# 2022

# Abstract

**Planning, Monitoring & Research**
**Operational Plan**

Directorate General Of Health Services

Ministry of Health and Family Welfare

# Editorial

The Ministry of Health and Family Welfare is implementing sector-wide activities through various operational plans to guide the development of the health sector to achieve the SDGs. It approximates a comprehensive national plan and provides a guiding framework for detailed health planning and implementation of health sector interventions to ensure quality health care.

The PMR Operational Plan (OP) supports the DGHS in planning activities and provides necessary studies for proper planning and the responsibilities is also include monitoring the implementation of the plan and developing capacity to generate and use evidence-based data and information for health policy, strategy and plan development and implementation through needs-based research. Thus, PMR OP supports DGHS in planning, monitoring and research areas.

The Line Director invites research proposals through various institutes. The head of institutes selects proposals and sends them to the line director. After discussions at various levels of DGHS, the then Line Director released the fund in favor of the institutes. The head of the institute finally chooses the topics for the research work. Line Director Management of research work using various methods.

On the other hand, the PMR OP supports the Bangladesh Medical Research Council (BMRC) to build research capacity and provide research funding at individual and national levels.

In conclusion, these studies helps to generate evidence on which appropriate management decisions can be made. Sometimes managers are not familiar with research findings, so their decisions may not reflect real problems. Managers rarely do research on their own and are content to publish the results without concern for proper dissemination for use by policy makers, planners and managers. In this context, all abstracts were published for the scientific community and policy makers to better understand the research results.

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**Abstract of Research of Planning, Monitoring and Research Operational Plan (PMR OP) in FY 2021-2022**

| Institute | Sl no | Research Title | Principal Investigator | Page Number |
|---|---|---|---|---|
| (A) Dhaka Medical College Hospital (DMCH) | 1. | Preparedness and response regarding COVID-19 crisis management at tertiary level health center and clients' satisfaction: Experience from Dhaka Medical College Hospital | Dr. Md. Ashraful Alam<br>Assistant Director, DMCH | 1-2 |
| | 2. | Efficacy and safety of oral tofacitinib in moderate to severe chronic plaque psoriasis | Dr. Md. Shah Alam<br>IMO, DMCH | 3 |
| | 3. | COVID-19 vaccine adherence of community people and their behavioral changes in the new normal context of the coronavirus pandemic: a mixed method study | Brig. Gen. Dr. Md. Nazmul Haque<br>Director, DMCH. | 4 |
| | 4. | The difference in the presentation and outcomes of the COVID-19 among the first, second and third surge in Dhaka Medical College | Dr.Reaz Mahmud<br>Assistant Professor, Neurology, DMCH | 5-6 |
| | 5. | Neuropsychiatric manifestations and their impact in post-COVID-19 condition: a study in a tertiary care center in Bangladesh. | Dr. Md. Zahid Hossain<br>Associate professor, Medicine, DMCH | 7 |
| (B) National Institute of Cancer Research and Hospital (NICRH) | 6. | Profile of cervical cancer patients attending at NICRH, Dhaka: A five years prospective study | Professor Dr. Habibullah Talukder | 8-9 |
| | 7. | Molecular stratification of Breast Cancer scenario in patients attending at NICRH, Dhaka | Professor Dr. Rakib Uddin Ahmed | 10 |
| | 8. | Demographic stratification and evaluation of disease burden and implication of G8 questionnaires in elderly cancer patients attending at NICRH, Dhaka | Dr. Muhammad Rafiqul Islam | 11-12 |
| | 9. | Evaluation of Effectiveness of conventional chemotherapy to Acute Myeloid Leukemia (AML) patients attending at NICRH | Dr. Salina Haque | 13-14 |

| | | | | |
|---|---|---|---|---|
| | 10. | Comparison of hypofractionated radiation therapy versus conventional radiation therapy in post mastectomy breast cancer patients at NICRH | Prof. Dr. Swapan Kumar Bandyopadhyaa | 15-16 |
| | 11. | Evaluation of Estrogen receptor (ER), Progesterone receptor (PR) and Human Epidermal Growth factor receptor 2 (HER 2) and their relationship with recurrence in carcinoma breast patients at NICRH | Prof. Dr. Laila Shirin | 17-18 |
| | 12. | Relationship between HPV-DNA status with recurrence in post-radiotherapy patients of advanced cervical cancer | Dr. Sirajum Monira | 19 |
| | 13. | Short-term evaluation of bowel dysfunction after anterior resection for carcinoma rectum or rectosigmoid junction | Dr. Md. Abdul Munim Sarker | 20-21 |
| (C) Institute of Epidemiology, Disease Control and Research (IEDCR) | 14. | Detection of Multidrug resistance bacteria causing Health Care Associated wound infection in patients admitted in a specialized burn hospital of Dhaka | Prof. Dr. TahminaShirin PhD<br>Director , IEDCR | 22-24 |
| | 15. | Circulating Dengue virus serotype among the admitted patients in selected hospitals of Dhaka city in the pre-monsoon period, 2022 | Prof. Dr. TahminaShirin PhD<br>Director , IEDCR | 25-26 |
| (D) Institute of Public Health (IPH) | 16. | Assessment of fecal contamination in multiple water samples associated with diarrhea in urban communities of Dhaka city | Dr. Rasheda Sultana, Director , IPH& Head NFSL, IPH | 27 |
| (E) National Institute of Preventive and Social Medicine (NIPSOM) | 17. | Association of Diabetes Self Care Management with Glycaemic Control among Adults with Type2 Diabetic Patients of Bangladesh | Dr. Ummul Khair Alam, Assistant Professor, NIPSOM | 28-29 |

# Dhaka Medical College Hospital (DMCH)

**Research Title:** Preparedness and response regarding COVID-19 crisis management at tertiary level health center and clients' satisfaction: Experience from Dhaka Medical College Hospital


## Abstract

COVID-19 has put the country in a multi-dimensional crisis and it's a huge burden for hospital management. It is evident that absence of proper health care support the mortality rate might get rocketed. However prolonged outbreak situations can rapidly increase the service demands and potentially question the capacity of hospitals and the health system at large. Dhaka Medical College Hospital (DMCH) being the flagship healthcare center in Bangladesh played crucial role to provide care to the COVID-19 patients. This study described the strategic management of the healthcare managers from both the care providers' and care receivers' viewpoints with scientific theoretical approaches of Situational Crisis Communication Theory (SCCT), Fink's Crisis Management Theory and Service Quality (SERVQUAL) Model. It was a concurrent explanatory mixed study using of quantitative and qualitative methods. Healthcare providers include doctors, nurses and supporting staffs. Healthcare receivers include patients admitted to in-patient departments. Total 6 focus group discussions were arranged and 30 in-depth interviews and 890 face-to-face interviews were taken among healthcare providers and recipients. This study revealed various strategic changes during different phases of the pandemic. It was hard to be full-prepared against an emerging disease like COVID-19. This tertiary level hospital carried out both COVID and non-COVID services. Initially it was difficult to manage the crisis with its existing health staffs and limited resources even for the largest hospital. Control room and triage system were effective not only to manage the COVID crisis but also helpful to ensure the safety of health workers. Doctors motivated the nurses and other staffs with newer knowledge from online sources and news on global experiences. Recruitment of health staffs and arrangement of short training with quick supply of logistics and drugs helped a lot in the initial crisis management. Leadership as well as teamwork played a great role to manage the crisis with its limited resources. Various remuneration schemes and safety measures changed the attitude of health staffs and retention of workforce was possible. Experience from the first wave of pandemic helped them to cope up in the Delta wave of COVID-19. Health workers were more relaxed during the omicron after getting vaccines. Besides government, donors from private sectors involved themselves to boost up the health staffs of DMCH. Number of patients and the severity of the cases varied with the different waves of COVID-19. Current referral system from periphery should be updated and monitored to avoid unnecessary bed crisis. Patient satisfaction increased as the pandemic progressed and better care system was assured within the hospital but the management of non-communicable diseases was a major challenge for a long time in the mixed form of COVID and non-COVID management under the same umbrella. This study has great implications for policy makers to strengthen the health system of Bangladesh and it will help the health managers and policy makers to formulate strategies for emergency health crisis management at

the healthcare centers to combat the ongoing COVID-19 pandemic and any future crisis.

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# Dhaka Medical College Hospital (DMCH)

**Research Title:** Efficacy and safety of oral tofacitinib in moderate to severe chronic plaque psoriasis


**Abstract**

**Background:** Psoriasis is a common, chronic and recurrent inflammatory skin disease characterized by the development of scaly, red, and well-demarcated plaques. Treatment of psoriasis varies depending on the severity and extent of the skin involvement. Methotrexate is an effective treatment option for psoriasis but limitations for the use include slow onset of therapeutic effect, teratogenicity and toxicities. JAK inhibitor such as tofacitinib has been studied for psoriasis patients and the data are promising as potential treatment option.

**Aims and Objectives:** To assess the efficacy and safety of tofacitinib in moderate to severe chronic plaque psoriasis.

**Methods:** The non-randomized clinical trial was conducted at the psoriasis clinic, Department of Dermatology and Venereology, Dhaka Medical College Hospital, Dhaka from 1st January 2022 to 30th June, 2022. After fulfilling inclusion and exclusion criteria 32 psoriasis patients were treated with tofacitinib (Group-A) and another 32 psoriasis patients were treated with methotrexate (Group-B). Psoriasis area and severity score (PASI) was used to assess the severity at the end of 1st month and 3rd month from baseline. Data was collected by structured questionnaire. Statistical analysis was done by SPSS 25.

**Results:** The mean age was (36.1 ± 8.3) years vs (36.3 ± 7.5) in Group A and Group B respectively with no statistical significance (p=0.4). Mean baseline PASI score of Group A vs Group B were (20.9 ± 5.3) vs (18.7 ± 5.0), And Mean PASI score at the end of 3rd month were (4.8 ± 3.2) vs (4.6 ± 3.8) respectively which were statistically not significant. Whereas Mean PASI at the end of 1st month were (8.7 ± 3.8) vs (12.0 ± 5.7) in Group A vs Group B which is statistically significant (p= 0.01).

**Conclusion:** In this study PASI 75 was achieved significantly in patients treated with oral tofacitinib in 1st month than in patients treated with methotrexate. After 3rd month achievement of PASI 75 was similar in both group. Mild adverse effects were observed in both group.


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# Dhaka Medical College Hospital (DMCH)

**Research Title:** COVID-19 vaccine adherence of community people and their behavioral changes in the new normal context of the coronavirus pandemic: a mixed method study


**Abstract**

Coronavirus disease 2019 (COVID-19) is the deadliest pandemic in the 21st century and it's still roaring globally. Bangladesh has already started its nationwide vaccination program. Considering the longer duration of the national COVID-19 vaccination program and widespread nature of the pandemic, it is necessary that people equally comply with both vaccine and non-therapeutic health protective behaviors against COVID-19. This study investigated the public adherence to vaccination and behavioral changes against COVID-19, and their determinants in Bangladesh in the new normal context of the pandemic. A convergent parallel mixed method study was conducted from May to June 2022 among 940 rural and urban adults of Dhaka and Chattogram divisions and data collection was done through mixed method approach. Both qualitative and quantitative data were analyzed separately and later triangulated to explain and validate each other. Nearly half of them showed poor vaccine adherence and health practices regarding COVID-19 prevention and only around one-fourth showed good level of health practice. Majority of the respondents did not regularly use face mask during the pandemic crisis and the using tendency varied with the severity of the corona waves. Majority of the respondents took at least one dose of COVID-19 vaccine but many of them were irregular either in the time of second or booster dose and the tendency of vaccine uptake differed in different waves of pandemic. Online registration system, vaccine availability and overcrowded vaccine centers were major challenges at the initial stage of vaccination. After the vaccination, respondents were more relaxed in following the health rules. Not only the background factors but also information and attitude on COVID-19 prevention, motivation, self-control and intention were significant to predict the vaccine adherence and health practices regarding COVID-19 prevention ($p$<0.001). The causal model of COVID-19 prevention behavior was tested and justified through structural equation modeling based on the theory of planned behavior (TPB). Intention significantly influenced COVID-19 prevention behavior directly showing the highest effect ($p$<0.001). Attitude, motivation and self-control showed significant direct effects on intention ($p$<0.001). Adequate knowledge, positive attitude, proper motivation and positive intention can encourage adults more to ensure vaccine adherence and their healthy behavior regarding COVID-19 prevention. The theoretical model of the study was effective to explain vaccine adherence and COVID-19 prevention behavior of people in a more rational way and policies based on this model could be adopted to improve the current status of preventive health practices.


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# Dhaka Medical College Hospital (DMCH)

**Research Title:** The difference in the presentation and outcomes of the COVID-19 among the first, second and third surge in Dhaka Medical College


## Abstract

### Background

Experience in last 2 year showed that the behavior of the COVID-19 pandemic is not particularly unusual with regard to its resurgence as "waves, the overall pattern of the coronavirus pandemic so far has been a series of COVID-19 waves: surges in new cases followed by declines. In Bangladesh up to September 2021 we have observed three surges of COVID-19 infection. The behavior of the mutant virus among the Bangladeshi population is largely unknown. So, the study aims to observe in the difference of the presentation and outcome among the COVID-19 affected patients between the first, second and third wave in a systematic and scientific way.

### Methods:

**This study aimed to** observe the difference of different epidemiologic aspects of COVID-19 in the first, second and third waves. The study was conducted at Dhaka Medical College Hospital from January 01, 2021, to June 20, 2022. This was a cross-sectional study and review of the hospital records. We reviewed the hospital records of the outpatient, inpatient and virology department from April 2020 to September 2021. We also reviewed the patient record files of the patients. From that patient some selected patients were followed up for the post COVID symptoms at least 6 months after discharge. The follow up was given by telephonic interview following a prespecified telephonic interview guide.

We reviewed the hospital data. In this study we observed the differences in the presenting features, disease severity, case fatality, length of hospital stays, frequency of the patient required oxygen therapy, ICU referral. We also reviewed the outpatient data for attendance in the outpatient, rate of hospital admission, rate of brought death in the outpatient. We also reviewed the virology lab data to observe the difference in the positivity rate, number of test and age and sex difference. We reviewed inpatient hospital data for rate of hospital admission, death rate. We followed up the patients at least 6 months after the hospital discharge and observed the differences in the post-COVID-19 conditions among the first, second and third surge of the COVID-19.

### Findings:

In this study we found that the demography and the comorbidities are different in all the surges. The demography and the risk factors are different in all 3 waves, patients with <40 years (364,71%), male sex (283,45.1%) are more affected in the first wave. Patients with co-morbidities like diabetes, hypertension asthma, ischemic heart disease and renal disease were more affected in the second and third wave. Most of the presenting complaints except the lethargy and hoarseness of the voice were different in three waves. Fever(332,24.3%), respiratory distress(251,29.6%%), cough(290, 27.9%)was more in the third wave and running nose(143,69.4%), sore throat(198,71.2%) was more in the first

wave. The patients were more critical in the third wave. WBC count was high in the second wave, low in the third wave. Platelet count was low in the third wave. CRP (39, SD-7) was much high in the third wave and D-dimer (1.5) and ferritin (1468) was high in the second wave. The patient turned to more severe disease in the third wave and duration of hospital stay was more in the third wave. The patient consulted and admitted more in the first wave of COVID-19. Patient was more admitted (13650, 53.1%) in the first wave, received more oxygen in the first (6865, 48.4%) and third wave (4001,28.2%). Death was more in the first wave (2584, 51.1%). Patient was more tested in the first (5962, 46.3) and third wave (4094, 31.8%). Positivity was high in the third wave (22.8%). Post-covid cough was higher in the second wave and fatigue was higher in third wave. Tiredness and memory disturbances was higher in the second wave. In the second wave patient had more low interest and little interest

**Conclusion:**

The study revealed that during the COVID-19 surges the presenting features, outcomes and the epidemiological trends in all aspect was different.

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# Dhaka Medical College Hospital (DMCH)

**Research Title:** Neuropsychiatric manifestations and their impact in post-COVID-19 condition: a study in a tertiary care center in Bangladesh.

**Abstract Background:** Post-COVID conditions are a wide range of new, returning, or ongoing health problems people can experience four or more weeks after first being infected with the virus that causes COVID-19. Quantification of these conditions and their impact on the patients' daily livings, were scarce in the current literature. This study aims to observe the different neuropsychiatric conditions in the post-COVID conditions with their severity. Additionally, we shall also evaluate their impact on the lives of the patient.

**Methods:** This was a cross-sectional study. We followed up the patients attended in the COVID-19 post-acute care and follow-up clinic of Dhaka Medical College. We also followed up the patients who was admitted in the hospital and completed at least one month after first being infected with the virus. The study was conducted at COVID-19 post-acute care and follow-up clinic unit of Dhaka Medical College Hospital from January 01, 2021, to June 15, 2022.

**Findings:** In this cross-sectional study, we included 400 patients with post-covid conditions. The mean age of the study population was 44.8(15.5), most were male (51%) and most of the patient (203, 50.8%) had mild Illness. The most prominent post covid Neuropsychiatric features was fatigue (283,70.8%), Headache (104,26%, memory disturbances (107,26.8%), Depression (109,27.8%). Most of the patient did not recover fully, overall functional score with Karnofsky rating was 89.8(7.2). Most of the patient had more than usual tiredness (127(41.1%), need to rest more 116(37.5%) and feel week 183(59.2%). About 30% patient had head ache mostly throbbing (69, 56.5%), bilateral 30(24%), mild in severity (83,68%). Total 59(14.8%) of the study population sometimes feel severe pain and the headache rarely hamper the daily activities (41, 10%), need to lie down (40, 10%) and limit the ability to concentrate (40,10%). For depression (44,11%) feel tiered, have little interest (34, 8.5%) and feel urge to lie down (34, 8.5%) for several days. Increasing age (OR, 95%CI, p-value, 1.03, 1.01-1.05, 0.002) and moderate severity COVID-19 (OR, 95% CI,p-value, 7.3, 2.3-39.05, 0.02) was the risk factors for fatigue. Increasing age was the risk factors for Headache. No specific risk factors was found.

**Conclusion:** In the post-covid conditions significant number of the patient had been suffering from various neuropsychiatric conditions and was not able to return their previous functional status.



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# National Institute of Cancer Research and Hospital (NICRH)

**Research Title:** Profile of cervical cancer patients attending at NICRH, Dhaka: A five years' prospective study


**Abstract**

**Aim:** To describe the sociodemographic characteristics and clinical profile of women presenting with cervical carcinoma and to identify factors associated with the timing of presentation and prognosis.

**Introduction:** Cervical cancer is the second most common cancer among women worldwide after breast cancer. It is one of the leading malignancies in women in Bangladesh also.

**Material and Method:** This record based observational study was done at National Institute of Cancer Research & Hospital, Dhaka from February 2022 to June 2022. The study population was women who were diagnosed with cervical carcinoma from January 1, 2017 to December 31, 2021. A pre-tested data extraction sheet aimed at collecting information from the inpatient records was used as the study instrument.

**Result:** From 2017 to 2021 a total of 63346 new patients attended. Of them the number of cervical cancer patients were 4336 (6.8%). Among female (n=29362) the percentage of cervical cancer was 14.8%. The mean age of cervical cancer patients was 49.55 (±SD of 11.16) years. Most of the patients (37.2%) were from Dhaka division and most of the patients were married about half of the cervical cancer patients were illiterate. Majority of the patients were chewing tobacco users (55%, 2393). Majority of the patient's family were earning below 15000 BDT per month (55%, 2391). More than 43% (n=1876) of the patients came NICRH through a referral by some oncologists. A considerable number of patients (34.9%) did come from govt. hospital referral. Almost all patients (98%) were diagnosed microscopically and only 2% patients were diagnosed radiologically. About 46% cervical cancer patients (n=1981) had given birth to 2-4 children while 42% patients (n=1817) were grand multipara. Around 96% (n=4177) cervical cancer patients were suffering from squamous cell carcinoma. Majority of the patients (59%, 2551) gave history of OCP use for variable period of times. Only 17% (n=745) patients did receive any sort of cancer treatment before reporting to NICRH.

**Conclusion:** Cervical cancer is preventable and curable if detected at an early stage. Proper steps may be taken to make people aware about cervical cancer prevention and treatment which in turn, could help in the reduction of morbidity and mortality associated with this preventable cancer.

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# National Institute of Cancer Research and Hospital (NICRH)

**Research Title:** Molecular stratification of Breast Cancer scenario in patients attending at NICRH, Dhaka


**Abstract**

This retrospective study was done from April 2022 to June 2022 at the Department of Radiation Oncology, National Institute of Cancer Research & Hospital, Dhaka, Bangladesh. Aim of the study is to investigate the incidence of breast cancer molecular sub-type according to its immuno-histochemistry. During the study period women having diagnosed breast cancer attending at NICRH of all age with histologically proven duct cell carcinoma of breast having known ER,PR, Her 2 & Ki-67 status were enrolled in the study. The study included 72 cases, 70 female and 2 male. In the studied population 68% of the cases breast cancer occurred in women<50 years of age. Left breast was most commonly involvedin 44 cases (61%). Painless lump was the most common presenting symptoms in 72 cases. Invasive carcinoma (NST) 58(80%) was the most common histological type identified. Molecular sub types were Luminal A cases were 20 (28%), Luminal B cases were 12 (17%), Her2/neu 15 (21%) and triple negative were 25 (34%). The majority of cases had tumor sizes of 2-5 cm in (40/72) 55%. Lymph node metastasis was seen in 80% (40/50) of the cases.



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# National Institute of Cancer Research and Hospital (NICRH)

**Research Title:** Demographic stratification and evaluation of disease burden and implication of G8 questionnaires in elderly cancer patients attending at NICRH, Dhaka


**Abstract**

**INTRODUCTION:**

Geriatric oncology is a new concept worldwide as well as in Bangladesh that is concerned with the diagnosis and treatment of cancer in the elderly. Elderly is a subjective cultural concept that varies from culture to culture, depending on a mixture of health-related social and economic factors. As life expectancy increases, the number of older adults is rapidly growing, leading to an increase in the prevalence of non-communicable diseases associated with aging, such as cancer [1]. Presently, more than half of the world's older populations living in Asia, and this region accounts for about 50% of global cancer incidence and mortality [2].

**JUSTIFICATION:**

This Epidemiological transition leads to the "double burden" of disease in countries whose economies are undergoing transition, because of the continuing burden of endemic infectious diseases. Bangladesh is entering the middle stages both of the demographic and the epidemiological transition, a period when numerous demands on the systems of social protection and public health are inevitable. According to the United States Census Bureau, by 2050; one in 5 will be elderly in Bangladesh. International Agency for Research on Cancer has estimated that cancer-related death rates in Bangladesh were 7.5% in 2005 and will be 13% in 2030[3]. Older adults with cancer are likely to have more comorbidities with varying severity, polypharmacy, delirium, and frailty than the younger ones which may affect the treatment decisions [4]. Older adults require specialized supportive interventions such as psychosocial support, physical rehabilitation, and caregiver support [5]. So, geriatric patients need an expanded and interdisciplinary care team; without the collaboration of care could lead to confusion, frustration, compromised quality and safety, and a poor patient experience. However, there is little information about the demographic stratification, disease burden, and challenges of elderly cancer patients in Bangladesh. To ensure the multidisciplinary approach and quality of life in elderly cancer patients, we need more geriatric-specific information. Thus, the purpose of the present study was to gather information about the demographic differentiation, disease pattern, and implication of G8 questionaries in clinical practices of elderly cancer patients. The reason for choosing this study was to explore the modifiable factors that contribute to decreasing the quality of life in a limited resourceful region like Bangladesh, the study findings provided baseline information to the physicians to understand cancer in the elderly better and it will help integrate the biological and epidemiological characteristics, and provide a theoretical basis of ensuring a better life expectancy without reducing their quality of life. This study also will allow future investigators to explore the options for geriatric cancer patients in limited resources.

**METHIODOLOGY:**

This was a retrospective cross-sectional study that determined the Demographic stratification, disease burden and implication of G8 questionaries in elderly cancer patients of National Institute of Cancer Research and Hospital, Bangladesh. Exploratory analysis was performed to determine the implication of G8 questionaries in elderly cancer patients.

**EXPECTED OUTCOME/ RESULT:**

We believe this detailed retrospective research can clarify the Demographic stratification, disease burden and implication of G8 questionaries in elderly cancer patients of National Institute of Cancer Research and Hospital, Bangladesh. Moreover, we also expect that the present study will address the modifiable risk factors like BMI, Polypharmacy, treatment modalities which will change the treatment strategy for elderly cancer patients in Bangladesh.

**RECOMMENDATION:**

The elderly population is constantly aging, and their medical needs are increasing as well. An increasing number of elderly patients require cancer treatment, which raises a number of practical and medical questions, as well as ethical questions regarding therapeutic decision-making, quality of life, and therapeutic obstinacy (futile medical care). Because of the high cancer rate among elderly patients, oncologist face challenges such as morbimortality and prolonged hospitalizations with this patient population. Geriatric oncology should be started as an individual department. The goal of geriatric oncology is to provide comprehensive care to the elderly cancer patient, taking into account the patient's physical, psychological, and somatic comorbidities, as well as his expected life expectancy. Geriatric oncologists will help other physicians make therapeutic decisions based on their opinions and recommendations. In this attempt at clarification, we recommend to establish the geriatric oncology which will contribute to everyday oncological activity, provide oncologist with some tools for initial patient evaluation, and remind the reader of the situations where oncology can be of critical importance.


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# National Institute of Cancer Research and Hospital (NICRH)

**Research Title:** Evaluation of Effectiveness of conventional chemotherapy to Acute Myeloid Leukemia (AML) patients attending at NICRH


**Abstract**

**Introduction:** Acute myeloid leukemiais the second most common type of leukemia in adults. The prognosis and survival of acute myeloid leukemia (AML) in adult patients remain low, compared with other hematologic malignancies, despite technological advances. As acute myeloid leukemia is a heterogenous groups of disease of hemopoietic system, with the better understand of its biology therapeutic outcome will be improved. AML patients with standard or complex cytogenetic abnormalities and hyperleukocytosis developed early relapse and consolidation therapy with high dose cytarabine, autologous hematopoietic stem cell transplantation (HSCT) or allogeneic HSCT remains largely ineffective in these cases**.**

**Justification:** Though AML is a treatable disease, its treatment is very challenging. We have seen the outcome of AML patient after receiving DA (3+7) protocol as induction therapy followed by 3 cycles HiDAC as consolidation therapy without haematopoietic stem cell transplantation. As there are little data from Bangladesh on the management of acute myeloid leukemia. With the view of scarcity of the indexed data in Bangladesh we have designed an observational study entitled 'Evaluation of Effectiveness of Conventional Chemotherapy to Acute Myeloid Leukaemia (AML) Patients Attending at NICRH.' For this reason, a questionnaire has been developed for data collection with maintaining full confidentiality. In addition, this study result will help the hematologist of Bangladesh to treat AML patients. **Materials and methods:** This is an observational study and was conducted from February 2022 to June 2022 in National Institute of Cancer Research and Hospital (NICRH). All the 54 patients were diagnosed to have AML with help of morphology and immunophenotyping. Patients with AML aged 15 to69 years were included who received conventional chemotherapy (DA 3+7 as induction and HiDAC as consolidation therapy). Bone marrow study was done after induction and consolidation therapy to evaluate response of patients. Patient who had adequate records available like the nature of the treatment, the response to therapy, dates of initial diagnosis and treatment included. A per-designed structured questionnaire has been developed to collect data from AML patients. Before collect data informed written consent was taken. Retrospective data was also collected with proper administrative permission. Personal information of study subjects will not be disclosed.

**Expected results**: Among 54 AML patient's males constituted 55.6% and females were 44.4%. Male to female ratio was1.25:1. The age of the patients at the time of diagnosis ranged from 15 to 69 years (mean age = 35±16 years). The mean TLC was 53.32 ± 68.75 x $10^9$ /L, lowest total leucocyte count was 1.6 x $10^9$/L and highest total leucocyte count was 365.00 x $10^9$/L. In peripheral blood, the average

number of blast cells was 55% (range from 0% to 96%). AMLM2 was the most common FAB subtype constituting 22 (40.7%) cases. Complete remission rate after induction therapy was 77%. Relapse occurred in 33% cases. The median overall survival was 18 months. The 6 years overall survival of 54 patients was 42.6%. The event-free survival at a median of 36 months was 33.3%.

**Recommendation:** We conclude that in adults with AML, the use of a 3+7 regimen that includes a higher dose of daunorubicin (60 mg/m2 /day for 3 days) and 3 cycles of HiDAC produces a favorable remission rate in more than two-third and event free survival (EFS) in one-third of patients. Further large scale, multi-centric study with a longer follow-up period for responding cases is recommended.


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# National Institute of Cancer Research and Hospital (NICRH)

**Research Title:** Comparison of hypofractionated radiation therapy versus conventional radiation therapy in post mastectomy breast cancer patients at NICRH


**Abstract**

**Introduction:** Breast cancer is the one of the most common cancer among female worldwide and in our country. Treatment decisions in breast cancer are mostly based on age, menopausal status, tumor size, axillary nodal status, hormone receptors status and Her 2 neu expression. Radiation therapy plays a vital role in postmastectomy patients when indicated. Hypofractionated radiotherapy is not a quite uncommon practice in selected cases.

**Justification:** All of these patients require post-mastectomy radiotherapy (PMRT) to control loco-regional recurrence. PMRT is recommended in patients with 4 or more positive axillary lymph nodes (ALN) and should be strongly considered in patients with 1–3 positive ALN. In patients with negative nodes, PMRT is indicated for tumors more than 5 cm or positive/close pathological margins. In conventional fractionation (CFRT- 2 Gy per fraction over 5-6 weeks) many a times patients discontinue treatment in between due to long duration, financial constrains and other reasons which may affects treatment outcome. Such a long treatment schedule has major implications on both patient's compliance and departmental workload and huge treatment queue specially in our country where there is a scarcity in machinery support. So hypofractionated radiotherapy can be a good alternative to conventional one. The findings of this study might help provide evidence-based information to the physician and patient groups for treatment of PMRT in breast cancer patients.

**Materials and Methods:** This Quasi-Experimental study was carried out from April 2022 to June 2022 at Department of Radiation Oncology, National Institute of Cancer Research & Hospital, Dhaka, Bangladesh. The purpose and procedure of the study was discussed with the patient. Aim of the study is to compare the local control and side effects of hypo-fractionated radiation therapy (HFRT- 2.67 Gy per fraction for 3 to 3.5 weeks) with conventional radiation therapy (CFRT- 2 Gy per fraction over 5-6 weeks) in post mastectomy carcinoma breast with stage II and III histopathologically proven duct cell carcinoma with ER & PR positive & Her2 negative cases to compare the tolerability and compliance of two schedules.

After total mastectomy with axillary clearance patient receives 8 cycles of chemotherapy with 4 cycles of Doxorubicin & cyclophosphamide followed by 4 cycles with injection paclitaxel. Three weeks after completion of chemotherapy patient received radiotherapy either HFRT or CFRT. Sequentially hormone therapy after completion of radiotherapy was prescribed.

All clinical information regarding previous locoregional and systemic assessment data, e.g., history, clinical examination, imaging (X-ray chest, USG whole abdomen, USG of both breast and axilla, Mammogram of both breast and axilla),previous operation note, IHC, histopathological reports was recorded from patient's case record. All cases were collected maintaining inclusion and exclusion

criteria. Statistical analysis was done according to the objective of the study by using Statistical Package for Social Science software version 16.Findings are presented in frequencies and tables.

**Result:** A total number of 20 post mastectomy patients were enrolled in the study, divided into two Arms. Arm A: Hypofractionated Radiotherapy (HFRT): and Arm B: Conventional Fractionated Radiotherapy (CFRT). Each arm contains 10 patients. Among the studied population more than 50 years of age were 7 (35%) patients and below 50 years were 13 (65%) of breast cancer patients were observed. Regarding acute toxicities -only one patient (10%) developed grade 3 dermatitis in both groups, and sis (60%) patients in group A and seven (70%) patients in group B developed grade 1 dermatitis. Two (20%) in group A and three (30%) patients in group B developed grade 2 dysphagia. No patients in either group developed grade 3 acute dysphagia and acute pneumonitis. Regarding late toxicities, no patients in either groups developed grade 3 dermatitis, pneumonitis and dysphagia. One (10%) patient in both groups developed grade 2 shoulder restriction and lymphaedema. No patients in either groups developed hypothyroidism.

**Recommendation:** Hypofractionated RT after mastectomy (40 Gy in 15 Fractions over 3 weeks) is not inferior to and is as safe as conventional fractionated radiotherapy. Hypo fractionated radiotherapy is economic, short term and convenient with accepted toxicities comparison to conventional fractionated radiotherapy. So, it can be recommended for all breast cancer patients.



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# National Institute of Cancer Research and Hospital (NICRH)

**Research Title:** Evaluation of Estrogen receptor (ER), Progesterone receptor (PR) and Human Epidermal Growth factor receptor 2 (HER 2) and their relationship with recurrence in carcinoma breast patients at NICRH


**Abstract**

**Introduction:** Breast cancer is the most common cancer among female in Bangladesh accounts about 19% of newly diagnosed cancer cases. Treatment decisions in breast cancer are mostly based on age, menopausal status, tumor size, axillary nodal status, hormone receptors status and Her 2 neu expression. Traditional clinicopathological classification of breast cancer has limitations astumors with similar clinical and histological features behave differently regarding outcome and responsiveness to chemo/immunotherapy The pathologic predictors of locoregional recurrence included the number of positive nodes, inadequate axillary dissection, multifocal/multicentric disease, lymphovascular space invasion, extracapsular rextension, skin/nipple involvement, and estrogen receptor-negative disease. **Justification:** Constructed subtype is a prognostic factor for LRR after mastectomy among low-risk women not receiving adjuvant radiation therapy, although rates of LRR remain low across subtypes. Patients with node positive, HR-/HER2- type tumors are more likely to experience LRR following mastectomy alone. Switching of receptor status may change the therapeutic management also. The findings of this study might help provide evidence-based information to the physician and patient groups for recurrent breast cancer. **Materials and Methods:** This cross-sectional observational study was carried out in the Department of Surgical Oncology, National Institute of Cancer Research & Hospital (NICRH), Mohakhali, Dhaka. The study was undertaken with the patients who had recurrent breast cancer having IHC study attending to NICRH. Data collection was started from January 2022 to May 2022 and the subject were collected from OPD and indoor of NICRH. Data was collected maintaining inclusion and exclusion criteria. The purpose and procedure of the study was discussed with the patient. All clinical information regarding previous locoregional and systemic assessment data, e.g., history, clinical examination, imaging (X-ray chest, USG whole abdomen, USG of both breast and axilla, Mammogram of both breast and axilla),previous operation note, IHC, histopathological reports was recorded from patient's case record. One hundred twenty-nine cases were collected maintaining inclusion and exclusion criteria. Statistical analysis was done according to the objective of the study by using Statistical Package for Social Science software version 25.0 for windows.

**Expected Result:** A total of 129 patients' records were included in this study. The mean age of patients was 42.03 years, median 42 ye years with an age range of 22 – 70 years. Age below 40 years 47%. Age group were 49% was <40 yrs. Patients presented with early breast cancer 13%, locally advanced 28%, No first diagnosis 51%. Working definition for No first diagnosis: Either $T_X$, $N_X$, unplanned lumpectomy / mastectomy, incomplete or lost previous document

Histopathology report was 65% moderately differentiated, 29% poorly differentiated, not mentioned about grade 2.3% cases. Unplanned operation in the form of unplanned lumpectomy or mastectomy done in 65% cases. No handling was recorded in 35% cases.

Affected side of breast was right side 53%, left side 39%, both breast 8.5%. There were definitely much higher percentage of ER –ve 60.5%, Pr –ve 69.0%, Her –ve 85.0%. Triple negative cases in this series was 61.2% cases. Most common was residual 35% cases, recurrence that is after 6 month was 23%, others were metastasis either in same+/_opposite breast with same +/_ opposite axilla or to other sites of body. Most commonly metastasis occur on same +/_ opposite axilla & to some part affected breast. As the study group is small contralateral axillary mets included within the group of carcinomas opposite breast. Next common site was chest wall. A significant portion of the patients developed recurrence on same breast as well as metastasis to other part that is metastasis to multiple site. As this was a cross sectional study many LABC patients developed metastasis within the period also. Most breast cancer reappear within 6 month 57.4%, within 12 month ( 1 year) , 15%, within 24 month (2 year). Surgical management done in the study group were CT after lumpectomy followed by MRM with LII axillary dissection, MRM( LIII+/- selective LV neck dissection), Same axilla / CAM- Axillary dissection only, Revision mastectomy with LII axillary dissection, Palliative mastectomy, a few cases Cavity shaving with axillary dissection , Excision & biopsy of the residual tumor with curative intent.

Relationship with immunohistochemistry especially triple negative breast cancer with different variables was calculated but nothing was found significant. Triple negative with age p.074, Triple negative with type of recurrence p.432, Triple negative with time of recurrence p.608

**Recommendation:** No relationship was found between immunohistochemistry with recurrence of carcinoma breast in our group. Unplanned operation in carcinoma breast is definitely affected the outcome of the patients in terms of morbidity & recurrence. So Unplanned lumpectomy should be monitored.

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# National Institute of Cancer Research and Hospital (NICRH)

**Research Title:** Relationship between HPV-DNA status with recurrence in post-radiotherapy patients of advanced cervical cancer


## Abstract

Cervical cancer is the fourth most common cancer among women globally, with an estimated 604000 new cases and 342000 deaths in 2020. About 90% of new cases and deaths worldwide in 2020 occurred in low-and middle-income countries (1). Despite advances in the development of treatment during the past decade, a sizable proportion of cervical cancer patients still exhibit local recurrence or distant metastases. The involvement of the human papilloma virus (HPV) in the development of cervical cancer has already been established with majority of the invasive cervical cancer patients being infected with HPV. Of them high-risk HPV (HR-HPV) 16, 18 comprises a substantial proportion of the infections. Although concurrent chemoradiotherapy is the main treatment modality for locally advanced cervical cancer, treatment failure in the central pelvis is no less. Currently the decision to give radiotherapy depends on FIGO staging. Although FIGO staging is a prognostic factor of cervical cancer, significant differences in prognosis are often observed for the same stage. Cytological tests are usually not valid in detecting locally persistent or recurrent disease after radiotherapy, for the effect of radiation on the cells may alter the cell morphology in the early postradiotherapy period. So, additional biomarkers for early detection recurrent disease in cervical cancer patients receiving radiotherapy is needed. The positive high-risk HPV (HR-HPV) DNA has often been considered as an important tool in the diagnosis of both pre invasive and invasive cervical cancer. Previous studies have examined the effectiveness of the HPV-DNA test in detecting residual disease or recurrence after radiotherapy. However, attempts to determine the prognostic significance of the presence or absence of HPV-DNA in patients with cervical cancer have yielded conflicting results. We considered around 80 patients at NICRH who were suffering from advanced cervical cancer ( **II** –IVA) and completed their radiotherapy around 1 year back. We tested their HPV-Status at end of 1 year after completion of radiotherapy. Among them around 50 patients showed positive HPV-DNA status even after one year of radiotherapy only 18 patients showed biopsy proven recurrence of cervical cancer (22.5%).

The purpose of the study was to see whether HPV-DNA test can be used as clinical useful markers to detect early recurrence after RT. Although some factors like treatment delay, irregular follow up influenced the study but after few more such studies we can surely say whether HPV-DNA test can be considered as a useful tool for post radiotherapy surveillance of advanced cervical cancer patients.


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# National Institute of Cancer Research and Hospital (NICRH)

**Research Title:** Short-term evaluation of bowel dysfunction after anterior resection for carcinoma rectum or rectosigmoid junction


## Abstract

**Introduction:** Colorectal cancer (CRC) is the third commonest diagnosed cancer and the second leading cause of cancer-related mortality, accounting for about 1 in 10 cancer cases and deaths. Though anterior resection with total mesorectal excision (TME) is the gold standard for the treatment of non-disseminated rectal or distal sigmoid cancer, but almost all patients have experienced some degree of bowel dysfunctions. Age of the patients, sex, the extent of rectal excision (TME/PME), the height of the anastomosis, i.e., the length of the residual rectal stump, neoadjuvant therapy, diverting stoma, post-operative complications are important predictive factors for gastrointestinal functional results. **Justification:** The findings of this study might help provide evidence-based information to the physician and patient groups for bowel dysfunction and treatment planning. For that reason, this study is highly time-demanding and justified in our perspective. Increasing knowledge about ARS among specialists may implement in systemic screening tools. Better preparation about the possible burden of ARS symptoms, active attitude towards discussing the impact of symptoms, and reinforcing social support if possible. Consequently, on the substructure of this background, the present study will be designed to assess bowel dysfunction after anterior resection. **Materials and Methods:** This retrospective observational study was carried out in the Department of Surgical Oncology, National Institute of Cancer Research & Hospital (NICRH), Mohakhali, Dhaka. The study was undertaken with the patients who already underwent AR for carcinoma rectum or rectosigmoid cancer in between January 2020 to December 2021. Data collection was started from March 2022 to May 2022 and the subject were collected from OPD and indoor of NICRH. Data was collected maintaining inclusion and exclusion criteria. The purpose and procedure of the study was discussed with the patient. All clinical information regarding previous locoregional and systemic assessment data, e.g., history, clinical examination, imaging (X-ray chest, USG whole abdomen, CT scan of whole abdomen and MRI of the pelvis) and colonoscopy with biopsy were recorded from patient's case record. Forty-one cases were collected maintaining inclusion and exclusion criteria. Statistical analysis will be done according to the objective of the study by using Statistical Package for Social Science software version 23.0 for windows.

**Result:** Out of 35 eligible patients, majority 21 (60.0%) patients were male. The mean age was found 45.83±11.92 years with range from 23 to 67 years. Regarding to tumor distance from anal verge 8(22.86%) patients' tumor were found at high rectum, 22(62.86%) at mid rectum (8-11 cm) and 5(14.29%) at low

Bowel dysfunction was observed in 94% cases, out of them 37% had major dysfunction at 6th month. The mean LARS score was found 28.6±7.2 in 3rd months and 25.7±6.8 in 6th months. The difference was statistically significant ($p$<0.05) between two groups. Bowel dysfunction i.e., Incontinence, clustering, urgency and frequency were documented at 6th month 74.29%, 77.14%, 71.43% and 82.86% respectably and were not statistically significant (p >0.05) between at 3rd and 6th months. At 6th months, bowel dysfunctions were higher and statistically significant ($p$<0.05) in those patients who underwent for TME, late closure of stoma, tumor prognostic stage III and ultra-low anterior resection. But there was no association with age, pre-operative CCRT and pT category.

**Recommendation:** Early stoma closure and receiving peri-operative CRT in time should be ensured. Improvement of information provision, screening of ARS and methods to intervene in the gap of supportive care after discharge should be maintained.


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# Institute of Epidemiology, Disease Control and Research (IEDCR)

**Research Title:** Detection of Multidrug resistance bacteria causing Health Care Associated wound infection in patients admitted in a specialized burn hospital of Dhaka


**Abstract**

INTRODUCTION

Burn patients are infected by various bacteria due to various invasive and noninvasive procedures. The rate of infections is higher in burn patients. About 75% of all deaths following burn injury are related to infection. Antimicrobial resistance is a great problem in infectious disease. In burn units, because of the wide use of antibiotics and particularly the empirical administration of broad-spectrum antimicrobial, this problem is worse than in other hospital department.

JUSTIFICATION

Due to lack of knowledge and misinformation regarding its initial first aid treatment and subsequent mismanagement as well as irrational use of antibiotics, poor infection prevention and control practices in the hospitals and the nature of the wound itself- many of the cases become victim of multidrug resistant infection. Early diagnosis of microbial infections and screening for drug resistance is crucial to institute the appropriate antibacterial therapy and to avoid further complications. This study was aimed to explore the nature of multidrug resistant bacteria involved in burn infection, its antibiogram to support the clinicians and the risk factors to further prevent its occurrence.

OBJECTIVE

To detect multi-drug resistant bacteria causing wound infection in patients admitted in a specialized burn hospital of Dhaka

METHODOLOGY

This was a hospital based cross-sectional study, which will be conducted from May 2022 to June 2022 at Sheikh Hasina National Institute of Burn and Plastic Surgery, Dhaka, Bangladesh. The study population was the patient admitted at the inpatient departments of the selected institute with suspected wound infections. Patients were selected according to case definitions considering the inclusion and exclusion criteria. Using the standard formula, the estimated sample size was 120. Patients was identified by the physicians and samples were collected according to their requisition. Samples were collected by the nurses of the respective wards and project facilitators processed and transport to National Reference Laboratory (NRL) for AMR Surveillance at IEDCR daily following Standard Operating Procedures (SOPs).

At the laboratory, the specimen was processed for bacterial isolation, identification and Antimicrobial Susceptibility Test (AST) and further evaluation for the multidrug resistant organisms. All the laboratory activities were done according to standard (CLSI) guidelines. The identification and AST of bacteria was done by using VITEK-2 automated identification system. All the laboratory activities were overseen by the head of NRL at IEDCR. Centrally at IEDCR, a dedicated supervisor coordinated all the activities related to this study and the investigators continuously monitored the lab and epi data. Supervision and monitoring visits were done by investigators. The investigators were responsible for maintaining the sampling technique. Prior to the data collection investigators visited the selected facilities and provide necessary support for data collection. The investigators also monitored the overall data and sample collection process by time-to-time visit.

The data was collected at the time of sample collection on a pre-designed semi-structured questionnaire. The questionnaire was in English and both hard and soft copy were maintained. Statistical analysis was done with Microsoft Excel and SPSS software version 25.0. After entry of study data into the database, checking data quality procedures were carried out, in addition to the validation rules, to identify problems such as missing data for core variables, inconsistencies between dates, etc. Entries flagged as errors were recorded and communicated to study staff for correction. Once all individual patient data was collected, all data fields were validated, all data queries have been finalized and de-identified, and the database was locked. A database necessary for data capture with appropriate back-up options and data access rules were created. The computer housing the database was password protected at login and on screensaver.

RESULT

*P. aeruginosa* was found the most isolated organism (46%) followed by *ACB complex (*10%) and *P. mirabilis*(8%). In week wise distribution of isolated organism *P. aeruginosa* was the highest isolated organism in most of the week's taken from the patients after admission**.** All of the organism found in this study was Multi Drug Resistant (MDR) (100%). Some of them are even Pan Drug Resistant (26%). Among the MDR bacteria there is 62% Extended spectrum Beta Lactamase (ESBL) producer (62%) and all the isolated *S. aureus* were Methicillin Resistant (MRSA). There was a high number of organisms within the Enterobacteriaceae group which are carbapenem group of antibiotic resistance (CRE) (60%).

RECOMMENDATION

Infection prevention and control measures, preparing antibiograms with regular update and disseminating among clinicians for rational use of antibiotics and enhanced awareness among health care providers are crucial to combat antimicrobial resistance. Further larger scale study with large sample size covering multiple centers should be conducted to know the depth of antimicrobial resistance and measures to be taken to combat this situation.

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# Institute of Epidemiology, Disease Control and Research (IEDCR)

**Research Title:** Circulating dengue virus serotype among the dengue fever patients in selected hospitals of Dhaka City in the pre-monsoon period 2022


**Abstract**

Acute febrile Illness (AFI) is common in tropical and sub-tropical regions of the world. A wide variety of pathogens is associated with the causation of AFI. AFI might resolve spontaneously without treatment but might also progress to fatal illness.

Dengue, one of the leading causes of AFI is an acute systemic viral infection in tropical and subtropical areas in the last few decades. Global expansion due to international travel, climate change with distribution from urban to rural settings make the dengue virus as one of the prioritized neglected tropical diseases (NTDs). World Health Organization (WHO) estimated about 50–100 million dengue cases in more than 100 countries per year, with upward trend of severe infections in Southeast Asia, Africa, South America and Western Pacific countries. At present, the WHO Southeast Asia Region is considered hyperendemic for multiple DENV serotypes.

In Bangladesh, a large outbreak due to DENV-3 occurred in 2000 with more than 5000 hospitalized cases and continued until 2002. Thereafter, dengue was found at low frequency until 2016, with DENV-2 being recorded as the predominant causative virus, followed by DENV-1. Following the observation of re-emergence of DENV-3, as well as predominance of DENV-2 in 2017, a large outbreak of dengue involving more than 10,000 cases occurred in Dhaka, the capital city of Bangladesh, in 2018. This outbreak was caused by multiple viruses including a dominant DENV-2, along with DENV-1 and DENV-3. A subsequent outbreak in 2019 caused a surge of dengue patients 10 times as high as that of previous year, i.e., 100,201 confirmed cases, among which half of the patients occurred in Dhaka, while the remaining cases were found across the rest of Bangladesh. DENV-3 was described as predominant in the unprecedented outbreak in 2019.

The objective (s) of the present study were to assess the proportion of dengue virus infection among the acute febrile cases in pre-monsoon period, to identify the circulating dengue serotype prior to the dengue season in Dhaka city, to detect geographical distribution of serotype in Dhaka city and to provide an early warning about the dengue infections and circulating serotypes in Dhaka city.

Dengue virus infection in humans usually remains asymptomatic, although ranging widely in severity from a mild fever with spontaneous remission to life-threatening hemorrhagic fever and/or shock syndrome.

Accordingly, for better control of dengue, it is essential to understand the proportion of the infections and to monitor circulating DENV serotypes in a target population. It is important to identify the circulating serotype of dengue virus at the beginning of every season for prediction of disease amplitude and severity of the disease in coming season.

The study was conducted at the Department of Virology, IEDCR. Any admitted patient irrespective of age and sex with an acute febrile illness of 2-7 days duration with 2 or more of the following: headache, retro-orbital pain, myalgia, arthralgia, rash, hemorrhagic manifestations, leucopenia or a known case of Dengue fever were enrolled in the study. The patients were enrolled from four tertiary level hospitals of Dhaka city: Dhaka Medical College and Hospital (DMCH), Ibn Sina Medical College and Hospital, Mugda Medical College and Hospital (MuMCH), Uttara Adhunik Medical College and Hospital (UAMCH). Any patient from inpatients and outpatient department (Medicine /Paediatrics), irrespective of age and sex during the period of 8th May 2022 to 7th June 2022 with an acute febrile illness of 2-7 days duration with 2 or more of the following: headache, retro-orbital pain, myalgia, arthralgia, rash, hemorrhagic manifestations, leucopenia or a known case of Dengue fever was enrolled in the study. A total of 105 suspected cases were enrolled. Blood samples were collected from the enrolled casesand transferred to IEDCR, Virology Laboratory. Upon reception of the specimens the serum were separated immediately and Dengue combo (NS1, IgG, IgM) by Immunochromatographic assay (ICT) was performed. The NS1 positive samples were selected for detection of dengue serotyping by multiplex real time PCR.

In this study, we found 24% of the acute febrile patients in the pre-monsoon period suffered from the Dengue virus infection and the predominant serotype is DEN-3 with re-emergence of the DEN-4 in Dhaka city since 2002. Dengue infection was found in both city corporation area in Dhaka city with predominant in Mugda, Uttara, Mirpur, Badda area in this study

The study gave an idea about the circulating Dengue virus serotype among the Dengue infected febrile patients in Dhaka City in the pre monsoon period.

The findings of the present study will contribute in early preparedness plan regarding management and containment of the disease at policy making level of the country.

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# Institute of Public Health (IPH)

**Research Title:** Assessment of fecal contamination in multiple water samples associated with diarrhea in urban communities of Dhaka city.


**Abstract**

**Background:** Rapid urbanization and poor sense of hygiene among the city dwellers have led to a growing sanitation crisis in urban areas of Bangladesh and potential exposure to fecal contamination in the urban water systems due to inadequate sanitation and poor fecal sludge management. In addition, faulty septic tank construction has led to groundwater contamination, and withdrawal of this contaminated underground water for household use contributes to fecal contamination. Supply water is often found cross-contaminated with sewage lines. This study was carried out to assess the fecal indicator bacteria and *Vibrio* spp.

**Materials and method:** This cross-sectional study was carried out from April to June 2022. In addition to collecting and analyzing drinking water, field notes and a semi-structured questionnaire were used to survey randomly selected households. The bacteriological analysis includes total aerobic bacteria, *Enterococcus* sp. and *Vibrio* sp. carried out according to the USFDA Bacteriological Analytical Methods (2001).

**Results**: Microbial analysis results of water from source and point-of-drinking water conducted on the same day showed30% of glass water, 25% kitchen water, 75% of storage tank water, 45% of bath water was contaminated with *E. coli*and fecal coliform bacteria i.e. *Enterobacterfaecalis*. Although no *Vibrio* species was detected in the glass water, *Vibrio chlorea* was found in bath and storage tank water.

**Conclusion:** Bangladesh standard did not allow any coliform (0 CFU/100ml) or any fecal coliform(0 CFU/100ml) in drinking water, however, Glass water shows 40% sample contamination with E coli and fecal coliform in 100% sample. The presence of *Escherichia coli* in drinking water is a public health concern and may contribute to diarrheal diseases. The findings suggest that recontamination and post-treatment contamination at the point of drinking play a significant role in water contamination in households. The water holding tank should be cleaned periodically. Intermittent investigation needs to ensure quality water supply. Findings will be helpful for policymakers to take adequate measures for safe drinking water.



**Keywords:** Potable water, *E. coli*, *Vibrio chlorea*, water reservoir, fecal contamination, indicator bacteria, low-income urban area, Dhaka city


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# National institute of Preventive and Social Medicine (NIPSOM)

**Research Title:** Association of Diabetes Self Care Management with Glycaemic Control among Adults with Type2 Diabetic Patients of Bangladesh


## Abstract

**Introduction:** Diabetes mellitus is a significant public health issue. A chronic, progressive metabolic illness called diabetes mellitus (DM) is characterized by hyperglycemia due to relative lack of insulin (type 2 DM).The aim of the objective is to evaluate the association of Diabetes Self Care Management with glycemic control among adults with type2 diabetes in Bangladesh.

**Methods:** A cross-sectional study was conducted in tertiary level hospitals in Bangladesh from January to June 2022 among 278 adults who have history of at least 1 year of Type 2 diabetes mellitus. Sample was collected by convenient sampling technique. Data was collected by using semi-structured questionnaire and diabetes self-care management was evaluated by using DSMQ scale. Data was analyzed by using SPSS version 26.

**Result:** The mean age of the respondents was 47.92±10.92 years. Among 278 respondents 71.9% were female, 92.1% were Muslim. 31.29% have completed secondary education. 61.51% were housewife. The mean monthly family income was 35,535.97 tk. 58.63% were sedentary worker. 63.31% had family history of DM. 63.53% were used oral drugs and 14.51% were used insulin. Among the respondents 81.4%, 71.6%, 55.3%had poor FBS, 2HABF and HbA1C levels respectively. According to DSMQ scale, 59.6% respondents check their levels of blood sugar with proper care and attention.77.7% selected their food to achieve optimal level of blood sugar, 68% kept up all doctor's appointment recommended, 61.8% took diabetes medication ( e.g. insulin, tablet) as advised, 69%occasionally took lots of sweets or other food rich in carbohydrates, 69.1% recorded their blood sugar level regularly, 77.7% tended to avoid diabetes related doctor's appointments, 61.2% did regular physical activities to achieve optimal levels of blood sugar, 76.6% strictly followed dietary recommendations given by their doctors or diabetes specialists, 60.4% did not check their blood sugar levels as required, 84.2% avoided physical activity, 78.7% tended to forget to take or skip their diabetes medication, 76.6%sometimes had real food binges, 80.9% thought that they should visit their medical practitioner more often regarding diabetes, 84.1% subjects tended to skip planned physical activity, 81.2% respondents had poor self-care regarding diabetes. Glucose management, dietary control, physical activity, health care use had strong negative co-relation with glycaemic control based on $HbA_1C$. These subscale has negative mild co-relation with glycaemic control based on fasting blood sugar and 2HABF.

**Conclusion:** This study provides evidence on the self-care management of T2DM patients in Bangladesh. Majority of the respondents had poor glycaemic control. The more the self-care management the better would be the glycaemic control based on $HbA_1C$.

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