDs has profound consequences across multiple life domains, significantly impacting work performance, physical activity, social functioning, and overall quality of life.[1,3,14,15,16]

Occupational Impact: Work performance is the most frequently studied consequence of fatigue in RMDs.[1] Fatigue contributes to reduced work productivity, increased absenteeism, and work disability. For patients with ankylosing spondylitis, severe fatigue is associated with significantly reduced occupational participation and quality of life.[16]

Physical Activity and Function: Fatigue creates a vicious cycle with physical activity and function. Fatigue reduces engagement in physical activity, leading to deconditioning, which in turn exacerbates fatigue and functional limitations. In patients with fibromyalgia, fatigue shows complex relationships with physical activity levels and quality of life.[15]

Social Functioning and Quality of Life: Fatigue significantly impacts social roles, relationships, and participation in valued activities.[1] Patients may withdraw from social engagements, reduce participation in family activities, and experience strain in personal relationships. Across all RMDs, fatigue is consistently associated with reduced health-related quality of life.[13,14,15,16] In patients with spondyloarthritis and ankylosing spondylitis, fatigue associates with poorer quality of life, higher disease activity scores, and sleep disturbance.[13,14,16]

The consequences of fatigue extend across all life domains, yet many patients report that their rheumatologists do not

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adequately address this symptom or recognise its impact.[1] Systematic assessment of fatigue and its consequences should be integrated into routine rheumatology care.

Management Strategies

Management of fatigue in RMDs requires a comprehensive, individualised approach that addresses multiple contributing factors. Evidence supports both non-pharmacological and pharmacological interventions, though effect sizes are typically modest.[1,17,18,19,20]

Non-Pharmacological Interventions

Cognitive-Behavioural Therapy (CBT): Group cognitive-behavioural programmes specifically designed for RA fatigue have demonstrated efficacy in randomised controlled trials.[18,19] The RAFT (Reducing Arthritis Fatigue by clinical Teams) programme, delivered by nurses or occupational therapists, produces small to moderate sustained improvements in fatigue impact, coping strategies, mood, and some functional outcomes.[19] Qualitative research indicates that patients find CBT approaches acceptable and value the opportunity to develop self-management skills.[21] Mechanisms of benefit include improved coping strategies, cognitive restructuring of unhelpful beliefs about fatigue, activity pacing, and enhanced self-efficacy.

Exercise Interventions: Supervised exercise programmes, including high-intensity interval training, strength training, and sustained aerobic activity, reduce multidimensional fatigue and improve health-related quality of life in RA.[20,22] A recent randomised controlled study demonstrated that high-intensity exercise improves multidimensional fatigue and quality of life in RA, whilst longitudinal studies confirm the sustained role of physical activity in overcoming fatigue.[20,22] Successful implementation requires careful programme design with gradual progression, individualisation based on patient capabilities, and strategies to support adherence.

Pharmacological Interventions

Biologic Therapies: A Cochrane systematic review of biologic response modifiers found small to moderate reductions in patient-reported fatigue compared to placebo across trials, with moderate overall evidence quality.[17] Trial-specific analyses of sarilumab demonstrate clinically meaningful improvements in PROMIS and FACIT-F fatigue scores after treatment.[10,11,23] Anti-TNF therapy has been associated with rapid improvement in fatigue and sleep in active RA in observational studies.[24]

JAK Inhibitors and Targeted Synthetic DMARDs: Emerging evidence suggests that JAK inhibitors may produce meaningful and sometimes rapid fatigue improvements. Conversion studies and patient-reported surveys indicate that baricitinib and other JAK inhibitors can produce clinically significant reductions in fatigue.[9,25]

Integrated Management Approach: Optimal fatigue management typically requires integration of pharmacological and non-pharmacological strategies tailored to individual patient circumstances. Assessment should identify the relative contributions of active inflammation, pain, physical deconditioning, sleep disturbance, mood symptoms, and contextual factors to each patient's fatigue experience. Management plans should then address the most relevant contributing factors through appropriate combinations of disease-modifying therapy, exercise programmes, psychological interventions, sleep management, and other targeted strategies. Regular reassessment using validated instruments allows monitoring of treatment response and adjustment of management plans.[1,17,18,19,20,22]

Patient Perspectives and Digital Health

Understanding patient perspectives on fatigue is essential for delivering patient-centred care. Digital health data provide unique insights into patient priorities and preferences for symptom monitoring.[1]

Patient Priorities: When given the opportunity to select which symptoms to monitor using digital health platforms, patients with RMDs consistently prioritise fatigue above other domains. In longitudinal studies, 77.9% of patients selected PROMIS Fatigue for tracking, making it the most frequently selected single instrument.[1] This high uptake rate demonstrates the sustained importance of this symptom to patients.

Patient-Provider Gap: A significant gap exists between patient priorities and traditional clinical focus. Whilst patients consistently identify fatigue as a top priority, many rheumatologists do not routinely assess or address this symptom.[1] This disconnect contributes to patient dissatisfaction and may undermine the therapeutic relationship. Qualitative research reveals that patients value being heard, having their fatigue validated as a legitimate symptom, and receiving practical strategies for self-management.[21]

Feasibility of Digital Monitoring: Digital health studies demonstrate that remote symptom monitoring via smartphone applications is highly feasible for patients with RMDs.[1] Patients are willing to complete brief assessments (median 30 seconds per instrument) regularly when the measures address symptoms they consider relevant.

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Implications for Clinical Practice: Patient perspectives should inform clinical practice in several ways. First, rheumatologists should routinely ask about fatigue and validate it as an important symptom worthy of clinical attention. Second, assessment tools should use simple, patient-friendly language. Third, management discussions should incorporate patient priorities and preferences, recognising that patients may prioritise fatigue management even when traditional disease activity measures suggest good control.[1,21]

Key Messages:

This narrative review has synthesised current evidence to provide specialist rheumatologists with an evidence-based framework for understanding and addressing this complex symptom.

Several key messages emerge from the evidence. First, fatigue in RMDs is multidimensional and multifactorial, resulting from complex interactions among inflammatory, neuroendocrine, psychological, and social factors.[1,2,3,5] This complexity explains why single-target interventions typically produce modest effects and supports the rationale for comprehensive, individualised management approaches. Second, validated measurement instruments are available and should be integrated into routine clinical practice.[6,7,8,9] Third, the determinants of fatigue extend beyond disease activity and inflammation to encompass pain, physical function, mood, sleep, and contextual factors, with patient-reported measures often predicting fatigue trajectories more strongly than objective inflammatory markers. Fourth, the consequences of fatigue are profound and pervasive, significantly impacting work performance, physical activity, social functioning, and quality of life.[1,4,13,14,15,16] Fifth, both non-pharmacological interventions (particularly CBT and exercise) and pharmacological interventions (biologics and JAK inhibitors) demonstrate efficacy for fatigue reduction, though effect sizes are typically modest.[9,10,17-20,22,24,25]

From a clinical practice perspective, several recommendations can be made. Fatigue should be systematically assessed in all patients with RMDs using brief, validated instruments, with more comprehensive evaluation for those reporting significant symptoms.[6,8] Assessment should extend beyond severity ratings to encompass functional impact, temporal patterns, and potential contributing factors. Management should be individualised and multimodal, combining disease-modifying therapies to control inflammation with non-pharmacological interventions addressing behavioural, psychological, and lifestyle factors.[1,17,18,19,202,22] Realistic expectations about treatment outcomes should be established, acknowledging that current interventions produce incremental improvements rather than complete fatigue resolution.

Importantly, clinicians must validate fatigue as a legitimate and important symptom worthy of clinical attention. This validation begins with asking about fatigue, listening to patients' experiences, and acknowledging the profound impact it has on their lives. Patient perspectives consistently identify fatigue as a top priority, yet many patients report that their rheumatologists do not adequately address this symptom. Closing this patient-provider gap requires systematic integration of fatigue assessment and management into routine rheumatology care.[1]

Looking forward, several research priorities emerge. First, improved understanding of fatigue mechanisms is needed to identify novel therapeutic targets.[2,3,5] Second, development and testing of interventions specifically designed to target fatigue are essential. Third, identification of patient subgroups who may respond preferentially to specific interventions could enable more personalised treatment approaches. Fourth, implementation research examining how to effectively integrate systematic fatigue assessment and evidence-based management into routine clinical practice is needed to translate research evidence into improved patient outcomes.

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Conclusion:

Fatigue in RMDs is a cardinal symptom that demands systematic attention from rheumatologists. By recognising its importance, assessing it routinely, and implementing comprehensive, individualised management strategies, rheumatologists can better address patient priorities and improve quality of life for the millions of individuals living with debilitating fatigue. The extensive evidence base synthesised in this review provides a foundation for evidence-based practice, whilst patient perspectives remind us that effective care requires not only clinical expertise but also empathy, validation, and partnership with patients in managing this challenging symptom.

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Ingested Sharp-Pointed Foreign Body in Children: A Case Report

SAHA R L[1]

Abstract

Accidental foreign body ingestion and impaction of food bolus present as an emergency. Pediatric population is the most vulnerable. However, most foreign bodies pass spontaneously in the stool. A child was brought to emergency department with history of wire nail ingestion 15 hours back. Then emergency radiological investigation was done & advised to admit to the hospital. Patient was on conservative treatment & passed spontaneously per anum with stool after 04 days of ingestion. Decision regarding immediate intervention or conservative approach will require consideration of the level of lodgement & type of foreign body. Prevention is possible if parents/ guardians exercise control on their wards & are aware of implications of such an event.

Keywords: Wire Nail, Foreign body, Children

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Introduction:

Foreign body ingestion and impaction of food bolus occur commonly. The majority of foreign body ingestions occur in the pediatric population, with a peak incidence between the ages of 6 months and 6 years.[1] The incidence of FB ingestion has increased in the past 13 years by 80%.[2] FBs can be broadly categorized into the following major groups: blunt objects, sharp-pointed objects, magnets, food boluses, and disk batteries.[3] The reported incidence of sharp FB varies between different centers. In European and Asian centers, the incidence rates were reported between 11% and 13% respectively.[4] In a recent report, among 3168 children with FB ingestion, approximately 18.3% were sharply pointed FBs. The management of sharp-pointed FB has been a matter of controversy as it has been associated with high morbidity and mortality. Delaying management could result in morbid complications including intestinal perforations.[3,5] Some guidelines suggest prompt removal of all sharp-pointed foreign bodies within reach of the endoscope and some others describe that if a foreign body has not progressed on imaging for 72 hours, surgical intervention may have to be planned.[4] This case report describes the management of a child who accidentally swallowed an iron nail. Additionally, we reviewed the literature and guidelines available on the same topic.

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Case Report:

A 12-year old male child was brought to hospital 15 hours after ingestion of wire nail toy. The child was asymptomatic. On examination, vitals were stable. Abdomen examination was within normal limit. Radiograph of chest and abdomen erect showed the wire nail shaped (approx. 1.5 inch) foreign body in cardiac end of stomach. (Figure 1)

Day 1

Figure 1: First X-ray of chest and abdomen, showing the sharp-pointed foreign body (FB) in the epigastric region

Day 2

Figure 2: In the x-ray after 24 hours, the position of the foreign body (FB) has changed, most probably at the level of Ascending Colon.

Day 3

Figure 3: X-ray on day 3 of ingestion: the pointed foreign body (FB) is seen in the Left iliac fossa most probably at Descending /Sigmoid colon.

Day 4

Figure 4: X-ray on day 4 of ingestion: the pointed foreign body (FB) is seen in the pelvis suggesting at rectum.

Day 5

Figure 5: X-ray on day 5 of ingestion: No foreign body (FB) is seen in abdomen & pelvis.

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The child was kept nil orally for 48 hours with intravenous fluid supplementation and intravenous antibiotic injection ceftriaxone 50 mg/kg was given for 3 days, along with injection pantoprazole 1 mg/kg. On day 3, orally liquids were started followed by soft diet on day 4 and full diet on day 5. On day 4, it was expelled out through stool. Child had no complications and was discharged a day later. After 7 days of discharge from hospital, child came for follow up & he was in all right.

Discussion:

Infants are known to put almost everything into their mouths. Patients with foreign bodies in the upper GI tract usually fall into 1 of 3 categories: Children, psychiatric patients and prisoners, and edentulous patients.[6]

The majority of foreign body ingestions occur in the pediatric population, accounting for 75–85% of patients with foreign bodies in the upper GI tract but edentulous adults are also at greater risk of ingesting foreign bodies, including an obstructing food bolus or their dental prosthesis.[7] Mortality rates have been extremely low. A compilation of multiple studies including 2 large series report no deaths in 852 adults and 1 death in 2206 children.[8]

Plain radiographs are an inexpensive and easily available imaging modality for the diagnosis of radio-opaque FBs and give an idea about their location in the GI tract. Jackson's axiom says

"advancing points puncture, trailing do not"; this is true for many sharp foreign bodies in the GI tract [3]. According to previous reports, objects wider than 2 cm tend to get lodged in the stomach as they cannot get negotiated through the pylorus, and objects with a length of more than 5 cm tend to be held in the duodenum.[5, 9] The average transit time suggested for a foreign body in children is 3.6 days[10] and the average time from ingestion to perforation due to a sharp foreign body is estimated at 10.4 days.[10, 11]

As per the North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition (NASPGHAN) guidelines, endoscopic removal is recommended in all cases of esophageal FB. If the FB is in the stomach, endoscopic removal is recommended unless the object is shorter with a heavier blunt end. For sharp objects that are in the small intestine (beyond the ligament of Treitz) and the patient is asymptomatic, if the FB has shown no change in position in three days or if the patient becomes symptomatic, it necessitates enteroscopy or surgical intervention for the removal of the FB.[3]

However, there is a lack of data regarding the rate of complications secondary to sharp-pointed FB ingestion and pediatric scientific literature is limited to a few case reports and case series, reporting variable complication rates.[12, 13] In a recent retrospective study by Quitadamo et al.[2] out of 580 children with sharp FB ingestion, only 3.8% were symptomatic (vomiting including hematemesis, drooling, bloody stool, abdominal pain, dysphagia, etc.). Endoscopic removal was considered for endoscopically reachable FBs (esophageal, gastric, proximal duodenal retention) while children with intestinal-retained sharp pointed FBs were followed up until expulsion. All children with intestinal FB expelled the objects between eight and 94 hours without any complications. However, they did not record and analyse their data according to the size of the FBs.

Mantegazza et al. developed a nomogram based on the multivariable logistic regression model to predict the probability of the need for surgical or endoscopic intervention in children with FB ingestion, based on the information collected at admission.[14] The points include age, gender, FB type, pre-existing disease, signs and symptoms such as drooling of saliva, dysphagia, vomiting, retrosternal pain, abdominal pain, respiratory symptoms, hematemesis, food refusal, and unexplained crying.[14] Notably, not all symptoms carry the same weight in the scoring system. Symptoms related to an esophageal location contribute the highest number of points. Specifically, drooling, dysphagia, and retrosternal pain are associated with a 50%, 30%, and 30% increased risk of intervention, respectively, compared to patients who do not exhibit these symptoms. Other symptoms, such as vomiting, food refusal, unexplained crying, hematemesis, and abdominal pain, except for respiratory symptoms, contribute to a 10%-20% increased risk of intervention.[14] The type of FB is also given importance. While the blunt and sharp-pointed FB scored fewer points (<30), the magnet and button battery scored higher points (40-70).

In our case, the child should have undergone endoscopic removal of the FB at the time of presentation. However, as we received the child more than 15 hours after the ingestion with FB in the small intestine and the child was clinically asymptomatic, we opted for watchful expectant management in consultation with the parents. We could observe the change in the position of the FB in each x-ray and hence remained hopeful of spontaneous evacuation. No change in position on serial x-ray is ominous for impending complication.[12, 13] Even if we consider using the nomogram developed by Mantegazza et al.[14], as the child was asymptomatic and the sharp-pointed FB scores fewer points, it would not have recommended a surgical intervention. Hence, we believe in an asymptomatic child,

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regardless of the size of the sharp pointed FB, if it is in the intestine and the position is changing on serial x-rays, we should wait for a spontaneous evacuation.

Urgent intervention is indicated if any of the following warning signs are present: [15]

- When the ingested object is sharp, long (>5 cm), and is in the esophagus or stomach
- When the ingested object is a high-powered magnet or magnets
- When a disk battery is in the esophagus (and in some cases in the stomach)
- When the patient shows signs of airway compromise
- When there is evidence of near-complete esophageal obstruction (eg, patient cannot swallow secretions)
- When there are signs or symptoms suggesting inflammation or intestinal obstruction (fever, abdominal pain, or vomiting).[7]

Observation is recommended for patients with small, blunt objects below the diaphragm or with asymptomatic objects beyond the reach of an endoscope.[16]

Surgical removal should be considered for blunt objects beyond the stomach that remain in the same location for longer than one week.[16]

Conclusion:

In an asymptomatic child with sharp-pointed foreign body ingestion, the size of the object may not be a determining factor in management. If it is located in the intestine, a trial of conservative management in the form of close clinical and serial radiological monitoring should be opted for. As long as the child is asymptomatic and the FB is changing position on serial x-rays, watchful expectancy is advocated even if it takes longer than usual time for spontaneous expulsion. There should be a very low threshold for surgical intervention if the child becomes symptomatic and if the FB does not change position.

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Eruptive Xanthoma in an Obese, Type 2 DM Patient with Hypertriglyceridemia

HOSSAIN T

Figure 1: Eruptive Xanthoma

A 32 year old patient came with newly diagnosed Diabetes Mellitus and Hypertension. He was obese (BMI 34) with acanthosis nigricans and complained of papular rash (Figure 1) appearing on both arms.

The lesions were firm, light red papules distributed over both arms, not itchy. A fasting lipid profile was done and it showed Seum Triglyceride 879 mg/dl, Total cholesterol 231 mg/dl, HDL 32 mg/dl , LDL was not calculated due to high TG. His fasting blood glucose was 13.2 mmol/L, HbA1c 9.2%, Blood pressure 150/90 mmhg. Renal and Liver function tests were normal, Thyroid function test was normal, USG of whole abdomen showed grade II Fatty Liver.

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LETTER TO THE EDITOR

Journal of Green Life Med. Col. 2026; 11(2): 65

Letter to the Editor

Dear Executive Editor, Green Life Medical College Journal

The recent measles outbreak in Bangladesh has once again highlighted that vaccine-preventable diseases can rapidly return when gaps appear in population immunity. Despite decades of remarkable success through the Expanded Programme on Immunization (EPI), the resurgence of measles demonstrates the necessity of sustained vaccination coverage, effective surveillance, and timely public health response.

Measles remains one of the most contagious human infections, although it is preventable through a safe and effective vaccine. Because of its high transmissibility, maintaining very high two-dose measles vaccine coverage is essential to prevent outbreaks. Even small clusters of unvaccinated or incompletely vaccinated individuals may allow transmission and threaten previous achievements in disease control.

According to the World Health Organization (WHO) and the reports published by Directorate General Health Services, Bangladesh, Bangladesh experienced a significant rise in measles cases in 2026, involving multiple geographical areas and affecting mainly children. The outbreak indicates the presence of immunity gaps despite overall national progress in childhood vaccination. Recent national reports based on Directorate General of Health Services (DGHS) data also demonstrated a continuing rise in suspected and confirmed cases, emphasizing the magnitude of the challenge.

Several factors may have contributed to this resurgence. Disruptions in routine healthcare services, missed vaccination opportunities during the last two years, migration, population movement, and difficulties in reaching marginalized communities can create susceptible groups. The impact of the COVID-19 pandemic on routine immunization services worldwide has further demonstrated how quickly progress against vaccine-preventable diseases may be threatened.

Bangladesh responded to the outbreak through emergency measles-rubella vaccination activities with support from national and international partners including WHO, UNICEF, and Gavi. Such campaigns are essential during outbreaks; however, they should complement rather than replace strong routine immunization services. Identifying zero-dose and under-immunized children, ensuring completion of scheduled vaccines, and improving vaccination records remain critical for long-term prevention.

The current outbreak also reinforces the importance of a sensitive disease surveillance system. Early identification of suspected cases, laboratory confirmation, contact tracing, and rapid reporting are essential for interrupting transmission. Healthcare facilities must remain prepared to recognize measles promptly and implement infection prevention measures to reduce further spread.

Another important component is maintaining public confidence in vaccination. Healthcare professionals have a crucial role in addressing misinformation, providing evidence-based communication, and encouraging caregivers to complete childhood immunization schedules. Community participation involving health workers, educators, and local leaders can improve vaccine acceptance and ensure that vulnerable populations are reached.

The measles outbreak in Bangladesh should therefore be viewed not only as an infectious disease event but also as an opportunity to evaluate the resilience of preventive health systems. Past success in immunization does not guarantee permanent protection unless continuous efforts are maintained.

In conclusion, I can emphasize that this resurgence of measles reminds us that elimination of vaccine-preventable diseases requires constant vigilance. Strengthening routine immunization, improving surveillance, ensuring equitable vaccine access, and maintaining community trust are essential steps toward preventing future outbreaks and protecting the health of children in Bangladesh.

Yours sincerely,

Ehsamul Azim
Professor and Head
Department of Community Medicine and Public Health
Green Life Medical College

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Journal of Green Life Med. Col. 2026; 11(2): 66

Faculty achievement:

Prof. Dr. Ehsamul Azim, Head, Department of Community Medicine and Public Health, Green Life Medical College, completed the Master of Medical Education (MMed) degree by Bangladesh Medical University (BMU) in July 2025.

Continuing Medical Education (CME)

Date	Topics	Department
07/01/2026	Peptic ulcer disease- when the fire rises within	Dept. of Pharmacology
14/01/2026	Case based discussion on AUB-A	Department of Obstetrics & Gynaecology
21/01/2026	Combating the superbug:MRSA infection in burn	Department of Microbiology
28/01/2026	Hands that save lives: The power of CPR	Dept. of Anaesthesiology
01/04/2026	The Human Hand – Precision & the Art of Anatomy	Department of Anatomy
08/04/2026	Best practices in Pre-analytical phase: The Backbone of Reliable Laboratory Results	Department of Biochemisry
15/04/2026		Department of Rheumatology
22/04/2026	Physiology of Growth Hormone and Pituitary Dwarfism	Department of Physiology
29/04/2026	Hidden Giant: A Surgical Journey Beyond the Peritoneum	Department of Surgery
06/05/2026	Tumor marker, in a Journey of Cancer Management: Advantages and Limitations	Department of Pathology
13/05/2026	The commonest childhood skin disease: Atopic dermatitis	Department of Dermatology & Venereology
20/05/2026	Nutrition and NCDs Prevention: A public health Perspective	Department of Community Medicine & Public Health
03/06/2026	Autism in children	Department of Paediatrics
10/06/2026	Documentary Medical Evidence in Clinical Practice	Department of Forensic Medicine & Toxicology
17/06/2026	Role of Oncology in colorectal Malignancy	Department of Oncology
24/06/2026	Precision medicine in modern healthcare	Department of Medicine

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