ISSN 2313-4941

Volume 12 Number 2 July 2024

The Journal of Ad-din Women's Medical College

The Journal of Ad-din Women's Medical College

Volume 12, Number 2, July 2024

CONTENTS

The Journal of Ad-din Women's Medical College

ISSN 2313-4941

Volume 12, Number 2, July 2024

Instruction for the Authors

The Journal of Ad-din Women's Medical College (ISSN 2313-4941) is an official organ of the Ad-din Women's Medical College, Dhaka and published twice in January and July every year. This journal is recognized by the Bangladesh Medical and Dental Council (BMDC). We publish original articles, review articles, case reports and others (see page vi) including society news.

The manuscripts submitted in this journal should not have been published in any other journal before. All submitted papers are subjected to be reviewed by the board of reviewers and editorial panel before accepting any manuscripts. The unaccepted articles will not be sent back, but will be destroyed. Proof corrections by the authors are well appreciated.

Submission of manuscripts

Papers are accepted for publication with an understanding that they are submitted solely to the journal of Ad-din Women's Medical College and are subject to peer review and editorial revision. Statement and opinion expressed in the papers, communications letter herein are those of author(s) and not necessarily of the editor and/or publisher.

Papers should be submitted with three hard copies and a soft copy (CD) labeled clearly with the manuscript title, name of first author with date, designation, mobile no. and email address to the Executive Editor with a copy to Editor-in-Chief of journal of Ad-din Women's Medical College, 2 Bara Moghbazar, Dhaka-1217, Bangladesh.

Form of full papers submitted for publication

The manuscript should be prepared using MS-Word. The whole manuscript should not exceed 4000 words. The manuscript should be divided into: (title page, abstract, body/text, references), but should be submitted as one document. All parts of the manuscript should be typed or printed on only one side of the paper in double space with wide margins of at least 2.54 cm in all sides of the manuscript throughout.

While the preferred font remains Times New Roman size 12 cpi. numbering of the pages should be done consecutively, beginning from the title at the lower right hand corner of each page. Each component of the manuscript should begin on a new page in the sequence of title page, abstract, text, reference, tables and legends for illustration.

Title page

The title page should include the title of the manuscript which should be concise within 45 characters. Name of authors with their highest academic degree(s), institutional affiliations and name of the departments should be mentioned. The complete mailing address and email IDs of the first and correspondence author(s) should be included to whom the proofs and all other correspondence should be sent.

Abstract

Each manuscript requires an unstructured abstract that should include objective, methods, results, conclusion and key words in not more than 150 words for any review article or case report an 250 words for structured abstract only for original article summarizing the significant information and findings. Authors must give two to five key words identifying the most important topics covered by the manuscript. Abbreviations, diagrams, and references in the abstract should be avoided.

Body/Text

The body of the manuscript/text should be divided into the following sections: i) Introduction, ii) Materials and Methods, iii) Results (include tables and diagrams), iv) Discussion, v) Conclusion, and vi) Acknowledgement if any (particularly on funding, study subjects and co-author).

Introduction

It includes a short yet robust background purpose and the rationale for the study (or summarized observation), including pertinent references, but data or conclusion from any work should not to be included.

Material and methods

In this section, selection of the study subjects (patient or laboratory animals, including controls) should be described clearly. The age, sex and other characteristics

of study subjects should be identified. The total methodology in details, apparatus to be used, and procedure to be followed must be given in sufficient details to allow other researcher to reproduce it, as and if required for. References should be given to establish methods including statistical lines and precise identifications should be provided for all the drugs and chemicals to be used including generic names, dosage and route of administrations. Authors(s) submitting review manuscripts are advised to include a section describing the methods used for locating selecting, extracting and synthesizing data. If data is collected from other sources (published or unpublished) then proper permission(s) should be obtained and mentioned with acknowledgement.

Results

Results should be presented in a logical sequence in the text, tables, figures and/or illustrations. The use of too many tables or diagrams in relation to the length of text may produce difficulties in the layout of pages.

Tables and Figures

Tables should be embedded in the text and numbered consecutively in the order of their first citation in the text. The title of the table should be brief yet self-explanatory. Tables should not be submitted as photograph. All figures should be included as one separate sheet or file. The title should appear above each table (short and descriptive. Please mention a clear legend and any footnotes suitably identified below, clearly. Figures should be labeled properly, fitting to necessary size of the page. Captions of all figures should be typed, double-spaced and showed on a separate sheet. All original figures should be clearly marked in pencil on the reverse side with the number, author's name.

Footnotes

Place explanatory matter in footnote, not in the heading. For uniformity of style, authors should use symbols for footnotes such as 51.7 etc.

Illustrations

Illustrations submitted (line drawings, photos, photo-micrographs, etc.) should be clean, original, or as a digital files. Digital files are recommended to use since this produces highest quality following criteria, below:

- Minimum 300 dots per inch (DPI) or higher
- Appropriate sized to fit in journal page
- Preferably in JPEG and GIF formats
- Subject/ patient face must not be identified in diagram
- Should be submitted as separate files, not embedded in text files.

Discussion

This section should present a detailed yet comprehensive analysis of findings/results to describe, compared & criticized (positively or negatively) in the light of previous relevant studies, in the country or abroad. It should emphasize the new and important aspect of the study and the conclusions that follow from them. Repetition of detailed data &/or other materials given in introduction or result section may be avoided, unless deemed essential (in rare cases).

Conclusion

In the gist, study findings should be linked with the study goals. Recommendation may be included as appropriate including implication(s) of the findings and limitations if any.

Acknowledgements

Acknowledgement may be added, but if any should be placed at the end of the body/text and should be limited within 100 words. This section may particularly be used to acknowledge those persons who do not qualify for authorships but worked significantly for this study or write up manuscripts.

Acknowledgement for funding, donated resources, or significant contributions of research materials be made as well, if author(s) wish.

References

All references should be cited in the text following Vancouver system/style in Arabic numbers, to number the texts, consecutively, following an order in which if appears first in the text using superscript (or cite within the text numbers in round brackets). If a reference is cited more than once the same number should be used each time. References cited only in tables or figure legends should be numbered in accordance with the sequence from the last number used in the text and follows the order of individual tables/figures. At the end of the paper, on a page(s) separate from the text, a references list must be added following exact Ref. No. in numerical order. References to materials available on websites should include the full internet address and the date of the version cited as: Authors' names (in normal order), document title, and date of Internet publication

or other retrieval information (date of access), text division (if applicable). Examples of references are given below.

(i) Reference from the Journals

1. Parkin DM, Clayton D, Blook RJ, Massyer E, Fried HP, Iranov E et al. Childhood leukaemia in Europe after Chernobyl: 5 years follow up. Br J Cance 1996; 73: 1006-1012
2. Paganini HA, Chao A, Ross RK, Henderson Aspirin use and chronic diseases: a cohort st of the elderly. BMJ 1989; 299: 1247-1250

Note: The name of the journal & its volume should be in Italic.

(ii) Books

1. Gyton AC, Hall JE The thyroid metabolic hormones In Textbook of Medical Physiology. 10th edn. NewTork: WB Saunders Company. 2000: 858-86

(iii) Internet

I. Harverd medical school Available https:// en.wikipedia. org/wiki/havard medical college, accessed October 2011

(iv) Thesis/Dissertations

1. Khan MAH. Lipid profile and renal function status of hypothyroid patients [MD Thesis). Dhaka Bangabandhu Skeikh Mujib Medical University:2005

(v) Scientific or technical report

1. Akutsu T. Total heart replacement device. Bethesda MD: National Institutes of Health, National Heart and Lung Institute, 1974 Apr report No. N1H-NHLI-69 2185-4 Ethical approval

The authors should mention the name of the ethical approval authority or (IRB: Institutional Review Board) for their study either separately or in materials and methods section, particularly if the study has been done on human subjects, laboratory samples or laboratory animals. However, not all surveys may not require an ethical permission, parse, in general. But it can be obtained & attached with the proposal, if the authors(s) wish.

Authorship Statement

A form must be signed by all listed authors indicating the contribution to the paper made by each. The corresponding author is responsible for obtaining signatures from all listed authors and using. A check off form, should indicate by name what each author contributed to each of the various aspects of the study: However, (e-signature are accepted except 1st & corresponding authors).

- study concept
- study design
- data collection & processing
- statistical analysis
- manuscript writing

Editorial action

Once the Board of Editors receives the manuscripts it would be examined & reviewed thoroughly for its content, quality, writing skills & if the manuscript contains any newer/novel issues, important to get it published. Rejected manuscripts will not be returned. Proofs correction by the authors will be

appreciated. Once it requires for gross errors or incompleteness. No reprint will be provided. The editors reserve the customary right to check the style and if necessary. May shorten some/few parts of the manuscripts before it can be accepted for publication and thus, to determine the priority, and time, for its publication. The editor assumes that the writings are based on honest observations. It is not the task of the editor to investigate scientific frauding paper or to check false/fake data. However, plagiarism will be checked by the reviewers; but the authors are suggested to check the plagiarism on their own, which will be prioritized for reviewing, editing & publishing the manuscripts.

Copyright

Accepted papers will be the permanent property of the Journal of Ad-din Women's Medical College. By submitting the manuscript, the authors agree that once the article is accepted for publication, copyright of their article is automatically transferred to the Ad-din Women's Medical College, Dhaka.

Further instruction for preparing paper and submission

Please read the following submission checklist that summarizes the main features for manuscripts to be submitted at the Ad-din Women's Medical Journal. Please ensure your manuscript follows the recommended number of pages, references etc. for specific articles to be accepted by the Ad-din Women's Medical Journal as shown below.

1. Type of article: **Original Article**
   No of references: 35
   Abstract: Yes, 250 words
   Maximum number of printed pages: 5 (=14 msw pages*) approx. 4500 words
   Headings: Yes
   Keywords: Yes

2. Type of article: **Mini commentary focusing articles published in the journal**
   No of references: maximum 5
   Abstract: No
   Key notes: No
   Maximum number of printed pages: 1 printed page, or Maximum 800 words
   Headings: No
   Keywords: No

3. Type of article: **Brief report**
   No of references: maximum 5
   Abstract: No
   Key notes: No
   Maximum number of printed pages: 1 printed page, or maximum, 1000 words
   Headings: No
   Keywords: No

4. Type of article: **Editorial**
   No of references: maximum 10
   Abstract: No
   Key notes: No
   Maximum number of printed pages: 3 pages, or max, 2000 words
   Headings: No
   Keywords: No

5. Type of article: **Clinical overview**
   No of references: 30
   Abstract: Yes, maximum 200 words
   Key notes: No
   Maximum number of printed pages: 3 (=9 ms pages*) approx.3000 words
   Headings: No
   Keywords: Yes

6. Type of article: **Review article**
   No of references: maximum 60
   Abstract: Yes, maximum 150 words
   Key notes: No
   Maximum number of printed pages: 8(= 24 ms pages*) approx. 6650 words
   Headings: Yes
   Keywords: Yes

7. Type of article: **Mini review**
   No of references: 30
   Abstract: Yes, 200
   Key notes: Yes
   Maximum number of printed pages: 4 (= 12 ms pages*)approx. 3500 words
   Headings: Yes
   Keywords: Yes

8. Type of article: **Case report**
   No of references: max 15
   Abstract: Yes, 200
   Key notes: Yes
   Maximum number of printed pages: 4 (=12 ms pages*) approx. 3500 words
   Headings: Yes
   Keywords: Yes

9. Type of article: **Society news**
   No of references: 20
   Abstract: No
   Key notes: Yes
   Maximum number of printed pages: 1 printed page, or maximum 1000 words
   Headings: No
   Keywords: No

10. Type of article: **Commentary**
    No of references: max 9
    Abstract: No
    Key notes: No
    Maximum number of printed pages: 1/2 printed page, or max, 500 words
    Headings: No
    Keywords: No

11. Type of article: **Perspective**
    No of references: 5
    Abstract: No
    Key notes: No
    Maximum number of printed pages: 2 printed page, or maximum, 1000 words
    Headings: Yes
    Keywords: No

12. Type of article: **Reader's forum**
    No of references: 3
    Abstract: No
    Key notes: No
    Maximum number of printed pages: 1/2 printed page, or maximum, 500 words
    Headings: No
    Keywords: No

13. Type of article: **Essay**
    No of references: 5
    Abstract: No
    Key notes: No
    Maximum number of printed pages: 2 printed page, or maximum, 1000 words
    Headings: Yes
    Keywords: No

14. Type of article: **Different view**
    No of references: 10
    Abstract: No
    Key notes: No
    Maximum number of printed pages: 2 printed page, or maximum, 1500 words
    Headings: Yes
    Keywords: No

15. Type of article: **News and views**
    No of references: No
    Abstract: No
    Key notes: No
    Maximum number of printed pages: 2 printed page, or maximum, 500 words
    Headings: Yes
    Keywords: No

16. Type of article: **Letter to the Editor**
    No of references: 05
    Abstract: No
    Key notes: No
    Max no. of printed pages: 2 printed page, or max, 500 words
    Headings: Yes
    Keywords: No

Editorial

Health Workforce in Bangladesh

Muhammod Abdus Sabur

Bangladesh has an extensive network of health facilities from the government covering different tiers, particularly in rural areas – community clinics, union sub-center/union health and family welfare center, upazila health complex, district/general hospital, medical college hospital, and specialized institute hospital. However, people, in general, are not happy with the existing health system. Nice building with equipments, medicines, and other supplies, but with limited service providers (both in number and qualification), fail to gain confidence of the people. Money, drugs, and infrastructures are needed but they demand a motivated, skilled, and supported workforce. Health care is a labor-intensive service sector. Health service providers are the personification of a system's core values – they heal and care for people, ease pain and suffering, prevent disease, and mitigate risk – the human link that connects knowledge to health action. In health systems, workers function as gatekeepers and navigators for the effective, or wasteful, application of all other resources such as drugs, vaccines, and supplies[1]. Health workers spearhead and glue together the health system[2].

World Health Organization (WHO) defines health workers to be all people engaged in actions whose primary intent is to enhance Health[1]. Bangladesh is known for its pluralistic health system[3]. Thus Bangladesh has many categories of health workers – super specialist physician, specialist physician, graduate physician, diploma physician, alternative medical care (homeopathy, ayurvedic, unani) physician (graduate and diploma), nurse (diploma, graduate, masters), midwife (diploma, graduate), medical technologist (laboratory, dental, pharmacy, physiotherapy, radiology, radio-therapy, etc.), paramedics (medical assistant, community paramedic, mid-level ophthalmic paramedic), community-based skilled birth attendants, community health care provider, etc.

The Joint Learning Initiative (JLI), a network of global health leaders identified (1) shortage, (2) maldistribution, (3) skill-mix imbalance, (4) negative work environment, and (5) weak knowledge base as challenges with health workforce[4]. Bangladesh is not an exception to the challenges mentioned.

1. Shortage

WHO has identified the index of 4.45 physicians, nurses, midwives, and other categories per 1,000 population to estimate the health human resources (HRH) need and need-based shortage by 2030[5]. WHO has also recommended a ratio of physicians: nurses and midwives: others cadres as 1:3:5[6]. These mean 0.5 physicians; 1.5 nurses and midwives and 2.45 other HRH are required for every 1,000 population. Bangladesh has a 165,158,616 population[7]. So the country needs 82,579 physicians. The estimated number of MBBS doctors available in the country is 101,559. In 116 medical colleges (39 government and 77 non-government), 11,328 seats (4,500 government and 6,828) are available for yearly admission in MBBS courses. Similarly, Bangladesh needs 247,737 nurses and midwives and has 93,147 nurses and midwives. A total of 35,765 seats are available in government and non-government institutions for the yearly admission of nurses and midwives. Against the requirement of 412,895 other categories of HRH, Bangladesh has 305,828 (medical assistants, pharmacists, technologists, family welfare visitors, community paramedics, and community skilled birth attendants)[8]. So, Bangladesh doesn't have any shortage of physicians and will continue to be in such a situation in the coming years, given the seats available

Muhammod Abdus Sabur, Professor and Chairman, Governing Body, Ad-din Women's Medical College, Dhaka. Mobile: 0173166295575, E-mail: sabur.pso@gmail.com

Received Date : 5 April, 2024
Accepted Date : 23 May, 2024

for annual intake. However, the country clearly suffers from a shortage of nurses and midwives. Given the capacity of annual intake, it may overcome the shortage in the next five years. Bangladesh also has a shortage of other allied professionals.

2. Maldistribution

Globally health workers are distributed unevenly. Countries with the lowest relative need have the highest numbers of health workers, while those with the greatest burden of diseases must make do with a much smaller health workforce. The Region of the Americas, which includes Canada and the United States, contains only 10% of the global burden of disease, yet almost 37% of the world's health workers live in this region. In contrast, the African Region suffers more than 24% of the global burden of disease but has access to only 3% of health workers[1]. Vietnam reported on average just over one health service provider per 1,000 people, but this figure hides considerable variation. In fact, 37 of Viet Nam's 61 provinces fall below this national average, while at the other extreme one province counts almost four health service providers per 1,000[9]. While globally under 55% of all people live in urban areas, more than 75% of doctors, over 60% of nurses, and 58% of other health workers also live in urban areas[1].

Table 1: Division-wise HRH under the Directorate General of Health Services and Directorate General of Family Planning as of 2021[10]

Division	Total sanctioned posts	Total filled-in posts	Vacancy in %	Medical Doctors, including Dentists and Traditional and Complimentary Medicine Professionals Vacancy in %	Nursing and Midwifery Professionals Vacancy in %
Barishal	16,942	11,336	33	59	19
Chattogram	39,202	25,517	32	33	42
Dhaka	81,196	55,226	35	34	22
Khulna	24,672	16,576	33	52	18
Mymensingh	15,976	11,749	26	41	18
Rajshahi	28,897	21,238	27	42	12
Rangpur	23,291	16,483	29	50	19
Sylhet	14,536	8,709	40	46	53

Table 2: Division-wise Density of the Health Workforce per 10,000 population in 2019[11]

Division	Qualified and Recognized	Non-qualified/Unrecognized	Total
Barishal	18.85	16.92	35.77
Chattogram	36.72	9.94	46.65
Dhaka	90.01	38.42	128.42
Khulna	31.56	19.28	50.85
Mymensingh	15.56	23.17	38.73
Rajshahi	8	7.34	15.34
Rangpur	28.07	9.62	37.69
Sylhet	11.29	5.35	16.64
Grand Total	33.17	15.83	49.01

3. Skill-mix imbalance

WHO has recommended a ratio of physicians: nurses and midwives: others cadres as 1:3:5[6]. WHO has also identified the index of 4.45 physicians, nurses, midwives, and other categories per 1,000 population[5]. These mean 0.5 physicians, 1.5 nurses and midwives, and 2.45 other HRH are required for every 1,000 population. Bangladesh has 0.61 physicians, 0.56 nurses and midwives, and 1.85 other categories of HRH per 1,000 population[8]. Therefore serious skill-mix imbalance exists in HRH in Bangladesh. One-third of nurses/midwives and three-fourths of other HRH exist than required.

4. Negative work environment

Both shortage and skill-mix imbalance contribute to the negative work environment. Shortage puts an extra workload on those are present, which may continue for a long time. Skill-mix imbalance results in a lack of the right kind of supportive staff. Other factors contributing to the negative work environment include limited supplies of medicines and limited /non-functioning equipment resulting in confrontation with the service seekers. Most of the health workers have limited career progression opportunities. Some also experience complete blocks in career progression. Pressure from the powerful corners (including political, bureaucratic, and others) for providing undue favor - asking to visit their home for service, issuance of false/ grievous injury certificate, breaking the queue of the service, etc. Concerns about security, particularly of female workers also fuel the negative work environment.

5. Weak knowledge base

Table 3: Total number of HRH education institutions over the years in Bangladesh[12]

Education Institutions	2010	2016	2020
Medical Colleges	62	105	113
Dental Colleges	17	35	35
Nursing Colleges	30	64	174
Nursing Institutions (Nursing and Midwifery)	57	157	223
Medical Assistant Training School (MATS)	47	208	209
Institute of Health Technology (IHT)	61	105	110

The very rapid growth of medical, dental, nursing, midwifery, paramedic and medical technologist institutions in both the public and private sectors within a short span of time resulted in a serious shortage of teachers and compromised faculty quality. The scarcity of physical spaces, laboratory facilities, exposure to the patients, and hands-on training are well-documented [13,14,15]. Outdated course curricula with limited duration also contribute to the weak knowledge base. With almost nil provision of any systematic in-service training, the weak knowledge base continues and further deteriorates due to the very aggressive marketing promotion of pharmaceutical companies.

Since the health workforce is the key component of the health system, without mitigating its challenges health system will not be functioning effectively and thus will not achieve universal health coverage. Since Bangladesh has a huge shortage of nurses, midwives, and medical technologists, para-medics attention on an urgent basis needs to produce more with quality. As the country achieved the minimum threshold for physicians, efforts should be targeted to ensure quality of education. For equity and universal health coverage, the mal-distribution issue needs to be tackled by completely reviewing the need for workers with appropriate numbers and clear roles to perform and develop those capacities adequately. Facilities at each level like community clinics, unions, upazila, district, national, and urban areas need thorough reviewing to clearly delineate roles to play with proper staffing to ensure skill mix. A proper working environment needs to be ensured for the HRH at all levels by resolving issues of recruitment, deployment, and promotion. Finally teaching institutes need to overcome their limitations to impart quality education, as only competent HRH will be the vehicle to achieve the desired universal health coverage.

References

1. World Health Organization (WHO). 2006. Working together for health. The World Health Report 2006. Geneva. WHO
2. Bangladesh Health Watch (BHW). 2008. The State of Health in Bangladesh 2007: Health Workforce in Bangladesh, Who Constitutes the Healthcare System? Dhaka. James P. Grant School of Public Health, BRAC University
3. A Mushtaque R Chowdhury, Abbas Bhuiya, Mahbub Elahi Chowdhury, Sabrina Rasheed, Zakir Hussain, Lincoln C Chen. 2013. The Bangladesh paradox: exceptional health achievement despite economic poverty. Lancet 2013; 382: 1734–1745

4. The Joint Learning Initiative (JLI). 2004. Human Resources for Health: Overcoming the Crisis. Global Equity Initiative, Harvard University
5. World Health Organization (WHO). 2016. Global strategy on human resources for health: workforce 2030. Geneva. WHO
6. World Health Organization (WHO). 2015. Bangladesh health system review. Geneva. WHO
7. Bangladesh Bureau of Statistics (BBS). 2022. Population and Housing Census 2022. Preliminary Report. Dhaka. BBS, Ministry of Planning
8. Ministry of Health and Family Welfare (MOHFW). 2023. HRH Data Sheet 2023.Dhaka. Human Resources Branch, Health Services Division, MOHFW
9. Prasad A, Tandon A, Sousa A, Ebener S, Evans DB. 2006. Measuring the efficiency of human resources for health in attaining health outcomes across provinces in Viet Nam. Geneva, World Health Organization
10. Asian Development Bank (ADB). 2022. Bangladesh Health Sector Needs Assessment (Draft). Dhaka. ADB
11. Ministry of Health and Family Welfare (MOHFW). 2022. HRH Data Sheet 2022.Dhaka. Human Resources Branch, Health Services Division, MOHFW.
12. Ministry of Health and Family Welfare (MOHFW) and World Health Organization (WHO). 2021. Health Labor Market Analysis in Bangladesh 2021.Dhaka. Human Resources Branch, Health Services Division, MOHFW and WHO
13. Md. Abdullah and Dr. Muhammod Abdus Sabur. 2016. Situation Assessment of New Medical Colleges in Bangladesh. Dhaka. Sector Wide Management and Monitoring Operational Plan, Health Population and Nutrition Sector Development Program, Ministry of Health and Family Welfare
14. Rashid Zaman, Muhammod Abdus Sabur, Adiba Khaled and Shahidul Islam. 2019. Baseline Study on Trained Diploma Midwives in Bangladesh. Oxford: Oxford Policy Management and Dhaka: Mitra and Associates
15. Shah Monir Hossain, Muhammod Abdus Sabur, Khaleda Islam and Rumana Huque. 2021. Developing Competency-Based Allied Workforce. Dhaka. ARK Foundation

Original Article

Obstetrical Catastrophe: Ruptured Uterus- Incidence, Risk Factors, Fetomaternal Outcome and Management in Ad-Din Women's Medical College and Hospital, Dhaka, Bangladesh

Rahima Khatun[1], Sabiha Sultana[2], Nasima Begum[3], Nilufar Jahan[4], Banika Biswas[5], Shahnaz Akhter[6]

Abstract

Background: A ruptured uterus is a catastrophic condition. It is associated with a high incidence of fetal and maternal mortality and morbidity.

Objective: To determine the incidence, risk factors, maternal and fetal outcome, and management of uterine rupture in Ad-din Women's Medical College and Hospital, Dhaka, Bangladesh.

Materials and Methods: This prospective observational study of patients with ruptured uterus from July 2022 to June 2023 admitted at Gynaecology and Obstetrics department of Ad-din Women's Medical College and Hospital, Dhaka. All the cases of ruptured uterus who were either admitted with ruptured uterus or who developed it in hospital were included in the study. Patients were initially assessed in emergency and labor wards, and relevant sociodemographic data, obstetric history, and previous antenatal and surgical history were recorded. Ways of management, and maternal and fetal outcomes were taken for analysis.

Results: There were 45 cases of ruptured uterus out of a total of 17,288 deliveries over one year with a prevalence of 0.26%. The most common age group was 30-35 years, and most of the patients 37(82.2%) had a history of previous cesarean section. A maximum of 24 (53.3%) rupture of the uterus was found >36-40 weeks. Subtotal hysterectomy was done in 4 (8.9%) patients, and Subtotal hysterectomy with the repair of the bladder was done in 2 (4.4%) patients, out of 45 patients, 4 (8.9%) patients developed acute renal failure and maternal death was found 4 (8.9%) patients. IUFD was found in 21 (46.7%) babies, 10 (22.2%) babies needed NICU and neonatal death was found in 4 (8.9%) babies.

Conclusion: Uterine rupture is a preventable obstetric complication that carries severe risks both to the mother and to the baby. Proper antenatal care, appropriate counseling of patients with a history of previous caesarian section for hospital delivery, and training of skilled birth attendants can reduce maternal and perinatal mortality and morbidity due to ruptured uterus.

Keywords: Uterine rupture, risk factors, maternal and fetal outcomes, management, caesarian section

1. Associate Professor, Department of Obstetrics and Gynaecology, Ad-din Women's Medical College and Hospital
2. Associate Professor, Department of Obstetrics and Gynaecology, Shaheed Monsur Ali Medical College and Hospital
3. Associate Professor, Department of Obstetrics and Gynaecology, Enam Medical College and Hospital
4. Assistant Professor, Department of Obstetrics and Gynaecology, Ad-din Women's Medical College and Hospital
5. Associate Professor, Department of Obstetrics and Gynaecology, Ad-din Women's Medical College and Hospital
6. Associate Professor, Department of Obstetrics and Gynaecology, Ad-din Women's Medical College and Hospital

Correspondence: Rahima Khatun, Associate Professor, Department of Obstetrics and Gynaecology, Ad-din Women's Medical College and Hospital. Email: anisdoc14@yahoo.com, Mobile no: 01712721383

Received Date : 3 March, 2024
Accepted Date : 18 March, 2024

Introduction

Disruption in the continuity of all uterine layers (endometrium, myometrium, and serosa) any time beyond 28 weeks of pregnancy is called a rupture of the uterus. Whereas improved obstetrics care reduces the rupture from obstructed labor there has been an increased prevalence of scar rupture following increased incidence of caesarian section over the year[1].

Uterine rupture is an obstetric catastrophe sometimes leading to tragic maternal and fetal outcomes. It is complete when a full-thickness disruption of the uterine visceral peritoneum and incomplete when the disruption does not involve the overlying visceral peritoneum[2].

The incidence of uterine rupture in developed countries is low due to the availability and access to quality

obstetric services, most cases occur in women with uterine scar following previous cesarean section[3,4]. Incidence of between 0.36% to 2.44% were reported in Nigeria, Ethiopia, Pakistan, Senegal and Mali [5,6,7,8,9]. However, the major causes of uterine rupture in developing countries are obstetric and non-obstetric multiple factors such as; multi-gravidity, teen-age pregnancy, old primipara mother, poor socio-economic status, previous caesarian section scar, unsupervised labor and unwise use of uterotonic agents[10].

The signs and symptoms of uterine rupture, largely depend on timing, site, extent of uterine defect, severe hemorrhage, easily palpable fetal parts, the recession of presenting fetal parts, loss of uterine contour contractility, and rarely blood-stained urine, the appearance of placenta at the vulva and prolapsed of loops of gut into the vagina[11]. The documented fetal complications are neonatal intensive care unit (NICU) admission, fetal hypoxia, and neonatal death[8,12]. Maternal consequences include hemorrhage, bladder injury, hypovolemic shock, vesicovaginal fistula(VVF), permanent loss of fertility, and even maternal death[13].

The type of surgical treatment is dependent on the severity and extent of the rupture, hemodynamic status of the mother, future fertility desire, and surgeon experience. The available options include total abdominal hysterectomy (TAH) or subtotal abdominal hysterectomy (STAH), repair of the uterus with or without tubal ligation[14,15]. Uterine repair is usually reserved for those cases with lower segment rupture, without broad ligament, vaginal lower segment and cervical extension, haemo-dynamically stable condition, controllable hemorrhage, and young patients desiring future fertility. Hysterectomy is justified for hemo-dynamically unstable patients, unrepeatable rupture, and where fertility is not desired[16].

Material and methods

A prospective observational study was conducted from July 2022 to June 2023 at the Gynecology and Obstetrics Department of Ad-din Women's Medical College and Hospital. It is a tertiary-level hospital where emergency obstetric surgery is performed. During this period total of 17,288 patients were admitted to the hospital for delivery purposes and 45-50 deliveries were being conducted daily. The data was collected from the labor ward and operation theatre registers book as well as from the patient's case files in the hospital medical records files.

During this period, 45 patients having ruptured uterus, mostly referred and a few delivered in hospital were studied. Patients were initially assessed in the emergency and labor wards, and relevant sociodemographic data, obstetric history, period of gestation, and previous uterine scar were recorded. The site of rupture, type of surgery, unit of blood transfusion, and maternal and fetal outcome were also recorded.

Result

This study analyzes 45 cases of ruptured uterus documented over 12 months from July 2022 to June 2023. During this timeframe, 17,288 deliveries were recorded. The incidence of ruptured uterus in this population was found to be 0.26%.

Table 1: Socio-demographic factors

Factor	No of patients (45)	Percentage %
Age (in years)		
16 to 19	0	0
20 to 29	18	40%
30 to 35	23	51.1%
35+	4	8.9%
Parity		
Para-1	15	33.3%
Para-2	25	55.6%
Para-3 or more	5	11.1%
Antenatal care		
Regular	17	37.8%
Irregular	28	62.2%

The socio-demographic distribution of participants is illustrated in Table 1. Notably, the majority of patients were between the ages of 20 and 35 years. Specifically, 40% (18) were aged 20 to 30 years, while 51.1% (23) were in the 30 to 35 years category. A smaller proportion, 8.9% (4), were aged 35+ years. No patients were recorded in the 16 to 20 years age group. The majority of the patients (25) have two children, and most of the patients 28 (62.2%) had irregular antenatal checkups whereas only 17 maintained regular checkups.

Table 2: Causes of Ruptured Uterus

Risk factor	No of patients	Percentage %
Obstructed labor	3	6.7%
Injudicious use of oxytocin	5	11.1%
Silent scar dehiscence	37	82.2%

The result of the causes of uterine rupture in this study revealed that silent scar dehiscence was the most significant risk factor, identified in 37 patients (82.2%). Induction of labor was done in only 5 patients.

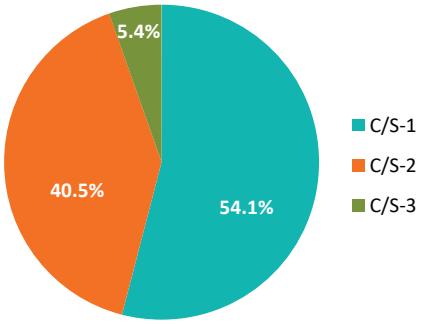

Figure 1: History of C/S

Figure 1 Shows that 20 patients (54.05%) had a history of previous C/S-1, and only 2 (5.4%) of cases had a history of previous C/S -3 or more where 15(40.5%) of the patients had a history of C/S-2.

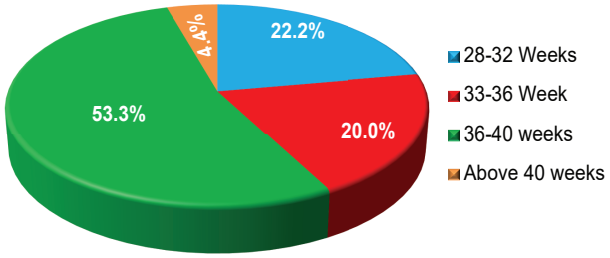

Figure 2: Gestational Age

Figure 2 shows that the maximum 24 (53%) rupture of the uterus was found in 36-40 weeks of gestation. Among them, only 2(4%) ruptures of the uterus were found above 40 weeks of gestation. Two age groups 28-32 weeks and 33-36 weeks show nearly the same distribution for the raptured uterus with 22% and 20% of the patients respectively.

Table 3: Per–operative findings

Findings	No of patients	Percentage %
Hemoperitoneum		
Present	26	57.8%
Absent	19	42.2%
Site of rupture		
Scar rupture	8	17.8%
Rupture of the lower segment	17	37.8%
Extension to upper segment	12	26.7%
Extension up to the broad ligament	2	4.4%
Injury to the urinary bladder	4	8.9%
Not explored due to death	2	4.4%

In this study, hemoperitoneum was found in 26 (57.8%) cases, rupture of the lower segment was found in 17 (37.8%) cases, extension to the upper segment was found in 12 (26.7%) cases, Injury to the urinary bladder was found 4 (8.9%) cases.

Table 4: Management during operation

Surgical management	No of patients	Percentage (%)
Repair of uterus	25	55.6%
Repair of the uterus with tubal ligation	10	22.2%
Subtotal hysterectomy	4	8.9%
Subtotal hysterectomy with repair of bladder	2	4.4%
Repair of uterus with repair of bladder and tubal ligation	2	4.4%
Not done due to cardiac arrest and death	2	4.4%

This study showed the repair of the uterus was done in 25 (55.6%) patients, a hysterectomy was done in 4 (8.9%) patients, a Subtotal hysterectomy with repair of the bladder was done in 2 (4.4%) patients, and repair of the uterus with repair of bladder and tubal ligation was done 2 (4.4%) patients. Surgery was not possible due to cardiac arrest and death in 2 (4.4%) patients.

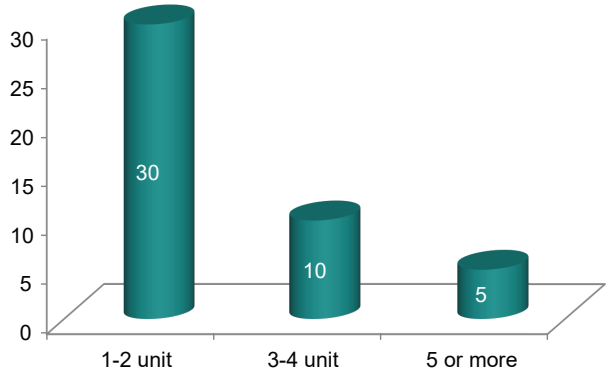

Figure 3: Blood Transfusion During Operation

Figure 3 displays that during the operation 30 patients needed 1-2 units of blood transfusion, 10 patients needed 3-4 units of blood transfusion, and the rest 5 patients needed more than 5 or more units of blood transfusion during operation.

Table 5: Outcome of mother

Maternal outcome	No of patients	Percentage
Needed ICU	17	37.8%
Renal failure	4	8.9%
Death	4	8.9%
Recovery	35	77.8%

We can see from Table 5 that in this study of 45 patients, 17 (37.8%) required admission to the Intensive Care Unit (ICU), indicating significant severity. Four patients (8.9%) experienced renal failure, and there were four maternal deaths, also 8.9%. However, 35 (77.8%) patients achieved full recovery, highlighting the potential for successful outcomes despite serious challenges.

Table 6: Outcome of baby

Fetal outcome	No of patients	Percentage
IUFD	21	46.7%
Needed NICU	10	22.2%
Neonatal death	4	8.9%

Table VI shows that intrauterine fetal death (IUFD) occurred in 21 cases, representing 46.7% of the cohort. Additionally, 10 patients (22.2%) required admission to the Neonatal Intensive Care Unit (NICU). The study also reported four neonatal deaths, accounting for 8.9% of the total.

Discussion

The ruptured uterus remains one of the serious obstetric complications. Lack of health information, illiteracy, poor antenatal care, poverty, home delivery by birth attendants, and delay in referrals all contribute to uterine rupture[17]. The prevalence widely varies from 1 in 2000 to 1 in 200 deliveries[1]. In this case, the prevalence of ruptured uterus is 0.26%.

Most of the patients in this study were 23 (51.1%) between the ages of 30-35 years. This was compared with another study, where most of the women belonged to the age 21- 30 years (30%). The majority of the patients 25 (55.6%) have two children. This research was similar to another study, in which 42.7% were found in para (2-4). Most of the patients 28(62.2%) had irregular antenatal checkups and similar results were found in other studies [18].

This research showed rupture of the previous scar was the most common cause 37(82.2%), induction of labor was done in 5 patients and obstructed labor was found in 3 patients. Another study found that a common etiological factor proved to be the previous caesarian section 75.55% [19]. In our study, most of the patients had a history of 1 C/S 20(54.4%), and 15(40.05%) patients had a history of 2 C/S. A maximum of 24 (53.3%) ruptures of the uterus were found at 36- 40 weeks, which was similar to the investigation done at Faridpur Medical College Hospital, Bangladesh where most of the ruptures occurred at 37-40 weeks 53%[18].

Pre-operative findings, haemoperitoneum was present in 26 cases (57.8%), 19 (43.2%) had rupture of the lower segment, 12 patients (26.7%) had rupture extension to the upper segment, and 4 patients had an injury to the bladder. In this study, 2 patients were not explored as the patients expired during resuscitation. This study showed repair of the uterus was done in 25 patients, subtotal hysterectomy was done in 4 patients, Subtotal hysterectomy with the repair of the bladder was done in 2 patients, and repair of the uterus with the repair of the bladder and tubal ligation was done in 2 patients. A similar situation was observed in India where repair of the uterus was 75.5% [19]. In Nigeria, repair of the uterus was done in 58.3% and hysterectomy was done in 3 patients[20].

During the operation, 30 patients needed (1-2) unit blood transfusion, and 10 patients needed (3-4 unit blood transfusion. Out of 45 patients, 35 patients improved (77.8%), 4 patients developed acute renal failure, and maternal death was found in 4 patients. But, maternal mortality secondary to uterine rupture was lower in this study. A similar result was found in a study where maternal death was 16(6.6%)[21]. The possible explanation for this, is timely diagnosis, adequate resuscitation, availability of blood transfusion, and no delay in between diagnosis and definitive management.

In this study, 2 patients died from hypovolemic shock. IUFD was found in 21 cases, 10 babies were admitted into the NICU, and neonatal death was found in 4 babies. Perinatal death was high in our case, a similar result was in a few other developing countries as well.[22, 23, 24]. The main cause of maternal mortality was failure to diagnose the condition at the first referral center and arrival at the tertiary center in an unstable condition. Perinatal

mortality is due to hypoxia caused by immediate placental separation.

Conclusion

Uterine rupture is a dire emergency with a high incidence of maternal and fetal morbidity and mortality. Lack of proper antenatal care, injudicious use of oxytocin, lack of awareness of hospital delivery in patients with a history of cesarean section, and delay of management are the main causes of ruptured uterus in this research. Early diagnosis, well-equipped Intensive Care Unit (ICU), good blood bank service, and Neonatal Intensive Care Unit (NICU) can help reduce maternal and perinatal mortality secondary to uterine rupture. In addition, hospital delivery, judicious administration of oxytocin, early resuscitation of patients, and timely management are essential to decrease maternal death secondary to uterine rupture.

References

1. Dutta DC. D.C Duttas Textbook of Obstetrics.9th edition. New Central Book Agency Ltd. 2018; 400
2. Gerard G Nahum. Uterine rupture in pregnancy. Medscape Obstetrics and Gynaecology. Available at: http://reference.medscape.com/article/275854 overview. Accessed on 30th January 2020.
3. Hofmeyr Gj, Say L, Gulmezoglu AM. WHO systemic review of maternal mortality and morbidity: the prevalence of uterine rupture. BJOG.2005;112(9); 1221-1228
4. Fitzpatrica KE, Kurinczuk JJ.Alflrevic Z, Spark P, Brocklehurst P, Knight M. Uterine Rupture by intended mode of delivery in the UK: A National case –control study. PLOS Med 2012:9(3): e 1001-184.
5. Omole-Ohonsi A, Attah R. Risk factors for Ruptured uterus in a Developing country. Gynaecol Obstetric. 2011: 1:102
6. Igwegbe AO, Eleje GU,Udegbunum OI. Risk factors and perinatal outcome of uterine rupture in a low resource setting. Niger MedJj.2013:54:415-419
7. Delafield R, Pirkle CM, Dumont A. Predictors of uterine rupture in a large sample of women in Senegal and Mali: cross-sectional analysis of QUARITE trial data. BMC Pregnancy Childbirth. 2018:18:432
8. Astatikie G, Limenih MA, Kebede M. Maternal and fetal outcomes of uterine rupture and factors associated with maternal death secondary to uterine rupture. BMC Pregnancy Childbirth. 2017, April 12:17(1):117
9. Zeb L. Bibi S. Trends in frequency and causes of uterine rupture in a tertiary care center between year 2001 and 2011. J Postgrad Med Inst.2013;27(3): 317-321
10. Rizwan N, Abbasi RM, Uddin SF.Uterine rupture,frequency of cases and fetomaternal outcome. J Pak Med Assoc.2011;61(4):322
11. Khanum Z, Lodhis K-Emergency Obstetric Hysterectomy: a lifesaving procedure. Ann King Edward Medical College2004;10: 292-294
12. Revicky V, Muralidhar A, Mukhopadhyay S, Mahmood T. A case series of uterine rupture: Lessons to be learned for future Clinical Practice. J obstet Gynaecol India. 2012 Dec; 62(6); 665-673.
13. Khooharo Y, Yousfani JZ, Malik SH, Amber A, Majeed N, Malik NH, et al. Incidence and management of rupture uterus in obstructed labour, J Ayub Med Coll. Abbottabad, 2013 Jan- Jun;25(1-2):149-151
14. Kidantou HL, Mwampagatwa I, Van Roosmalen J. uterine rupture: a retrospective analysis of causes, complication and outcomes of Muhimbili National Hospital in Dar es Salam. Tanzania. Tanzan J Health Res. 2012July;14(3):220-225.
15. Berhe Y,Gidey H,Wall LL. Uterine rupture in Mekelle, northern Ethiopia, between 2009 and 2013, Int J Gynaecol Obstet.2015 August;130(2):153-156
16. Zhang Y, Yan J, Han Q,Yang T , Cai L, FuY,et al. Emergency obstetric hysterectomy for life threatening postpartum hemorrhage: A 12- year review. Medicine(Baltimore). 2017bNov; 96(45): e8443.
17. Malik HS. Frequency, predisposing factors and fetomaternal outcome in uterine rupture. J Coll Physician Surg Pak.2006; 16:472-475
18. Mahbuba, IP Alam. Uerine Rupture-Experience of 30 Cases at Faridpur Medical College Hospital. Faridpur Medical Coll .J. 2012; 7(2):79-81

19. Raval BM, Patil AG, Shah PD et al. Uterine rupture: a preventable obstetric catastrophe. Int J Reprod Contracept obstet Gynaecol.2020 Jan;9(1):151-155.

20. Kahamsim ML, Nyango DD, Oyebode TA, Egbodo CO et al. Predisposing factors and outcome of uterine ruture in Jos ,North-central Nigeria. Int J Res Med Sci. 2020 Sep;8(9): 3198-3202

21. Qazi Q,Akhter Z, Khan K, Khan AH. Woman Health ; Uterus Rupture, Its complication and management in Teaching Hospital Bannu, Pakistan.Maedica , A journal of Clinical Medicine 2012,7(1)49-53

22. Sahu L.A 10 years analysis of Uterine rupture at aTeaching institution. J obstet Gynaecol India. 2006; 56(6): 502-506

23. Nausheba R. Razia MA, Syed FU. Uterine rupture, frequency of cases and fetomaternal outcome. J Park Med Assoc.2011;61(4):322-324

24. Dattijo LM,Umar NI, Yussuf BM. Ruptured uterus in Azare, North Eastern Nigeria. Jos J Med. 2011;5(2): 17-20

Original Article

Morphometry of Dry Ossified Left Human Clavicle

Nazia Binte Islam[1], Segupta Kishwara[2], Sharmin Rahman[3], Afsara Tasnim[4], Fatema Ershad[5]

Abstract

Background: The clavicle is a modified long bone placed horizontally and subcutaneously at the root of the neck. This bone shows high variability in its shape and size; more frequently than other long bones of the human skeleton. It has its peculiarities with ossification; it is the first bone to start ossification. It is one of the bones of the shoulder girdle in humans and in those mammals, who use their hands for pretensions. It plays an important role in sex determination in humans; length, midclavicular circumference, and rhomboid fossa are principal indicators for sex determination.

Objective: To provide osteometric data on clavicles in the Bangladeshi population.

Materials and Methods: The present study was a cross-sectional analytical type of study, carried out in the Department of Anatomy, Dhaka Medical College, Dhaka, Bangladesh from January 2022 to December 2022. A total of 120 dry ossified left human clavicles were collected from Dhaka Medical College, Dhaka. Most of the variables were measured with the help of a digital Venire caliper.

Results: Out of 120 clavicles 70 were males and 50 were females. The straight length of the clavicle, mid-shaft circumferences, and straight length of the rhomboid fossa were greater in males than females.

Conclusion: The clavicle is crucial for determining sex, length, circumference, and rhomboid fossa size which differed significantly between males and females, with males having larger measurements.

Keywords: Length of the clavicle, Midclavicular circumference, straight length of Rhomboid fossa

Introduction

The clavicle is named after the Latin clavicula ("little key") because, during abduction of the shoulder, the bone rotates along its axis like a key[1].

The clavicle shows high variability in its shape and size; more frequently than other long bones of the human skeleton. Clinicians and forensic anthropologists have widely examined the anatomical variability of this important bone of the thoracic skeleton[2].

The clavicle is a modified long bone placed horizontally and subcutaneously at the root of the neck [3]. The clavicle is the only bony connection between the trunk and the upper limb. It is palpable along its entire length and has a slight S-shaped contour, with the forward-facing convex part medially and the forward-facing concave part laterally[4]. The clavicle is one of the bones of the shoulder girdle in humans and in those mammals who use their hands for prehension. Morphologically it is a distinct bone. It is the first bone to start ossification in the 5th or 6th week of intrauterine life and the last bone to complete ossification usually after 21 years[5]. It begins its ossification in the membrane with two primary centers [6]. The clavicle transmits the weight of the upper limb to the axial skeleton [3]. It has a cylindrical shaft and two ends that are sternal and acromial end. The shaft is divided into lateral one-third and medial two-thirds[7].

The superior surface is subcutaneous and the inferior surface bears an elevation called the conoid tubercle and a ridge called the trapezoid ridge[8]. The lateral third of the inferior surface has the subclavian groove[9].

A clavicle fracture is more common in children and adults. Fracture clavicle is more common and occurs more frequently at the junction of the medial two-thirds and lateral one-third. In case of neurovascular injury or significant fracture displacement, surgical intervention may be required [3].

1. Nazia Binte Islam, Assistant Professor, Department of Anatomy, Asgar Ali Medical College, Dhaka.
2. Segupta Kishwara, Professor and Head, Department of Anatomy, Dhaka Medical College, Dhaka.
3. Sharmin Rahman, Associate Professor, Dept. of Anatomy, Ad-din Women's Medical College, Dhaka
4. Afsara Tasnim, Assistant Professor, Dept. of Community Medicine, Ad-din Women's Medical College, Dhaka.
5. Fatema Ershad, Assistant Professor, Dept. of Pharmacology, Ad-din Women's Medical College, Dhaka.

Correspondence: Nazia Binte Islam, Assistant Professor, Department of Anatomy, Asgar Ali Medical College, Dhaka. Phone Number: 01717566197, E-mail Address: tisha27awmc@gmail.com

Received Date : 23 March, 2024

Accepted Date : 10 April, 2024

Materials and Methods

The study was conducted in the Department of Anatomy, Dhaka Medical College, Dhaka, Bangladesh. The samples were collected from the Department of Anatomy, Dhaka Medical College and the students of Dhaka Medical College.

Inclusion criteria:

- Adult left human clavicles that were fully dried and ossified.
- Clavicles that were intact and free from any signs of damage or deformity.

Exclusion criteria:

- Clavicles showing any signs of fractures, abnormalities, or pathological conditions.
- Incomplete or poorly preserved specimens.

Most of the variables were measured with the help of a digital Vernier caliper. The maximum straight length of each Clavicle was measured from the sternal end to the acromial end. Each bone was taken and held in a horizontal position and length was measured by using a Digital Vernier Caliper and recorded in millimeters. Mid-shaft circumference of the clavicle was taken at the midpoint of the straight length of the clavicle. Then a point was marked on the superior surface of the clavicle. Perpendicularly the metallic soft wire was used to encircle the marked point around the shaft. Then the circumference was measured. The wire was straightened and measured by a digital Vernier caliper and recorded in millimeters. The straight length of the rhomboid fossa was measured by using a digital Vernier caliper and the reading was recorded in millimeters.

Results

The present study was conducted on 120 dry ossified left human clavicles. Out of 120 (one hundred and twenty) dry clavicles, 70 (seventy) were male and 50 (fifty) were female. After the collection of data, statistical analysis was done by the software, SPSS (Statistical Package for Social Sciences) for Windows, Version 25.0. The results and observations of this study are described with suitable tables and graphs.

Length of left clavicle

In the male, the mean ± SD length of the clavicle was 136.83 ± 6.79 mm and ranged from 121.42 mm to 154 mm. In females, the mean ± SD length of the clavicle was 128.36 ± 4.43 and ranged from 118.48 mm to 138.34 mm. The mean length of the clavicle was found to be greater in males than in females and the difference was statistically significant ($p<0.001$)

Midclavicular circumference of left clavicle

The mean ± SD midclavicular circumference of the clavicle was 36.80 ± 1.60 mm in males and 34.35 ± 1.89 mm in females respectively. The range of midclavicular circumference of the clavicle was 34 mm to 40.12 mm in males and 31.11 mm to 37.40 mm in females respectively. A significant difference ($p<0.001$) was observed in the midclavicular circumference of the clavicle between both sexes and the difference was greater in males than in females.

Table 1: Length, midclavicular circumference of left clavicle in male and female (N = 120)

Variables	Male n=70 Mean ± SD	Female n=50 Mean ± SD	p-value
Length of clavicle (mm)	136.83 ± 6.79 (121.42-154)	128.36 ± 4.43 (118.48 - 138.34)	0.000*
Midclavicular circumference (mm)	36.80 ± 1.60 (34-40.12)	34.35 ± 1.89 (31.11-37.40)	0.000*

Independent Sample t Test

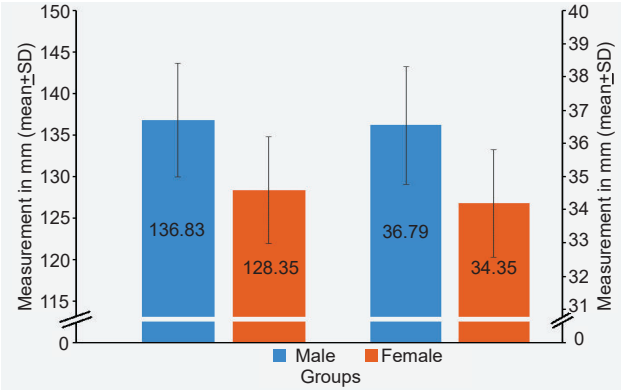

Figure- 1: Length and Midclavicular circumference of the left clavicle in male and female

Straight length of Rhomboid fossa

The mean ± SD straight length of the Rhomboid fossa was 21.77 ± 5.29 mm in males and 19.59 ± 5.32 mm in females respectively. The range of straight length of the Rhomboid fossa is 13.43- 30.79 mm in males and 10.70 - 29.97 mm in females respectively. A significant difference was observed between both sexes and the difference was greater in males than in females.

Table 2: Length of Rhomboid fossa of left clavicle in male and female (N=120)

Variables in mm	Male n=70 Mean ± SD	Female n=50 Mean ± SD	p value
Length of Rhomboid fossa	21.77 ± 5.29 (13.43- 30.79)	19.59 ± 5.32 (10.70-29.97)	0.029*

Independent Sample t Test

Discussion

Length of the left clavicle

The finding of this study showed that clavicles had an average of 136.83 mm in length in males and 128.36 mm in length in females. In males, the maximum length was 154 mm, and in females, it was 118.48 mm. In the present study, the mean length of the left clavicle was significantly higher in males than in females ($p<0.001$). Similar finding was found for the population of India, Thailand, and South Africa [2,10,11]. In male clavicles, the difference in length is more marked rather than the females'. In this study, as sex could not be known during the collection of samples therefore it was not possible to determine the sex based on the length of the clavicle.

Midclavicular circumference of left clavicle

For the determination of the sex of the clavicle, among various parameters, midclavicular circumference is the most reliable indicator. From this study, I found that the average range of midclavicular circumference of the clavicle was 34 mm to 40.12 mm in males and 31.11 mm to 37.40 mm in females respectively. The mean midclavicular circumference of the left clavicle was significantly higher in males than in females. The same finding was found for the population of Thailand and India at $p<0.001$ level [2,10]. Another study also showed a similar sexual difference for the South African population[11].

Straight length of Rhomboid fossa

In the present study, the mean straight length and breadth of the rhomboid fossa are higher in males than in females and this was statistically significant. Compared to the present study showed similarities for the Indian population[12]. Many factors associated with sex like genetic factors, physical activity patterns, hormonal levels, and age are likely to cause different morphological changes in the rhomboid area. Determination of the sex of the clavicle and the straight length of the rhomboid fossa as a single parameter cannot establish the sex of each clavicle.

Conclusion

This study provides valuable insights into morphometric features of the dry ossified left human clavicle, which can be useful in clinical and forensic applications. These findings contribute to a better understanding of clavicular anatomy and its variations, aiding in both anatomical education and medical practice.

References

1. Sonawane K, Dixit H, Balavenkatasubramanian J, Gurumoorthi P, Balavenkatasubramanian J. Uncovering secrets of the beauty bone: a comprehensive review of anatomy and regional anesthesia techniques of clavicle surgeries. Open Journal of Orthopedics and Rheumatology. 2021 Apr 10;6(1):019-029.
2. Sehrawat JS, Pathak RK. Variability in Anatomical Features of Human Clavicle: Its Forensic Anthropological and Clinical Significance. Translational Research in Anatomy. 2016 Jun 1; 3:5-14.
3. Sinha P, Mishra SR, Kumar P, Singh S, Sushobhana K, Passey J, Singh R. Morphometric & Topographic Study of Nutrient Foramen in Human Clavicle In India. International Journal of Biological Medical Research. 2015;6(3):5118-5121.
4. Ray B, Saxena A, Nayak S, Pugazhendi B, Gayathri BM. Morphometry and Anatomical Variations of Flexor Digitorum Superficialis. Journal of Morphological Sciences. 2015 Jan; 32(01):008-011.
5. Sen J, Kanchan T, Ghosh A, Mondal N, Krishan K. Estimation of Sex From Index And Ring Finger Lengths In An Indigenous Population Of Eastern India. Journal of Clinical Diagnosis Research. 2015;9 (11): HC01-05.
6. Bilodi AK, Sinha BN, Kumaran S. Some Observation on Human Clavicle. Journal of Nepal Medical Association. 2002; 41:441-445.
7. Bagal G, Takale S. Sex Determination from The Clavicle. Journal of Medical Science Clinical Research. 2016; 4(6):11162-11165.
8. Summerhill VI, Moschetta D, Orekhov AN, Poggio P, Myasoedova VA. Sex-Specific Features of Calcific Aortic Valve Disease. International Journal of Molecular Sciences. 2020 Aug 6;21(16):5620.
9. Sinha SK, Dhan MR, Hayat SM, Kumar V. Morphometric Study in The Variations of Number,

Position and Direction of Nutrient Foramen in The Clavicle. International Journal of Anatomy Research. 2020;8(2.1):7454.

10. Kaewma, A.; Sampannang, A; Tuamsuk, P. and Iamsaard., Morphometry of Isan-Thai Clavicles as a Guide for Sex Determination. International Journal of Morphology, 2017; 35(1), pp.172-177.
11. Ishwarkumar S, Pillay P, Haffajee MR, Rennie C. Sex Determination Using Morphometric and Morphological Dimensions of The Clavicle Within the Kwazulu-Natal Population. International Journal of Morphology. 2016; 34(1):244-251
12. Tragandia, M.M. and Gupta, B.D. Sex Determination Based on Morphological Study of Clavicular Rhomboid Fossa in Saurashtra Region, Gujrat., Journal of Indian Academic Forensic Medicine, 2020; 42(2), 93-98.

Original Article

Knowledge, Attitude, and Practices Towards Existing Family Planning Practices in A Selected Upazila of Bangladesh

Faisal Ahmed[1], Jannat Ara[2], Fahmida Haque Bhuiyan[3]

Abstract

Introduction: Various factors contribute to knowledge, attitudes, and practices toward family planning practices in rural Bangladesh. Unfortunately, studies on the knowledge, attitude, and practices of Bangladeshi nationals in a rural setting are not sufficient.

Objective: This study aimed to find out people's knowledge, attitudes, and practices for getting family planning services in rural areas of Bangladesh.

Materials and methods: A qualitative descriptive study was employed to follow a semi-structured questionnaire format. A total of 36 participants were interviewed from an upazila. Relevant works of literature were reviewed to enhance our understanding of the issue in question. The questionnaires were pretested before finalization.

Results: All of the 36 participants were concerned regarding family planning but 16 (44.44%) of them were currently practicing, and 8 (2.22%) of them never used any of them in their conjugal life. Of all users, the Pill was the most favorite method 24 (82.76%). Condom 2 (6.9%), Injectable 1 (3.45%), Vasectomy 1 (3.45%), and Withdrawal 1 (3.45%) methods were common in the community. Though interested in using the methods, 32 (88.89%) participants didn't know the benefits and side effects of using them. The majority of 30 (83.33%) of them got information regarding family planning from family members, and the rest of them were from media 6 (16.67%), health workers 5 (13.89%), and neighbors 8 (22.22%). Of those who used, 23 (85.18%) of them collected family planning materials from local pharmacies and the rest of them got them from hospitals 6 (22.22%) or, other field workers 3 (11.11%). Though their conjugal life varied but majority of them 23 (63.88%) had 1 or, 2 children. The majority of the participants 12 (33.33%) were between 14-28 years of age group, 34 (94.44%) of them were housewives and most of them had completed secondary level 25 (69.44%).

Conclusion: We can have regular meetings in the community with users and service providers to make our knowledge and practices better. People of all ages, genders, and different incomes need to be involved to support services that are based on solid evidence. We need to teach and talk a lot about ways to plan your family and the services available for it.

Keywords: Conjugal life, Pill, Condom, Vasectomy method, Injectable method, Withdrawal method

Introduction

Family planning intends to decide when to have kids and use methods like birth control to make that decision. It also includes teaching about sex, preventing and treating infections, counseling before getting pregnant, and managing infertility. According to WHO, family planning helps people to have the number of children they want and space their births how they want [14]. It happens by using birth control and treating infertility when one can not have a baby. Women's ability to control when they get pregnant and how many children, they have affected their health and how their pregnancies turn out. Planning when to have children is very important for keeping people healthy, especially for women and children [1]. Family planning is very important for people to have control over when they have children. It helps them to stay healthy and make choices about their lives. It also helps communities and the country to grow and do better economically[2]. In Bangladesh, where there are a lot of people and not enough resources, it is important to know what people think about family planning, even though the government tries to encourage family planning, people still do not know enough about it. This research will help the government make effective policies and provide better healthcare[3]. The chosen area in Bangladesh, an Upazila otherwise called Sub-district, is where the research was conducted. The research had three main goals. Firstly, to find out

1. Dr. Faisal Ahmed, Medical Officer, Civil Surgeon Office, Mymensingh
2. Dr. Jannat Ara, Assistant Surgeon, Dhulasar Union Health Center, Kalapara, Patuakhali
3. Fahmida Haque Bhuiyan, Assistant Surgeon, Upazila Health Complex, Cumilla Sadar Dakshin. Cumilla

Correspondence: Dr. Faisal Ahmed, Medical Officer, Civil Surgeon Office, Phone No- +8801715458709; Email- tusher151@gmail.com

Received Date : 6 July, 2024
Accepted Date : 23 July, 2024

how much people know about different ways to plan when to have a family such as using birth control, getting sterilized, or using natural methods. To find out what people don't know so we can help them make better decisions. Secondly, the goal was to determine people's thoughts about family planning in the chosen area. Thirdly, by learning about the beliefs and customs that affect how people feel about family planning, it can be found out what might stop them from using these services. Then plans to help more people use family planning services and feel comfortable with them. The research will help others understand family planning in Bangladesh and will be useful for people who make decisions about health care and communities. It will help people learn about their reproductive health to make good choices and help the community grow. This study aims to fill in this gap by focusing on a specific area, giving a small-scale view of the overall national situation. The research will focus on different factors and their effect on how much people know and what they think about family planning. It will also evaluate how well the family planning programs in the chosen area are working. The results of this study will help people who make decisions about family planning. This includes policymakers, doctors, and groups that are not part of the government. This will help make interventions fit the needs of different communities in Bangladesh, and make family planning programs work better. It will show us how important family planning is for public health and how it can impact policies and actions. The aim of study was to explore the understanding and perceptions of individuals in a specific Upazila (administrative region) of Bangladesh regarding the current family planning practices.

Materials and methods

The study was conducted at Upazila Health Complex, Cumilla Sadar Dakshin, Cumilla. The total sample size was 36. The study was conducted from 1st October to 29th November, 2023. The respondents were selected through purposive sampling. Thirty-six (36) individuals aged 18-49 years were interviewed. After introductory conversation and obtaining consent from participants, the relevant primary data were collected through a semi-structured questionnaire. It was validated before the final data collection. The respondents were selected based on their availability during the visit. After completion of the face-to-face interview, validation and consistency were achieved and then the data were compiled, analyzed by SPSS version 25, and presented in tables.

Inclusion criteria

1. Residency: Participants must be residents of the selected Upazila in Bangladesh. This is to ensure that the study captures the unique socio-cultural context of this specific region.
2. Age: Participants should be within the reproductive age group, typically defined as ages 14-49 for women. This is because family planning practices are most relevant to this demographic.
3. Marital Status: Participants should be married, as family planning practices are generally applicable to couples.
4. Consent: Participants must provide informed written consent to participate in the study. This is an ethical requirement for all research involving human subjects.
5. Language: Participants should be able to communicate effectively in Bengali, the official language of Bangladesh, to ensure accurate understanding and responses to the research questions.

Exclusion criteria

1. Individuals under the age of 18, as they are not legally able to consent to participate in research
2. Individuals who are unable to communicate effectively in the local language, as this would make it difficult to obtain informed consent and collect data.
3. Individuals who are mentally or physically impaired in a way that would prevent them from participating in the research.
4. Individuals who have a personal or professional relationship with any of the researchers, as this could introduce bias into the data.
5. Individuals who have participated in a similar study in the past, could increase the risk of fatigue and decrease the reliability of the data.
6. Individuals who are residents of another upazila, as the study is focused on a specific geographic area.

Results

Table 1 shows the distribution of sociodemographic characteristics of the respondents. the socio- demographic characteristics revealed that the majority of the participants, 20 (55.56%) were aged 18-28 with only 13 (8.34%) aged 40-49. Where 34 (94.44%) of the respondents identified as housewives, 25 (69.44%) respondents had completed secondary education, with 6 (16.66%) having only primary education and only 5

respondents having a higher secondary degree or above. Regarding monthly income, 18 (50%) respondents had earnings of less than 25,000 Taka, 51 (41.66%) earned between 25,000 and 50,000 Taka, and only 3 (8.34%) of them reported earning more than 50,000 Taka. We can see from the table 1 that the household conditions were evenly distributed, for Kancha and Pakka with 16 households each, and the rest 4 participants addressed about semi pakka houses.

Table 1: Socio-demographic characteristics of the respondents

Sociodemographic characteristics	Number of respondents (f)	Percentage
Age group (Years)		
18- 28	20	55.56
29-39	13	36.10
40-49	3	8.34
Occupation		
Housewife	34	94.44
Govt. Service	1	2.78
Non govt job	1	2.78
Educational Status		
Primary	6	16.66
Secondary	25	69.44
Higher secondary and above	5	13.88
Monthly income (Taka)		
Less than 25, 000	18	50
25, 000- 50,000	15	41.66
More than 50,000	3	8.34
Household condition		
Pakka	16	44.44
Semi pakka	4	11.12
Kancha	16	44.44
Total	36	100

Table 2 shows, that 12 (33.33%) of total respondents live a conjugal life that of 10 - 20 years, where only 7 (19.44%) have a conjugal life that is more than 20 years. On the other hand, the number of respondents with a conjugal life of 1 to 4 and 5 to 9 is almost equal with 8 (22.22%) and 9 (25.01%) respondents respectively. Nearly two-thirds that is 23 of the respondents have one to two children whereas only five respondents reported having more than 4 children.

Table 2: Duration of conjugal life, and number of children of respondents

Conjugal life and number of children	Number of respondents (f)	Percentage
Duration of conjugal life (Year)		
1 to 4	8	22.22
5 to 9	9	25.01
10 - 20	12	33.33
More than 20 years	7	19.44
Number of children		
Less than 3	23	63.88
3 to 4	11	30.54
More than 4	5	13.88
Total	36	100

Table 3 shows, that most of the respondents (30) learned about family planning methods from family members, and only 6 (16.67%) got the information from television or online sources which also indicates the lack of access to the digital media in that area. From the responses, we can see that 23 (85.18%) of the respondents collect family planning materials from the local pharmacy and 6 (22.22%) people get this from the family planning office. The concerning fact here is 32 (88.89%) of the respondents don't know how the methods work, their benefits as well as their risks.

Table 3: Knowledge about family planning (multiple responses recorded) (N=36)

Knowledge about family planning	Number of respondents (f)	Percentage %
Source of information		
Family member	30	83.33
Neighbor	8	22.22
Doctor	6	16.67
FWV and FWA	5	13.89
Television, online	6	16.67
Source of collection of family planning tools, (N=27)		
Local pharmacy	23	85.18
Family planning office	6	22.22
FWV and FWA	3	11.11
Knows how methods work, the benefits and risks of each method		
Yes	4	11.11
No	32	88.89

Table 4 shows, all 36 participants were concerned regarding family planning and 25 of them reported that to prevent unwanted pregnancy and uninterrupted coitus, family planning is important.

Table 4: Attitude toward family planning activities (N = 36)

Attitude toward family planning activities	Number of respondents (f)	Percentage
Concerned about family planning		
Yes	36	100
Important benefits of family planning (multiple responses recorded)		
Birth spacing	36	100
Prevent unwanted pregnancy	25	69.44
Uninterrupted coitus	25	69.44

Table 5 displays. OCP method is the most popular among the respondents 24 (82.76%) were using this method whereas condoms, injection, and methods had very less users. A very large number of respondents are currently practicing family planning or used family planning methods before. But there are also 8 of them who never used any family planning methods.

Table 5: Name and Rate of family planning practices among respondents (multiple responses recorded, (N = 36)

Denominators and Rate of Family Planning Practices	Number of respondents (f)	Percentage %
Method		
OCP	24	82.76
Condom	2	6.90
Injectable (DMP)	1	3.45
Vasectomy	1	3.45
Withdrawal	1	3.45
Family planning practices		
Respondents currently practicing	16	44.44
Respondents who previously used	12	33.33
Only the male partner uses the family planning method	3	8.33
Both male and female partner uses	1	2.78
Never used	8	22.22

Discussion

The age groups of the respondents were analyzed. More than half of the respondents (55.56%) belong to the 18-28 years age group which is similar to some studies while in others the majority goes to another group of participants [3-9]. In our study, 36.1% belong to the 29-39 years age group, and the rest (8.34%) belong to the 40-49 years age group. Here, it is found that most of the women (94.44%) are housewives which is similar to other research studies conducted among indigenous women in Dinajpur, Rohingya women living in refugee camps in Bangladesh, and married women living in slum areas of Dhaka[3,4,6]. Only 2.78 % are government service holders and 2.78% are non-government workers. In this study, more than half (69.44%) of respondents completed their secondary education which is contrary to other research conducted in various areas previously[3-8]. It clearly shows that women are progressing in education in Bangladesh which will benefit both themselves and our nation in family planning and other activities. Then, 16.66% of the participants completed primary education and 13.88% of the participants completed higher secondary education.

It also shows 50% of respondents' family income is less than 25, 000 TK and 8.33% of respondents' income is more than 50,000 TK. Though most of their income is less than 25000 taka per month, the average family income of the people of Bangladesh has increased over the years [3,4,8]. In our study, we found that pakka and kancha households hold the same percentage, 44.44%, and semi-pakka households are 11.11 % of respondents which contradicts previous research[9]. Our research shows people are living more in pakka houses than before which complements our finding of improved economic conditions.

We also found that many of the respondents live a duration of conjugal life that is 10 - 20 years which represents 33.33% of total respondents, we found that 19.44% of respondents' conjugal life is more than 20 years. 25.01% of them live in 5 - 10 years of conjugal life and the rest live in 1 - 5 years of conjugal life. It also shows the number of children of the respondents. In our study, we found that more than half (63.88%) of respondents have one to two children, 30.54% have 3 – 4 children and 13.88% of the respondents have more than 4 children. In the past, more women in Bangladesh got married at a younger age. The 1979 agreement adopted by the UN to stop all kinds of discrimination based on

gender "Elimination of All forms of Discrimination Against Women" (CEDAW) and the 1990 Africa charter regarding the "Rights and Welfare of the Child" recommends a minimum standard for children's rights and well-being [10,11]. The law provided that the competent court may, for a justifiable reason and upon request made by the interested party, authorize a girl to marry before she completes 18 years of age. Marriage for girls is allowed at the age of 18 according to the law. However, in some cases, a court may permit a girl to marry before she turns 18 if there is a good reason for it. The definition of childhood is stated in the 'Convention on the Rights of the Children' [13].

So, at the youngest age you can get married girls in Bangladesh can only get married when they reach 18 years old. It is against the law for people under 18 to do that. Women who get married at a young age tend to have less education and start having babies earlier. Less control over decisions in the household. As a result, women who get married at a young age become mothers at a young age too are more likely to get sicker and die at a higher rate compared to people who get married after they are teenagers.

Our study shows, that most of the respondents (83.33%) learned about family planning methods from family members which is similar to other relevant research that proves family members are easy to reach for help to know such sensitive and important stuff but the opposite happens in Rohingya population[2,4]. While 85.18% of the respondents collect family planning materials from the local pharmacy, most of the respondents (88.89%) don't know how the family planning methods work, their benefits as well as their risks.

This proves that all the participants are eager to use family planning methods, believing in its benefits but not knowing how they alter users' bodies as well as their harmfulness. People love to use them as they believe that it will help them to reach their optimum goal. Again, we have found that all the participants were concerned regarding family planning (100%) which is a good sign for Bangladesh and the rural community. They use the methods to prevent unwanted pregnancy (69.44%), uninterrupted coitus (69.44%), and birth spacing (100%) which depicts their life objectives and family planning goals[5,6].

Most (82.76%) of the respondents use OCP and the rest use condoms, injectables, vasectomy, and withdrawal methods as a means of family planning method which is just like other findings in various research setups in Bangladesh [3,4,5]. It also shows the family planning behaviors of the respondents. In our study, we found that 44.44% of the respondents currently use family planning methods, and 33.33% of the respondents previously used contraceptives in their conjugal life. Only 8.33% of the respondents' male partners use family planning practices.

Limitations of the Study

1. The study was conducted in a confined geographic area.
2. The sample size was small. Only 36 individual Participants were taken. So, the result may not represent the entire population of the Cumilla district and the whole country.
3. The study was conducted within a short period to fulfill the academic requirement, so it could not cover the whole area of the village.

Ethical clearance

Ethical clearance was given by the board of BARD, Cumilla, Bangladesh. No human or, animal was harmed during the procedures. Confidentiality was strictly maintained. Participants had the full right to participate and withdraw from the research at any time. They had the right to obtain information regarding the findings of the research. It was conducted following the ethical standards laid down in the 1964 Declaration of Helsinki revised in the year 2000.

Conflict of interest

None of the authors of the submitted manuscript have any actual or potential conflict of interest including any financial, personal, or other relationships with other people or organizations within two years of beginning the submitted work that could inappropriately influence, or be perceived to influence their work.

Conclusion

From the above study, we concluded that all the respondents are aware of family planning activities, and most of them practice family planning methods in their conjugal life but still, a significant number of respondents do not use family planning methods. The respondents have no idea how these methods work, their benefits, and their risk factors. So, it is necessary to increase knowledge regarding appliances of family planning methods at all levels of Government, Non-governmental organizations (NGOs), and public -private Partnership (PPP).

References

1. World Health Organization: WHO. Contraception. 2019.
2. Islam MS, Naieni KH, Ardebili HE, Foroushani AR, Mirani A. Role of socio-demographic and cultural factors in knowledge, attitude and practice of users about family planning methods and services, rendering from rural primary health care centre of Bangladesh. Pakistan Journal of Public Health. 2017; 7(1):5-10.
3. Majumder UK, Khan MS. Knowledge of family planning and contraceptive use among indigenous women in Dinajpur, Bangladesh: a cross-sectional study. International Journal of Community Medicine and Public Health. 2021 Jan;8(1):75.
4. Azad MA, Zakaria M, Nachrin T, Das MC, Cheng F, Xu J. Family planning knowledge, attitude and practice among Rohingya women living in refugee camps in Bangladesh: a cross-sectional study. Reproductive Health. 2022;19.
5. Chowdhury SZ. Practices and Attitudes of Women Regarding Family Planning And Menstrual Regulation in The Sylhet Division of Bangladesh. Global Journal of Infectious Diseases and Clinical Research. 2020 May 21;6(1):014-28.
6. Huda FA, Chowdhuri S, Sarker BK, Islam N, Ahmed A. Prevalence of unintended pregnancy and needs for family planning among married adolescent girls living in urban slums of Dhaka, Bangladesh. 2014
7. Hossain S, Sripad P, Zieman B, Roy S, Kennedy S, Hossain I, Bellows B. Measuring quality of care at the community level using the contraceptive method information index plus and client reported experience metrics in Bangladesh. Journal of Global Health. 2021;11.
8. Alam MA, Chamroonsawasdi K, Chansatitporn N, Munsawaengsub C, Islam MS. Regional variations of fertility control behavior among rural reproductive women in Bangladesh: A hierarchical analysis. Behavioral Sciences. 2018 Jul 31;8(8):68.
9. MSA MA, Chowdhury S, Rezaul KM, Mahmudul H. Unmet needs of family planning and practice of family planning in a selected urban to rural migrated population of Dhaka city. 20
10. Women UN. Convention on the elimination of all forms of discrimination against women. diakses melalui: http://www. un. org/womenwatch/ daw/ cedaw/text/econvention. htm, pada. 1979 Dec;12.
11. Assembly UG. Convention on the Rights of the Child: Adopted and opened for signature, ratification and accession by General Assembly Resolution 44/25 of 20 November 1989. Retrieved from Office of the United Nations High Commissioner for Human Rights website: http://www. ohchr. org/en/ professionalinterest/pages/crc. aspx. 1989.
12. Butler AS, Clayton EW. Overview of family planning in the United States. InA Review of the HHS Family Planning Program: Mission, Management, and Measurement of Results 2009. National Academies Press (US).

Original Article

Evaluation of Hospital Outcomes Among Very Low Birth Weight Babies in a Community-Level Medical College Hospital

Md. Imtiaz Pervez[1], Ridwana Rahman[2], Masuma Khan[3], Zannatul Ferdous Sonia[4], A.S.M. Nawshad Uddin Ahmed[5]

Abstract

Introduction: Very low birth weight (VLBW) babies are at increased risk from a wide range of hazards resulting from immaturity of structure and functions of many organs, which may cause death or permanent damage.

Objective: The objective of this study was to evaluate immediate outcomes in VLBW babies.

Materials and Methods: This hospital-based prospective cohort study was conducted in the Department of Paediatrics, Kumudini Women's Medical College and Hospital, Mirzapur, Tangail from August 2008 to July 2009. At enrollment VLBW babies (birth weight <1500 grams) were assessed for gestational age and weight. Patients were followed up daily till discharge or death. The outcome in terms of survival till discharge was recorded. Informed verbal consent from the caregiver was taken before enrolment.

Results: A total of 60 VLBW neonates were enrolled in the study. Eight (13.3%) neonates had weights below 1000 grams and 52 (86.7%) had 1000-1499 grams. Five (8.3%) neonates had gestational age ≤28 weeks, 44 (73.3%) were 29-32 weeks, and 11(18.3%) were 33-36 weeks. Maternal age, place, and mode of delivery were significant contributory factors. In the present study, 35(59%) of VLBW babies expired; 100% of babies died below 1000 grams. Neonatal mortality showed an inverse relationship with birth weight and gestational age.

Conclusion: Proper antenatal care should be encouraged throughout the country to prevent the neonatal mortality associated with VLBW infants. Management of labor is important and facilities for the management of high-risk pregnancy should be made available widely. Immediate management of newborns after birth can prevent the worst hospital outcomes in our country.

Keywords: Very Low Birth Weight, Hospital Outcomes, Neonatal mortality

Introduction

Very low birth weight (VLBW) infants are at increased risk of morbidity and mortality, mainly due to infections and complications of prematurity. Bangladesh has achieved substantial health advances in recent decades, marked by significant reductions in maternal and child mortality rates, increased life expectancy, and improved immunization coverage[1]. Like any other part of the developing world, Bangladesh has also substantially reduced under-five and infant mortality[2]. Major declines in infant mortality, however, have occurred in the post-neonatal period, i.e., after the first 28 days of life[3]. The decrease in neonatal mortality (52 per 1000 live births in 1990 to 28 per 1000 live births in 2014) is slower than in under-five children (133 per 1000 live births in 1990 to 46 per 1000 live births in 2014) over the last 21 years[4].

The annual infant mortality rate was reduced globally by 21.3% between 2000 to 2015[4]. Over the last few decades, Bangladesh experienced an immense reduction in child mortality[2]. However, the decrease in infant mortality (87 per 1000 live births in 1990 to 38 per 1000 live births in 2014) is slower than in under-five children (133 per 1000 live births in 1990 to 46 per 1000 live births in 2014) over the last 21 years[3]. More importantly, the neonatal mortality rate also has declined over time (52 per 1000 live births in 1990 to 28 per 1000 live births in 2014) which has a significant role in infant death[4].

1. Dr. Md. Imtiaz Pervez, FCPS, Assistant Professor of Paediatrics, Ad-din Women's Medical, College
2. Dr. Ridwana Rahman, M. Phil, Assistant Professor of Physiology, Ad-din Women's Medical College
3. Dr. Masuma Khan, FCPS, Associate Professor of Pediatrics, Ad-din Women's Medical College
4. Dr. Zannatul Ferdous Sonia, MD, Assistant Professor of Paediatrics, Ad-din Women's Medical College
5. Dr. A.S.M. Nawshad Uddin Ahmed, FCPS, Professor of Paediatrics, Bangladesh Shishu Hospital & Institute

Correspondence: Dr. Md. Imtiaz Pervez, FCPS, Assistant Professor, Department of Paediatrics, Ad-din Women's Medical College Hospital, Dhaka. Cell: 01912-047852, E-mail: imtiazpervez@gmail.com

Received Date : 28 July, 2024

Accepted Date : 13 August, 2024

In Bangladesh neonatal mortality accounts for almost two-thirds of infant deaths and about half of deaths among children aged under 5 years. Reducing neonatal mortality in Bangladesh will be necessary for the achievement of the targets for child mortality reduction under the United Nations Sustainable Development Goal (SDG) targets of reducing neonatal mortality (NM) and under-five mortality (U5M) rates to 12 and 25 deaths per 1,000 live births respectively by 2030[5].

According to the World Health Organization (WHO), preterm birth accounts for 30% of global neonatal deaths, sepsis or pneumonia for 27%, birth asphyxia for 23%, congenital abnormality for 6%, neonatal tetanus for 4%, diarrhea for 3%, and other causes for 7% of all neonatal deaths[6,7]. Preterm births are often associated with very low birth weight (birth weight of less than 1500 grams) and are an important determinant of neonatal mortality and morbidity [8,9]. Its prevalence is directly correlated with the developmental state of a country, and it is associated with poverty. Bangladesh is a developing country and an estimated 20% of babies are born prematurely and 30% have low birth weight (LBW)[10].

So, the objective of this study was to evaluate hospital outcomes in very low birth weight (VLBW) babies and implement this knowledge for the prevention and better management of preterm VLBW babies.

Materials and Methods

This was a prospective cohort study conducted in the Department of Pediatrics at Kumudini Women's Medical College and Hospital, Mirzapur, Tangail from August 2008 to July 2009. All the preterm (<37 weeks gestational age) low birth weight (<1500 grams) neonates (0-28 days) admitted in the Department of Pediatrics within 72 hours of birth were screened for enrolment. Patients with small gestational age (SGA), congenital cardiac or other life-threatening anomalies, or those who required surgical intervention were excluded from the study. Babies who fulfilled the inclusion criteria and had no exclusion criteria and parents/caregivers provided informed consent were enrolled in the study. At enrolment detailed history was taken during the immediate postnatal period for each subject by interviewing the parents a thorough clinical examination was conducted and findings were recorded in a structured questionnaire. Maternal information included age, parity, previous preterm deliveries, history of hypertension, UTI, eclampsia, premature rupture of membrane, and mode and place of delivery.

Newborn history included the history of perinatal asphyxia, convulsion, and other details about presenting complaints. Weight was recorded in grams by digital weighing scale and gestational age was determined based on maternal dates (time from the first day of the last menstrual period) and further confirmed by Ballard scoring system[11]. Routine and relevant laboratory investigations, as necessary, were done and patients was managed as per hospital protocol. Patients were followed up daily and findings were also recorded. Finally, the outcome of these babies was recorded as improved and discharged, discharged on risk bond (DORB), or death.

Results

A total of 60 VLBW neonates were included in this study. Out of 60 babies, 32 (53.3%) were males and 28 (46.6%) were females; male to a female ratio of 1.14:1. Among the enrolled neonates, 8 (13.3%) had weights below 1000 grams, and 52 (86.7%) babies from 1000-1499 grams. The gestational age of 5 (8.3%) neonates was 28 weeks or below, 44 (73.3%) were 29-32 weeks, and 11 (18.3%) were <33 weeks.

In this study, 34 (56.7%) babies were born to mothers below 25 years of age, 19 (31.7%) were born to mothers between 26-30 years, and 7 (11.7%) were born to mothers between 30 to 35 years of age. Out of 60 VLBW babies 25 (41.7%) were born to primipara mothers, 20 (33.3%) to mothers with second gravida, 9 (15.0%) were of 3rd gravida, 4 (6.7%) with 4th gravida, and 2 (3.3%) born to mothers with 5th gravida or more.

Table 1: Sociodemographic Characteristics of Participants (n=60)

Baseline characteristics		Total Study Population n=60	
		Number (N)	Frequency %
Gender of baby			
	Female	28	46.6%
	Male	32	53.3%
Birth weight of babies			
	Below 1000gm	8	13.3%
	1000-1499gm	52	86.7%
Gestational Age of babies			
	<28 weeks	5	8.3%
	29-32 weeks	44	73.3%
	<33 weeks	11	18.3%
Maternal age			
	<25 years	34	56.7%
	26-30 years	19	31.7%
	30 to 35 years	7	11.7%
Gravida of mother			
	1st	25	41.7%
	2nd	20	33.3%
	3rd	9	15.0%
	4th	4	6.7%
	5th	2	3.3%

Table 2: Outcome of VLBW babies by gestational age (n=60)

Gestational age	Discharged N (%)	Died N (%)	DORB N (%)
Upto 28 weeks	0(0)	04(80)	01(20)
29-32 weeks	11(25)	30(68.2)	03(6.8)
33-36 weeks	09(81.8)	01(9.1)	01(9.1)

Table 2 shows the outcome of 60 studied infants in different gestational age groups. Among 5 babies in gestational age group of 28 weeks and below, 4(80%) died and 1(20%) obtained DORB, but no survived. Out of 44 babies in 29-32 weeks of gestational age 11(25%) survived, 30 (68.2%) died, and 3(6.8%) obtained DORB. In 33-36 weeks of gestational age group among 11 babies, 9(81.8%) survived, 1(9.1%) died and 1(9.1%) obtained DORB.

Table 3: Mortality rate of VLBW babies by birth weight (n=60)

Weight in gm	Number of VLBW babies	Number of Death	Mortality percentage
Below 1000 gm	08	08	100 %
1000-1499 gm	52	27	51.9 %

Table 3 shows the outcome of 60 studied babies in different weight groups. In below 1000 gm birth weight, there were 8 infants. Out of 8 infants, all 8 (100%) died. In 1000-1499 gm birth weight there were 52 infants. Out of 52 infants, 27(51.9%) died.

Table 4: Outcome of VLBW babies by place of delivery (n=60)

Gestational age	Discharged N (%)	Died N (%)	DORB N (%)
Hospital/Clinic	16(34.8)	26(56.5)	04(8.7)
Home	04(28.6)	09(64.3)	01(7.1)

Table 4 showed that 46 babies were delivered in the hospital of which 16(34.8%) survived, 26(56.5%) died, and 2(10%) obtained DORB. 14 babies were delivered at home of which 20(33.3%) survived, 35(58.3%) died and obtained DORB 5(8.3%).

Table 5: Outcome of VLBW babies by mode of delivery (n=60)

Gestational age	Discharged N (%)	Died N (%)	DORB N (%)
NVD	12(27.9)	27(62.8)	04(9.3)
Cesarean section	08(47.1)	08(47.1)	01(5.9)

Table 5 shows that 43 babies were delivered by spontaneous vaginal delivery of which 12(27.9%) survived, 27(62.8%) died, 4(9.3%) obtained DORB. 17 babies were delivered by LUCS of which 8(47.1%) survived, 8(47.1%) died and obtained DORB 01(5.9%).

Table 6: Comorbidities of the enrolled cases (n=60)

Comorbidities	Number	Percentage
Perinatal asphyxia	31	51.7%
Infections	25	41.7%
Jaundice	22	36.7%
Cyanosis	18	30.0%
Apnoeic Spell	18	30.0%
Convulsion	2	3.3%
NEC	1	1.7%
Bleeding Manifestations	01	1.7%

Table 6 shows the distribution of comorbidities of the participants where 31 (51.7%) cases of Perinatal asphyxia were found present. The presence of infection was also nearly half (47.7%) which includes 25 children. Cyanosis and Apnoeic spells share the same proportion representing 30% of the cases. NEC and Bleeding Manifestations were found as the least occurred comorbidities in this study with one case each.

Discussion

Birth weight is one of the most indispensable predictors of poor health outcomes in neonates and infants as it is related to a wide range of complications. Both preterm and VLBW have long been identified as the most critical risk factor for neonatal mortality and morbidity. The maternal factors and obstetric history should be taken into consideration while studying the risk factors of VLBW babies. Common maternal risk factors are the gestational age of babies, parity, nutritional status, levels of education, socio-economic status, chronic diseases, smoking habits, and antenatal care[12]. The relationship between the risk factors and very low birth weight was evaluated in this study.

In the present study, 59% of VLBW babies expired, and 100% and 52% of babies died in the weight below 1000gm and range 1000 – 1499gm respectively. This conforms with other studies that increasing birth weight has a marked influence towards better survival of these babies [13, 14].

There is a slight preponderance of male babies over female babies in this study comprising 53% male and

47% female (Graph-1). This conforms with three other similar studies [13,15,16].

Considering gestational age, 80% and 62% of babies died in the gestational age up to 28 weeks and range 29 – 32 weeks respectively. Between 33 and 36 weeks of gestational age, only 9% expired. Neonatal mortality bears an inverse relationship with birth weight and gestational age. Neonatal mortality decreases with increasing gestational age and birth weight observed in this and also in other studies[13, 14].

In the present study incidence of VLBW was highest in primi mothers (42%) and declined when the number of parity increased. A similar finding was also seen in another study[14].

The age of the mother influences the birth weight of the newborn. In this study, 56.7% of VLBW babies' deliveries occurred in mothers below 25 years of age. This result is consistent with a similar study where delivery after 35 years of maternal age depicted a lower incidence of neonatal mortality[17,1819].

The place of delivery was found to influence the outcome in the VLBW baby study. More deaths were associated with home delivery than hospital delivery. The mode of delivery was also found to influence the outcome of the preterm study. More deaths were associated with vaginal than lower uterine cesarean section (LUCS) delivery. In two other similar studies, it is also found better outcomes of VLBW babies delivered by LUCS deliveries[20,21].

Discharge on risk bond (DORB) was 8%. Although it remains in an unfavorable hospital environment, the communication gap between doctors and the patient's relatives because of prolonged hospital stays and sometimes unavoidable home situations leads them to get discharged at their own risk.

Limitations

The current study had certain limitations being a hospital-based study. The limitations of the present study are mentioned. The number of patients included in the present study was less in comparison to other studies. Because the trial was short, it was difficult to remark on complications and mortality.

Conclusion

The study concludes that VLBW admissions as well as deaths are still high in our hospital. Although the overall standard of neonatal service has improved in Bangladesh, the outcome of preterm VLBW babies is still not satisfactory. Co-ordination between obstetric and neonatal services, improvement of nursing care, and further improvement of the VLBW care within the available resources are essential to prevent complications and death.

Recommendation

Coordination between obstetric and neonatal services, improvement of nursing care, and further improvement of the VLBW care within the available resources are essential to prevent complications and death.

References

1. Chowdhury AM, Bhuiya A, Chowdhury ME, Rasheed S, Hussain Z, Chen LC. The Bangladesh paradox: exceptional health achievement despite economic poverty. The Lancet. 2013 Nov 23;382(9906): 1734-1745.
2. Ahmed T, Mahfuz M, Ireen S, Ahmed AS, Rahman S, Islam MM, Alam N, Hossain MI, Rahman SM, Ali MM, Choudhury FP. Nutrition of children and women in Bangladesh: trends and directions for the future. Journal of health, population, and nutrition. 2012 Mar;30(1):1.
3. Costello AM. Perinatal health in developing countries. Transactions of the Royal Society of Tropical Medicine and Hygiene. 1993 Jan 1;87(1):1-2.
4. World Health Organization. Success factors for women's and children's health: Bangladesh. 2015
5. Chao F, You D, Pedersen J, Hug L, Alkema L. National and regional under-5 mortality rate by economic status for low-income and middle-income countries: a systematic assessment. The Lancet Global Health. 2018 May 1;6(5):e535-547.
6. Lawn JE, Cousens S, Zupan J. 4 million neonatal deaths: when? Where? Why?. The lancet. 2005 Mar 5;365(9462):891-900.
7. Bryce J, Boschi-Pinto C, Shibuya K, Black RE. WHO estimates of the causes of death in children. The lancet. 2005 Mar 26;365(9465):1147-1152.
8. Tripathy SK, Chatterjee K, Behera N. Mortality and morbidity of very low birth weight and extremely low birth weight babies in neonatal period. Int J Contemp Pediatr. 2019 Mar;6(2):645-649.
9. McIntire DD, Bloom SL, Casey BM, Leveno KJ. Birth weight in relation to morbidity and mortality among

newborn infants. New England journal of medicine. 1999 Apr 22;340(16):1234-1238.

10. Lives SN. State of the world's newborns: Nepal. Washington, DC: Save the Children. 2002 Jul.
11. Ballard JL, Khoury JC, Wedig KL, Wang L, Eilers-Walsman BL, Lipp R. New Ballard Score, expanded to include extremely premature infants. The Journal of pediatrics. 1991 Sep 1;119(3):417-423.
12. Kader M, Perera NK. Socio-economic and nutritional determinants of low birth weight in India. North American journal of medical sciences. 2014 Jul;6(7):302.
13. Tabib SM, Nahar N, Khan MR. Clinical profile of low birth weight babies. Bangladesh J. of child health. 1987;11(4):114-120.
14. Rao CS. Usefulness of CRP in Differentiating Infected From Uninfected Neonates Among Those At Risk of Infection (Doctoral dissertation, Rajiv Gandhi University of Health Sciences (India).
15. Ali M. M. Outcome of very low birth weight infants in a referral Hospital, Dissertation for FCPS- 1987.
16. Walther FJ, Ramaekers LH. Neonatal morbidity of SGA infants in relation to their nutritional status at birth. Acta Pædiatrica. 1982 May;71(3):437-440.
17. Agbozo F, Abubakari A, Der J, Jahn A. Prevalence of low birth weight, macrosomia and stillbirth and their relationship to associated maternal risk factors in Hohoe Municipality, Ghana. Midwifery. 2016 Sep 1;40:200-206.
18. Fosu MO, Munyakazi L, Nsowah-Nuamah NN. Low birth weight and associated maternal factors in Ghana. J Biol Agric Healthcare. 2013 Aug 28;3(7): 205-211.
19. Endalamaw A, Engeda EH, Ekubagewargies DT, Belay GM, Tefera MA. Low birth weight and its associated factors in Ethiopia: a systematic review and meta-analysis. Italian journal of pediatrics. 2018 Dec; 44:1-2.
20. Begum HA. Outcome of LBW infants. Bangladesh J Child Health 1996; 20: 42–46.
21. Paecock WG, Hirala T. Outcome of low-birth-weight infants. Am J Obstet Gynaecol 1981; 140: 165.

Case Report

A Lady with Unilateral Painful Orbital Swelling with Possible Euthyroid Graves Ophthalmopathy

Mohammad Moin Shahid[1]

Abstract

Background: Thyroid ophthalmopathy is one of the cardinal features of Graves' disease. But it can also be found in patients with euthyroid, even with hypothyroid status.

Case: A twenty-four years old unmarried, non-smoker lady came with complaints of right-sided proptosis for 4 months. The protrusion of her right eye was gradually increasing and there was continuous dull aching pain. There was no history of neck swelling, weakness, palpitation, excessive sweating, weight loss, or tremor. Investigations revealed that she was in euthyroid state but her antibody titer of thyroid stimulating hormone receptor antibody was found beyond the normal range. She was managed conservatively.

Conclusion: Euthyroid Graves' ophthalmopathy is usually a self-limiting condition. However, it can be vision-threatening if proper evaluation and early management are not done.

Keywords: Thyroid ophthalmopathy, Graves' disease, Euthyroid, Proptosis

Introduction

Ophthalmopathy is one of the cardinal features of Graves' disease (GD)[1]. It is a condition where thyroid auto-antibodies react against the thyroid gland, extraocular muscles, retro-orbital tissues like orbital fat, and lacrimal glands resulting in orbitopathy – lid lag, lid retraction, chemosis, exophthalmos, extra-ocular muscle palsy, and even blindness[2]. The interesting thing about thyroid-associated ophthalmopathy is that to develop this condition patient does not need to be in a hyperthyroid state - it can develop even in the hypothyroid and euthyroid state [2,3]. Its peak incidence is in the twenties and thirties, but it can occur at any age - although it is uncommon before puberty. It is more common in women than men with a ratio over 5:1[3,4].

Case report

A twenty-four-year-old unmarried, non-smoker lady reported to the outpatient department of Ophthalmology (GO) with a painful proptosis of the right eye for four months. Her protrusion of right eye was gradually increasing and there was a continuous localized dull aching pain in her right eye which aggravated with the movement of the eyeball but did not subside completely after taking rest and analgesics. She had no complaint regarding her left eye. Her previous personal and family history was negative for thyroid disorders. There was no preceding history of defective vision or blackouts transient loss of vision or defective color perception. There was no history of neck swelling, weakness, palpitation, excessive sweating, weight loss or tremor. She denied of taking antithyroid drugs, thyroid surgery or radio-iodine ablation of the thyroid gland.

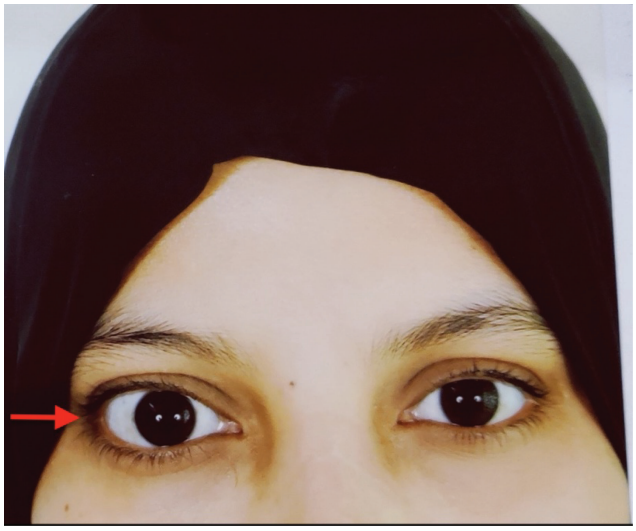

Figure 1: Right sided unilateral proptosis

Correspondence: Dr. Mohammad Moin Shahid, Associate Professor, Department of Endocrinology, Ad-din Women's Medical College. Phone: 01817028202, E-mail: dr.ms952@gmail.com

Received Date : 11 June, 2024

Accepted Date : 14 July, 2024

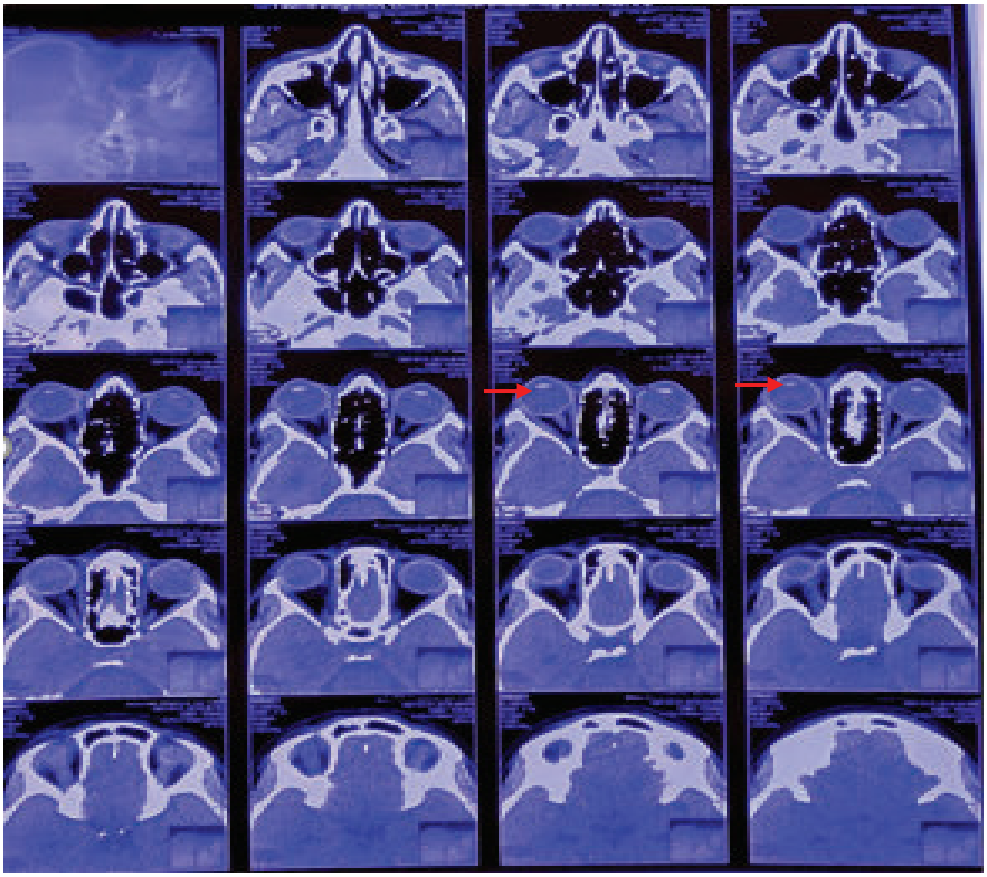

Figure 2: Axial view

Figure 3: Sagittal view

On ocular examination, her visual acuity was not compromised (6/6 in both eyes), Hirschberg reflex was central in both eyes with unilateral axial proptosis of the right eye of 3mm measured by Hertel Exophthalmometer (Figure 4). Dalrymple sign (lid retraction) (Figure 1), Von Graefes' sign (lid lag on downgaze), Mobius' sign (convergence deficiency), and Kochers' sign (staring look and frightening appearance of eyes) were positive in her right eye. Ocular motility was full in all cardinal positions of gazes and there were no complaints of diplopia. The patient received 5/7 in Clinical Activity Score (CAS) due to her orbital pain, gaze-evoked ocular pain, eyelid edema, conjunctival congestion, redness, and inflammation of the lacrimal caruncle in her right eye. But her left eye's CAS was 0/7. Her intraocular pressure was normal in both eyes. MRI of orbits revealed unilateral right-sided exophthalmos predominantly caused by the thickening of the medial rectus muscle (Figure 2,3).

She had no thyroid gland swelling and her pulse rate was 76 beats/minute. Her complete blood count (CBC) revealed no abnormality. Thyroid function tests showed

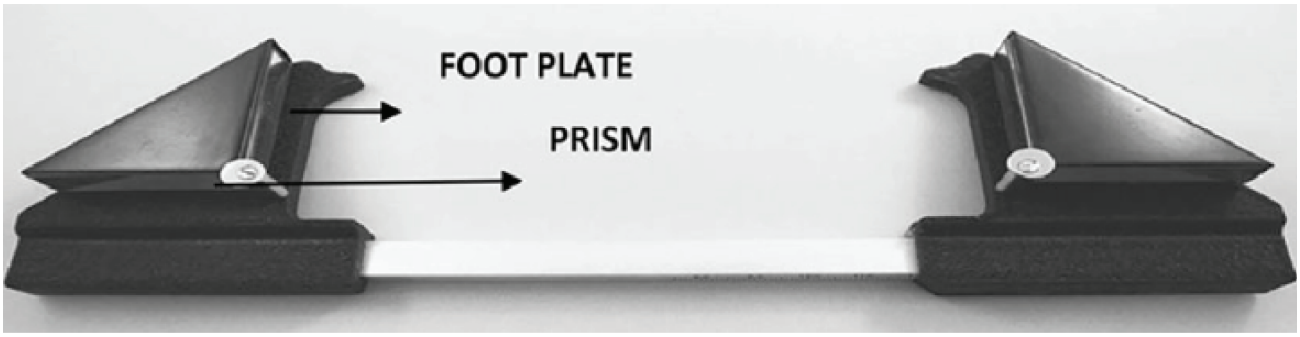

Figure 4: Hertel Exophthalmometer[11]

she was in euthyroid state (F.T3 – 3.22 pg/ml (reference value: 1.45 – 3.48 pg/ml), F.T4 – 0.963 ng/dl (reference value: 0.7 – 2 ng/dl), TSH – 1.08 µIU/ml (reference value: 0.350 – 5.50 µIU/ml). But her Thyroid stimulating hormone receptor antibody (TRab) level was in favor of GD (TRab – 2.33 Units/L; reference value: negative ≤1 Units/L, borderline > 1 – 1.5 Units/L, positive > 1.5 Units/L). Since TRab is highly specific for GD, she was diagnosed as a case of Euthyroid Graves' Ophthalmopathy.

She was prescribed lubricants carboxy-methylcellulose 1% eye drop day time and ointment at night along with topical NSAIDs with a plan to start systemic corticosteroid (Prednisolone) if her condition does not improve. She came for a follow-up visit after one month. Her proptosis regressed significantly and pain disappeared. During her follow-up visit after 3 months, her eye swelling was found completely disappeared and she has been without any medication since then.

Discussion

Thyroid-associated ophthalmopathy is an organ-specific autoimmune process resulting from a complex interplay of genetic (e.g., HLA) and environmental factors. Patient's susceptibility may be determined by genetic factors but its course is influenced by the environment[5]. The development of GO is usually a slow process which takes weeks[3].

In patients with GD, thyroid autoantibodies (circulating T cells directed against certain antigens on thyroid follicular cells) detect the same antigenic epitopes that are shared by preadipocytes and fibroblasts tissues in the orbital space and extraocular muscles[6,7]. Adhesion molecules like ICAM-1, VCAM-1, and CD4 help in the recruitment of T cells and the activation of lymphocytes. Facilitating interactions between immune-competent cells, connective tissue cells, and extracellular matrix components, adhesion molecules take active participation in various inflammatory processes, many of which result in amplification of the cellular immune process in active GO[5]. Increased level of thyroid autoantibodies (e.g. TRab) stimulates orbital tissue differentiation either directly or through cytokines and chemokines (e.g. oxygen free radicals). Inflamed cells in orbit release cytokines, chemokines, and various growth factors (e.g. fibroblast growth factor) which act upon orbital preadipocytes stimulating adipogenesis, fibroblast proliferation, glycosaminoglycan synthesis, and the expression of immunomodulatory molecules[5,6,7,8].

In a similar study, more than 90% of the GO cases are associated with hyperthyroidism. Patients with euthyroid Graves' disease typically have high levels of both stimulating and blocking TSH receptor antibodies (TRAb). Though these antibodies cancel each other's effect they are both capable of eliciting an immune response in orbital tissue resulting in the development of ophthalmopathy[6].

Euthyroid GO is a self-limiting condition that may last from months to years. It usually consists of two phases – an acute phase followed by a resolution phase. Low titer of TRab is associated with a milder form of ophthalmopathy and early recovery[9]. Possibly this is why the reported case recovered so early – without any complication. Thyroid-associated ophthalmopathy in the euthyroid state is not a common phenomenon[4,10]. So, there is always a very good chance of being misdiagnosed. If properly managed, then significant recovery is very common reducing the risk of developing scar tissue. Otherwise, it may warrant surgical decompression[4].

Conclusion

Euthyroid GO is a self-limiting condition yet it can be vision threatening. Proper evaluation and early management must not be neglected in this regard.

References

1. Jang SY, Lee SY, Lee EJ, Yoon JS. Clinical features of thyroid-associated ophthalmopathy in clinically euthyroid Korean patients. Eye. 2012 Sep;26(9): 1263-1269.
2. Gardner D, Shoback D. Greenspans Basic and Clinical Endocrinology, Ninth Edition. 9th ed. 2004. 198–201 p.
3. Rabhani SM, Rashid MA, Akhter R, Hossain M. Atypical Presentation of Thyroid Ophthalmopathy A Case Report. Medicine Today. 2013 Aug 4;25(1): 49-51.
4. Wawhal M, Mogal V, Patil P, Ahire P, Yadav S. Euthyroid ophthalmopathy: A rare case report and a brief review of literature. Int J Sci Res. 2015;4: 529-532.
5. Heufelder AE, Joba W. Thyroid-associated eye disease. Strabismus. 2000 Jan 1;8(2):101-111.
6. Bahn RS. Pathophysiology of Graves' ophthalmopathy: the cycle of disease. The Journal of Clinical Endocrinology & Metabolism. 2003 May 1;88(5): 1939-1946.
7. Garrity JA, Bahn RS. Pathogenesis of graves ophthalmopathy: implications for prediction, prevention, and treatment. American journal of ophthalmology. 2006 Jul 1;142(1):147-153.
8. Shen J, Li Z, Li W, Ge Y, Xie M, Lv M, Fan Y, Chen Z, Zhao D, Han Y. Th1, Th2, and Th17 cytokine involvement in thyroid associated ophthalmopathy. Disease markers. 2015;2015(1):609593.
9. Eckstein AK, Plicht M, Lax H, Neuhäuser M, Mann K, Lederbogen S, Heckmann C, Esser J, Morgenthaler NG. Thyrotropin receptor autoantibodies are independent risk factors for Graves' ophthalmopathy and help to predict severity and outcome of the disease. The Journal of Clinical Endocrinology & Metabolism. 2006 Sep 1;91(9): 3464-3470.
10. Mourits MP, Koornneef L, Wiersinga WM, Prummel MF, Berghout A, Van Der Gaag R. Clinical criteria for the assessment of disease activity in Graves' ophthalmopathy: a novel approach. British Journal of Ophthalmology. 1989 Aug 1;73(8):639-644.
11. Jamal RF, Azariah E, Pandyan D, Chinnaswami R. Validation of Modified Hertel Exophthalmometer. Craniomaxillofacial Trauma & Reconstruction. 2021 Sep;14(3):174-182.

Letter to the Editor

Poor Management of Scabies Among Female Residential Madrasa Students of Bangladesh Caused by Poor Hygiene

Tanjina Sharmin

Dear Editor,

Being a new-generation public health physician, I am currently involved in teaching & research (Trauma College of Health Science), I have been deeply contemplating the country's emerging public health issues both in urban and rural areas, over the past few years.

Focusing on my goal, I intend here to ascribe one of my latest in-depth observations and practical experience in conducting a short-term field survey on 'Scabies'- a highly contagious skin disease. This study was conducted in a purposively selected residential Islamic Education Institute (Madrasa) in Aaraihazar, Narayanganj, Bangladesh at the end of 2023.

This study is supervised by Dr. Kazi Selim Anwar, Ex-Head, Ad-din Medical Research Unit (MRU) and receiving short-term practical training on clinical dermatology under Professor Kaniz Rahman, Associate Professor, Dermatology, Ad-din Women's Medical College & Hospital (AWMCH), Dhaka, Bangladesh, also the Co-supervisor of this project, I led the field survey team comprising 5 BSc research students (Dissertation Group) from Government College of Applied Human Science, under Dhaka University.

We conducted this survey randomly (systematic: nth sampling) and selected 230 students with a mean age (11 ±3 years) from a female residential Madrasa Islamic Religious Education Institution) Al Jamiatul Islamia Darul Quran Lil Banat, Araihazar, to find out the age-specific prevalence of scabies among them, its detailed clinical manifestations, epidemiological instincts, and association of those parameters with respondents' nutritional status (based on anthropometric measurements).

Firstly, Scabies, caused by an ectoparasite called Sarcoptes scabiei var. hominis remains a highly contagious skin infection, the most parasitic skin infestation in humans. Many children and young adults are facing so many health problems due to this. Most of the health problems are:

1. Itching in inner burrows.
2. Itching worsens at night.
3. Inflamed bumps etc.[1]

I am writing to call attention to the urgent problem of scabies in several madrasas across Bangladesh. Scabies is a skin condition caused by parasites (Sarcoptes scabiei var. hominis) that infest the skin, leading to intense itching and rashes. It is extremely contagious and often spreads quickly in crowded environments with poor sanitation facilities, such as those found in many madrassas.

Unfortunately, many of these religious schools lack basic sanitation facilities and proper awareness regarding personal hygiene and disease spread. This has led to a rapid spread of scabies among students, and if left untreated, can lead to more severe health complications. Moreover, the lack of awareness about scabies and their symptoms also leads to delayed diagnosis and treatment, enabling the disease to spread even further.

To address the problem, we visited a female madrasa in Narayanganj last October 23. Our goal was to clinically

Correspondence: Dr. Tanjina Sharmin, Assistant Professor, Trauma College of Health Science, Dhaka. Phone: 017152623019, E-mail tanjinasharmin402@gmail.com

Received Date : 3 February, 2024
Accepted Date : 18 February, 2024

assess skin problems, give them prescriptions on the basis of clinical diagnosis, and assess their knowledge and understanding of nutrition. We also assessed their general nutritional condition. We followed a standard questionnaire to collect information and used proper tools to measure their height, weight, and mid-upper arm circumference (MUAC).

We visited a female madrasa situated at Araihazar upazilla of Narayanganj district. They have about 230 students, among which 207 were present on the day. It is a qwami madrasa offering up to master level education, but most of the students are from junior or elementary level (nurani moktob). About 70% of the students live in the residential facility of the madrasa, meanwhile the rest reside at family homes in nearby areas. Non-residential students spend at least 8- 9 hours in the institute for class and studies.

General environment in the visited madrasa

Structurally, the madrasa is a single-story building with a central courtyard. Due to 'parda' system rooms only have open windows facing the courtyard. The courtyard also provides common washing and cleaning facilities and cloth drying rods. Most of the rooms lack proper natural lighting and ventilation. The same rooms are used for studying during the day and sleeping at night and after lunch. Folding beds, clothes, books, and all the other personal items are stored in common wall racks. Multiple students share the same folding beds. Students use the same string for clothes hanging indoors.

Scabies and other health problems

Among students, at least 60% were clinically diagnosed with symptoms of scabies and other skin problems. Most of them have never taken any treatment. Less than 50% of students have taken non-prescription treatments from pharmacies or alternative treatments like homeopathy. On the day of our visit, 200 prescriptions were given for various health problems. The madrasa authority was requested to take the necessary steps to solve the health problems.

Nutrition

Our questionnaire had a different section to assess knowledge and attitude towards nutrition. Most of them had no basic knowledge about nutrition. Madrassa provides them 3 meals a day. The meal plan lacks proper nutrition. Many of the residential students bring curry and other snacks from their homes. There is a small shop inside the madrasa which sells mainly packaged snacks like candy, chocolate, chips, flavoured juices, etc. Abruptly 90% of students under the age of 10 years are used to eating this kind of packed snack.

Most of the students are unaware of the basic understanding of nutrition and nutritious foods. Though their curriculum has a very brief discussion on nutrition. We also had a small discussion about basic nutrition with them.

Their overall nutrition knowledge and food habits should be improved including more hygiene practices. To achieve that, more study and education programs should be conducted in this field. Also, massive reforms should be done in the structural conditions of the madrasas.

Conclusion

The government, local health authorities, and madrasa management must address this issue urgently. Many other studies have shown potential risks of scabies and other health problems in our country. Health education programs should be initiated, and funds should be allocated towards better infrastructure facilities including clean water and personal hygiene products. So, it can enable students to maintain proper hygiene and prevent the spread of scabies.

Reference

1. Scabies. Cleveland Clinic. 2024.

Abstracts

The Magnitude of Unfavorable Tuberculosis Treatment Outcomes and Their Relation with Baseline Undernutrition and Sustained Undernutrition Among Children Receiving Tuberculosis Treatment in Central Ethiopia

Abay Burusie[1], Fikre Enquesilassie[2], Nicole Salazar-Austin[3], Adamu Addissie[2]

[1] Department of Public Health, College of Health Sciences, Arsi University, Asella, Ethiopia, [2]School of Public Health, College of Health Sciences, Addis Ababa University, Addis Ababa, Ethiopia [3]Division of Pediatric Infectious Diseases, Johns Hopkins University School of Medicine, Baltimore, MD, USA

Background: One of the global key indicators for monitoring the implementation of the World Health Organization's End Tuberculosis (TB) Strategy is the treatment outcome rate.

Objective: This study aims to assess the magnitude of unfavorable treatment outcomes and estimate their relationship with baseline undernutrition and sustained undernutrition among children receiving TB treatment in central Ethiopia.

Methods: This retrospective cohort study included children treated for drug-susceptible TB between June 2014 and February 2022. The study comprised children aged 16 and younger who were treated in 32 randomly selected healthcare facilities. A log-binomial model was used to compute adjusted risk ratios (aRR) with 95% confidence intervals (CIs).

Results: Of 640 children, 42 (6.6%; 95% CI = 4.8–8.8%) had an unfavorable TB treatment outcomes, with 31 (73.8%; 95% CI = 58.0–86.1%) occurring during the continuation phase of TB treatment. We confirmed that baseline undernutrition (aRR = 2.68; 95% CI = 1.53–4.71), age less than 10 years (aRR = 2.69; 95% CI = 1.56–4.61), HIV infection (aRR = 2.62; 95% CI = 1.50–4.59), and relapsed TB (aRR = 3.19; 95% CI = 1.79–4.71) were independent predictors of unfavorable TB treatment outcomes. When we looked separately at children who had been on TB treatment for two months or more, we found that sustained undernutrition (aRR = 3.76; 95% CI = 1.90–7.43), age below ten years (aRR = 2.60; 95% CI = 1.31–5.15), and HIV infection (aRR = 2.26; 95% CI = 1.11–4.59) remained predictors of unfavorable outcomes, just as they had in the first two months. However, the effect of relapsed TB became insignificant (aRR = 2.81; 95% CI = 0.96–8.22) after the first two months TB treatment.

Conclusions: The magnitude of unfavorable TB treatment outcomes among children in central Ethiopia met the World Health Organization's 2025 milestone. Nearly three-quarters of unfavorable TB treatment outcomes occurred during the continuation phase of TB treatment. Baseline undernutrition, sustained undernutrition, younger age, HIV infection, and relapsed TB were found to be independent predictors of unfavorable TB treatment outcomes among children receiving TB treatment in central Ethiopia.

Keywords: Childhood tuberculosis, Unfavorable treatment outcome, Magnitude, Baseline undernutrition, Sustained undernutrition, Predictors

Reference: Burusie A, Enquesilassie F, Salazar-Austin N, Addissie A. The magnitude of unfavorable tuberculosis treatment outcomes and their relation with baseline undernutrition and sustained undernutrition among children receiving tuberculosis treatment in central Ethiopia. Heliyon. 2024 Mar 30;10(6).

Evaluation of Long-Term Efficacy and Safety of Dienogest in Patients with Chronic Cyclic Pelvic Pain Associated with Endometriosis

Antonio Maiorana[1], Marianna Maranto[1], Vincenzo Restivo[2], Daniele Lo Gerfo[3], Gabriella Minneci[1], Antonella Mercurio[1], Domenico Incandela[1]

[1]HCU Obstetrics and Gynecology, ARNAS Civico Di Cristina-Benfratelli Hospital, Palermo, Italy, [2]Department of Medicine, University Kore of Enna, Enna, Italy, [3]G.F. Ingrassia Hospital, Palermo, Italy

Purpose: To evaluate the efficacy and long-term safety (up to 108 months) of treatment with Dienogest in patients with endometriosis.

Methods: Patients with chronic pelvic pain endometriosis-related were enrolled in this observational study from June 2012 to July 2021. The patients enrolled took Dienogest 2 mg as a single daily administration. Group B of long-term therapy patients (over 15 months) were compared with group A of short-term therapy patients (0–15 months). The effects of the drug on pain variation were assessed using the VAS scale and endometriomas dimensions through ultrasonographic evaluation. Furthermore, has been valuated the appearance of side effects and the effect of the drug on bone metabolism by performing MOC every 24 months in group B.

Results: 157 patients were enrolled. The mean size of the major endometrioma progressively decreased from 33.2 mm (29.4–36.9) to 7 mm (0–15.8) after 108 months of treatment. We found a significant improvement in dysmenorrhea, dyspareunia, dyschezia and non-cyclic pelvic pain. As for the side effects, both groups complained menstrual alterations present in 22.9%. In 27.6% of group B, osteopenia was found. Group B had a higher percentage statistically significant of side effects such as headaches, weight gain and libido reduction compared to group A.

Conclusion: Long-term therapy with Dienogest has proven effective in controlling the symptoms of the disease and reducing the size of endometriomas, with an increase in the positive effects related to the duration of the intake and in the absence of serious adverse events. Study approved by the "Palermo 2" Ethics Committee on July 2, 2012 No. 16.

Reference: Maiorana A, Maranto M, Restivo V, Gerfo DL, Minneci G, Mercurio A, Incandela D. Evaluation of long-term efficacy and safety of dienogest in patients with chronic cyclic pelvic pain associated with endometriosis. Archives of Gynecology and Obstetrics. 2024 Feb;309(2):589-597.

NEWS

Name of the Presenter	:	Prof. Dr. Shahidul Islam
Designation	:	Professor and Head
Department	:	Department of Orthopedics and Spine Surgery, Ad-din Women's Medical College.
Type of presentation	:	Podium Presentaion
Presented at	:	Asia Pasific Orthopedic Association (APOA) Congress, 2024
Venue	:	Hotel InterContinental, Festival City, Dubai
Date	:	28/02/2024-02/03/2024

AWMC thankfully acknowledge the respected reviewers for their eminent contributions to this volume

1. **Prof. Dr. Mahmuda Hassan**
   Professor, Department of Paediatrics
   Ad-din Women's Medical College, Dhaka

2. **Prof. Dr. Md. Mazharul Islam**
   Professor, Department of Forensic Medicine
   Ad-din Women's Medical College, Dhaka

3. **Prof. Dr. Kazi Morjina Begum**
   Professor, Department of Gynecology and Obstetrics
   Ad-din Women's Medical College, Dhaka

4. **Prof. Dr. ABM Omar Faruque**
   Professor and Head, Professor, Department of Anatomy
   Ad-din Women's Medical College, Dhaka

5. **Dr. Rumana Haque**
   Associate Professor, Department of Community Medicine
   Ad-din Women's Medical College, Dhaka

6. **Dr. Kaniz Rahman**
   Associate Professor, Department of Dermatology
   Ad-din Women's Medical College, Dhaka

Copyright Declaration Form

This is hereby declare that I am/ we are the author/authors of the following manuscript titled

"……

……

……

……." and agreed to the following:

1. We have participated sufficiently in contributing to the content of this work and take full responsibility of it.
2. The article mentioned above has not published yet and also not under consideration for publication with any other journal/ organization.
3. We have no conflict of interest/ we have the following conflict of interest.
4. We give the rights to the corresponding author to make necessary changes or any correspondence with the journal on our behalf ? He / She will act as the guarantor for the manuscript on our behalf.
5. We hereby indemnify the Journal of Ad-din Women's Medical College against any claims made by other parties concerning the authorship of the article or rights to publish the article.
6. If any request/query by the editors, we will provide the data and cooperate fully in obtaining and providing the data on which the manuscript is based, for examination by the editors.
7. We also agreed to the authorship of this article in the following sequence.

Sl. no.	Author's Name with E-mail	Author's Contribution	Date Signed

Correspondence to: ……

Address: ……

Mobile: …….. Email: ……...