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MH Samorita Medical College Journal

MH Samorita Med Coll J January 2024; 7(1): 1-55

Contents

MH Samorita Medical College Journal
(MH Samorita Med Coll J)

MH Samorita Medical College Journal
(MH Samorita Med Coll J)

INFORMATION FOR AUTHORS

Manuscript Preparation and Submission

Guide to Authors

MH Samorita Medical College Journal provides rapid publication (twice in a year) of articles in all areas of different subjects. The Journal welcomes the submission of manuscripts that meet the general criteria of significance and scientific excellence.

The manuscripts should be submitted addressing Editor-in-Chief.

The Journal of MH Samorita Medical College only accepts manuscripts submitted as triplicate hard copy with a soft copy.

Papers must be submitted with the understanding that they have not been published elsewhere (except in the form of an abstract or as part of a published lecture, review, or thesis) and are not currently under consideration by another journal (**International or National)** or any other publisher.

The submitting (Corresponding) author is responsible for ensuring that the submitting article has been signed by all the co-authors. It is also the authors' responsibility to ensure that the articles emanating from a particular institution are submitted with the approval of the necessary institutional requirement. Only an acknowledgment from the editorial board officially establishes the date of receipt. Further correspondence and proofs are sent to the corresponding author(s) before publication unless otherwise indicated. It is a condition for submission of a paper that the authors permit editing of the paper for readability. All enquiries concerning the publication of papers should be addressed to Editor-in-Chief (MH Samorita Med Coll J)

The cover letter

Cover letter is expected to be submitted along with manuscript. Use the cover letter to explain why the paper should be published in the Journal of MH Samorita Medical College. The cover letter should include the corresponding author's full address, telephone/ fax numbers and e-mail address.

Ethical aspects

- Ethical aspect of the study is considered very carefully at the time of assessment of the manuscript.
- Any manuscript that includes table, illustration or photograph that have been published earlier should accompany a letter of permission for re-publication from the author(s) of the publication and editor/ publisher of the Journal where it was published earlier.
- Permission of the patients and/or their families to reproduce photographs of the patients where identity is not disguised should be sent with the manuscript. Otherwise the identity would be blackened out.

Conditions for submission of manuscript

- All manuscripts are subject to peer-review.
- Manuscripts are received with the explicit understanding that they are not under simultaneous consideration by any other publication.
- Submission of a manuscript for publication implies the transfer of the copyright from the author to the publisher upon acceptance. Accepted manuscripts become the permanent property of the MH Samorita Medical College Journal (MHSMCJ) and may not be reproduced by any means in whole or in part without the written consent of the publisher.
- It is the author's responsibility to obtain permission to reproduce illustrations, tables etc. from other publications.

Article Types

Four types of manuscripts may be submitted.

Editorials: It should preferably cover a single topic of common interest.

Original Articles: These should describe new and carefully confirmed findings, and experimental procedures should be given in sufficient detail for others to verify the work and its volume should **not exceed 5000 words** or equivalent space including title, summary/abstract, main body, references, table(s) and figure(s).

Review Articles: Submissions of reviews covering topics of current interest are welcome and encouraged. Reviews should be concise and no longer than 4 to 6 printed pages (about 12 to 18 manuscript pages) and should **not exceed 5000 words**. It should be focused and must be up to date.

Case Reports: This should cover uncommon and/or interesting cases and should **not exceed 1000** words or equivalent space.

Review Process

All manuscripts are initially screened by editor and sent to selective reviewers. Reviewers are requested to return comments to editor within 3 weeks. On the basis of reviewers' comments the editorial board decides whether the articles are accepted or send for re-review the manuscripts. The MH Samorita Med Coll J editorial board tries to publish the manuscript as early as possible fulfilling all the rigorous standard journal needs.

I. Preparing a Manuscript for Submission to MH Samorita Med Coll J

Editors and reviewers spend many hours reading and working on manuscripts, and therefore appreciate receiving manuscripts that are easy to read and edit. The following information provides guidance in preparing manuscripts for the journal.

I A. Preparation of manuscript

Criteria: Information provided in the manuscript are important and likely to be of interest to an international readership.

Preparation

1. Manuscript should be written in English and typed on one side of A4 (290 x 210cm) size white paper.
2. Margin should be 5 cm for the header and 2.5 cm for the remainder.
3. Style should be that of modified Vancouver.
4. Each of the following section should begin on separate page :

- Title page
- Abstract
- Main body/Text: Introduction, Materials and Methods, Results, Discussion and conclusion (For an original article/ Systematic review)
- Acknowledgement
- References
- Tables and legends

Pages should be numbered consecutively at the upper right hand corner of each page beginning with the title page.

I A. 1. General Principles

- The text of observational and experimental articles is usually (but not necessarily) divided into the following sections: Introduction, Materials and Methods, Results, and Discussion(so-called "IMRAD" structure is a direct reflection of the process of scientific discovery.
- Long articles may need subheadings within some sections (especially Results and Discussion) to clarify their content. Other types of articles, such as case reports, reviews, and editorials, probably need to be formatted differently.
- Authors need to work closely with editors in developing or using the publication formats and should submit supplementary electronic material for peer review.
- Double-spacing all portions of the manuscript— including the title page, abstract, text, acknowledg- ments, references, individual tables, and legends— and generous margins make it possible for editors and reviewers to edit the text line by line and add comments and queries directly on the paper copy.
- If manuscripts are submitted electronically, the files should be double-spaced to facilitate printing for reviewing and editing.
- Authors should number on right upper all of the pages of the manuscript consecutively, beginning with the title page, to facilitate the editorial process.

I A. 2. Title Page

The title page should have the following information:

- The title should be brief, relevant and self explanatory. It should reflect the content of the article and should include all information that will make electronic retrieval of the article easy. Subtitles should not be used unless they are essential.
- Title should not be phrased as questions.
- The names of the authors should appear below the title that should include full names of all authors **(no initial).**

Example: Md MA Hamid **(correct form);** Hamid MA **(incorrect).**

The affiliations and full addresses of all authors should be mentioned in the title page.

- Contact information for corresponding authors: The name, mailing address, telephone and fax numbers, and e-mail address of the author responsible for correspondence about the manuscript.
- The name and address of the author to whom requests for reprints should be addressed or a Statement that reprints are not available from the authors.
- Source(s) of support in the form of grants, equipment, drugs, or all of these.

I A. 3. Abstract

Original Article: Structured abstracts are essential for original research. Structured abstract includes introduction, objective(s), materials and methods, results and conclusion. Should be limited to 250 words. The abstract should provide the introduction of the study and blinded state and should mention the study's purpose, basic procedures including selection of study subjects or laboratory animals, main findings (giving specific effect sizes and their statistical significance, if possible) and the principal conclusion. Because abstracts are the only substantive portion of the article indexed in many electronic databases, and the only portion that many readers read, it should accurately reflect the content of the article; so, authors need to be careful about that.

Review Article: is expected to contain background, objective(s), main information and conclusion in brief form. Without any subheading the content should be described in a single paragraph.

Case Study: needs to have background, case summary and conclusion. The content should be described in a single paragraph.

Do not put references in the abstract.

I A. 4. Main body

I A. 4 a) Original article

The body of the text should be divided into the following sections: i) Introduction, ii) Materials and methods, iii) Results, iii) Discussion and iv) Conclusion.

i) Introduction

Should not exceed **500 words**. This section includes background of the problem (that is, the nature of the problem and its significance). It should be very specific, identify the specific knowledge in the aspect, reasoning and what the study aim to answer. Only pertinent primary references should be provided and no data or conclusions should be included from the work to be reported. **Justificatio**n of the study and its **objective(s)** should be mentioned at the end of this section. All information given in this section must have references that to be listed in the reference section.

ii) Materials and methods

The Methods section should be written in such way that another researcher can replicate the study. The type of study (study design), study period, sampling technique, sample size, study population, data collection technique and tool as well as data handling, processing and data analysis should be briefly mentioned in this section.

ii a) Selection and Description of Participants

Describe selection of the observational or experimental participants (patients or laboratory animals, including controls) clearly, including eligibility (inclusion) and exclusion criteria and a description of the source population. Because the relevance of such variables as age and sex to the object of research is not always clear, authors should explain their use when they are included in a study report—for example, authors should explain why only participants of certain ages were included or why women were excluded etc. The guiding principle should be clarity about how and why a study was done in a particular way. When authors use such variables as race or ethnicity, they should define how they measured these variables and justify their relevance.

ii b) Technical Information

- Describe methods, apparatus (give the manufacturer's name and address in parentheses), and procedures in sufficient detail to allow others to reproduce the results.
- Cite references to established methods, including statistical methods. Provide references and brief descriptions for methods that have been published but are not well-known.

- Describe new or substantially modified methods, give the reasons for using them, and evaluate their limitations.
- Identify precisely all drugs and chemicals used, including generic name(s), dose(s), and route(s) of administration.
- For a systematic review article include a section describing the methods used for locating, selecting, extracting, and synthesizing data. These methods should also be summarized in the abstract.

ii c) Statistics

- Describe statistical methods with enough detail to enable a know- ledgeable reader with access to the original data to verify the reported results. When possible, quantify findings and present them with appropriate indicators of measurement error or uncertainty (such as confidence intervals).
- Cite references for the design of the study and statistical methods (standard for the work) when possible.
- Define statistical terms, abbreviations, and most symbols.
- Specify the computer software used.

iii) Results

Results should be described in past tense.

- Present results in logical sequence in the text, tables, figures and illustrations, giving the main or most important findings first. Maintain the sequence of results with the specific objectives selected earlier.
- Do not repeat all the data in the tables or illustrations in the text; emphasize or summarize only the most important observations.
- When data are summarized in the result section, give numeric results not only as derivatives (for example, percentages) but also as the absolute numbers from which the derivatives were calculated, and specify the statistical methods used to analyze them.
- Restrict tables and figures to those needed to explain the argument (relevant to objectives) and to assess supporting data. Use graphs as an alternative to tables with many entries; do not duplicate data in figures (graphs/ charts) and tables. **Example:** Age range of the studied respondents should be appeared **either in table or in figure**.
- Avoid nontechnical uses of technical terms in statistics, such as "random" (which implies a randomizing device), "normal," "significant," "correlations," and "sample."

iv) Discussion

The discussion must be described in **past tense.** This section should reflect the author's comments on the results.

- Emphasize the new and important aspects of the study and the conclusions that follow them in the context of the totality of the best available evidence.
- Do not repeat in detail data or other information given in the Introduction or the Results section.
- For experimental studies, it is useful to begin the discussion by briefly summarizing the main findings, then explore possible mechanisms or explanations for those findings.
- Compare and contrast the results with other relevant studies and potential argument for discrepancy and consistency should be given here.
- State the limitations of the study, and explore the implications of the findings for future research and for clinical practice.
- Link the conclusions with the goals of the study but avoid unqualified statements, not adequately supported by the data.
- In particular, avoid making statements on economic benefits and costs unless the manuscript includes the appropriate economic data and analyses.

v) Conclusion

It should be described in **present tense**. Conclusion should be the main message and the authors' impression from the results of the study. The article should be concluded briefly (**not more than 100 words**). Recommendation(s) can also be included in this section which should not exceed 30 words.

I A. 4 b) Review article

For a systematic review or meta-analysis the body of text should be divided into the following sections (Like an original article): i) Introduction, ii). Materials and methods, iii) Findings/Results, iii a) Main information about the topic, iv) Discussion and v) Conclusion. For a general review article section No. ii (Materials and methods) and iii (Findings/Results) iv) (Discussion) are not relevant. So, for a general review article section No. i). Introduction, iii a). Main Information about the Topic and v). Conclusion are required.

i) **Introduction**: should not exceed **500 words**. This section will include background of the topic. At the end of the review, why the author want to publish the topic on the article ie., the objective should be mentioned.

ii) **Material and methods**: How the review was done, what sorts of articles were searched, how they were searched, the total number of articles reviewed should be mentioned here. This section is not required for a general review article.

iii) **Results/findings**: The findings on the topic after reviewing the articles should be compiled, analysed and described here like an original research article. This section is not required for a general review article.

iii a) **Main Information about the Topic**: The main information about the topic should be described and discussed elaborately with the help of published literatures in this section but the subtitles should be relevant to the topic(Title) for a general review article. This section may not be required for a systematic review or meta-analysis.

iv) **Conclusion:** The article should be concluded briefly (**not more than 100 words**).

I A. 4 c) Case Report

The body of the text should be divided into the following sections: i) Introduction, ii) Case Report (Description of the case), iii) Discussion and iv) Conclusion.

i) **Introduction**: A brief description should be given on the topic of the case with the help of published literatures.

ii) **Case Report**

- The findings (history, clinical examination and investigations) should be described here.
- Management (if any) can also be given.

iii) **Discussion**

- The discussion should be started by briefly summarizing the main findings of the case reported, then possible explanations for those findings should be explored.
- The findings of the case should be compared with other relevant studies and potential argument for discrepancy and consistency should be given here.

iv) **Conclusion**

- The article should be concluded briefly (**not more than 100 words**).
- The main findings of the reported case should be emphasized which the readers can consider as a clue to suspect a diagnosis for a rare case in future.

I A. 5. Acknowledgement

Acknowledge advisor(s) and/or any one who helped the researcher(s)

- Technically
- Intellectually
- Financially

I A. 6. References

I A. 6 a) General Considerations related to References

- Although references to review articles can be an efficient way to guide readers to a body of literature, review articles do not always reflect original work accurately. Readers should therefore be provided with direct references to original research sources whenever possible.
- Abstracts should not be used as references. References to papers accepted but not yet published should be designated as "in press" or "forthcoming"; authors should obtain written permission to cite such papers as well as verification that they have been accepted for publication.
- Information from manuscripts submitted but not accepted should be cited in the text as "unpublished observations" with written permission from the source.
- Citing a "personal communication" should be avoided unless it provides essential information not available from a public source, in which case the name of the person and date of

communication should be cited in parentheses in the text. For scientific articles, obtain written permission and confirmation of accuracy from the source of a personal communication. Some but not all journals check the accuracy of all reference citations; thus, citation errors sometimes appear in the published version of articles. To minimize such errors, references should be verified using either an electronic bibliographic source, such as PubMed or print copies from original sources.

- Authors are responsible for checking that none of the references cite retracted articles except in the context of referring to the retraction. For articles published in journals indexed in MEDLINE, the ICMJE considers PubMed the authoritative source for information about retractions.

I A. 6 b) Reference Style and Format

➢ **Reference Style**

Author should follow **Vancouver style**.

- R**eference list** should appear at the end of the article and should be numbered consecutively in the order as they are cited in the text, which is done by **superscript** (single press of 'ctrl shift +') in numerical form **(citation number).**
- When **multiple references** are cited at a given place in the text, use a **hyphen** to join the first and last numbers that are **inclusive**. Use **commas** (without spaces) to separate **non-inclusive** numbers in a multiple citation.

  Example: 2,3,4,5,7,10,12 are abbreviated to **(2-5,7,10,12**).
- **Do not** use a hyphen if there is no citation numbers in between 2 numbers that support your statement.

  Example: 1-2 (**in correct form).** 1,2**(correct form)**
- As a general rule, citation numbers in the text should be placed **outside full stops and commas**, inside colons and semicolons (applicable for any part of the document).

  Example: Masud Alam,1 Selim Khan[2]

  Example: Over the past decades public health relevance of mental health condition 'in children and adolescents has been of growing concern'.[1-3,5,6]
- Identify references in text, tables, and legends by Arabic numerals in superscript.
- References cited only in tables or figure legends should be numbered in accordance with the sequence established by the first identification in the text of the particular table or figure.

➢ **Reference Format**

1. Citing a Book

The essential details required are (in order):

1.1 Name/s of author/s, editor/s, compiler/s or the institution responsible.

- Where there are **6 or less authors** you must list **all authors**.
- Where there are **7 or more author**s, only the **first 6 are listed** and **add "et al"** (after a **comma**).
- Put a comma and 1 space between each name. The last author must have a full-stop after their initial(s).

  Format: surname (**1 space**) initial/s (**no spaces or punctuation between initials**) (**full-stop OR if further names comma, 1 space**)

  Example: Smith AK, Jones BC, Bloggs TC, Ashe PT, Fauci AS, Wilson JD, et al.
- **When author/s is/are editor/s :**Follow the same methods used with authors but use the word **"editor"** or **"editors"** in full after the name/s. The word editor or editors must be in small letter. (**Do NOT** confuse with "ed."used for edition.)

  Example: Millares M, editor. Applied drug information: strategies for information management. Vancouver (WA): Applied Therapeutics Inc; 1998.

Sponsored by institution, corporation or other organization (including PAMPHLET)

E**xample**: Australian Pharmaceutical Advisory Council. Integrated best practice model for medication management in residential aged care facilities. Canberra: Australian Government Publishing Service; 1997.

1.2. Title of publication and subtitle if any

- Italics or underlining should be avoided.
- Only the first word of the titles (and words that normally begin with a capital letter) should be started with capital letter (except proper noun).

Format: title (**full-stop, 1 space**)

Example: Harrison's principles of internal medicine.

Example: Physical pharmacy: physical chemical principles in the pharmaceutical sciences.

Example: Pharmacy in Australia: the national experience.

1.3. Edition (other than the first)

Number of edition **other than first one** should be mentioned as **2nd, 3rd,10th ed.**

Example: Blenkinsopp A, Paxton P. Symptoms in the pharmacy: a guide to the management of common illness. 3rd ed. Oxford: Blackwell Science; 1998.

1.4. Place of publication (if there is more than one place listed, use the first one)

- The place name should be written in full.
- If the place **name is not well known**, add a comma, 1 space and the state or the country for clarification. For places in the USA, add after the place names the 2 letter postal code for the state. This must be in upper case. eg. Hartford (CN): (where CN=Connecticut).

Format: place of publication (**colon, 1 space**)

Example: Hartford (CN):

Example: Texas (NSW):

Example: Kyoto (Japan):

1.5. Publisher

The publisher's name should be spelled out in full.

Format: publisher (**semi-colon, 1 space**)

Example: Australian Government Publishing Service;

Example: Raven Press;

Example: Williams & Wilkins;

1.6. Year of publication

Format: year (full-stop, add 1 space if page numbers follow).

Example: 1999.

Example: 2000. p. 12-5.

1.7. Page numbers (if applicable).

- Abbreviate the word "page" to "p.".

Note: do not repeat digits unnecessarily

Format: p (**full-stop, 1 space**) page numbers (**full-stop**).

Example: p. 122-9 (**correct**); p. 122-129 (**incorrect**).

Example: p. 1129-57 (**correct**); p. 1129-157 (**incorrect**).

Example of citing a book: Lodish H, Baltimore D, Berk A, Zipursky SL, Matsudaira P, Darnell J. Molecular cell biology. 3rd ed. New York: Scientific American; 1995.

(*Name/s. Title. Edition(other than first). Place of publication: Publisher; year of publication. p. Page no*)

2. Citing a Chapter in an Edited Book (to which a number of authors have contributed)

- Name/s of author of the chapter
- Title of chapter followed by, In:
- Editor
- Title of book
- Series title and number (if part of a series)
- Edition (if not the first edition)
- Place of publication (if there is more than one place listed, use the first named)
- Publisher
- Year of publication
- Page numbers

(*Title of Chapter. In: Editor(s). Title of book and number. Edition (other than first). Place of publication: Publisher; year of publication. p. Page no*)

Example of citing a chapter in an edited book:

Porter RJ, Meldrum BS. Antiepileptic drugs. In: Katzung BG, editor. Basic and clinical pharmacology. 6th ed. Norwalk (CN): Appleton and Lange; 1995. p. 361-80.

3. Citing a Journal Article from a Print source

The essential details required are (in order):

- **Name/s of author/s of the article.**
  See step 1 of "Citing a book" for full details.
- **Title of article.**
  See step 2 of "Citing a book" for full details.

Example: Validation of an immunoassay for measurement of plasma total homocysteine.

- **Name of journal (abbreviated).**

- Abbreviate the name of the journal according to the style used in Medline.
- A list of abbreviations can be found at: http://w**ww.ncbi.nlm.nih.gov/entrez/query.fcgi?db=journals**

  Note: No punctuation marks are used in the abbreviated journal name.

Format: journal title abbreviation (1 space)

Example: Bang J Psychiatry

- **Year of publication (month or day should be omitted).**

Format: year (**semi-colon, one space**)

Example: 1996; 12(5): 127-33.

- **Volume number (and issue/part)**

  Format: volume number (**colon, one space**)

Example: 1996; 12(5): 127-33. Or
1996; 18: 1237-8.

- **Page numbers**

Note: Do not repeat digits unnecessarily

Format: page numbers (full-stop)

Example: 5310-5.

Example of citing a journal: Russell FD, Coppell AL, Davenport AP. In vitro enzymatic processing of radiolabelled big ET-1 in human kidney as a food ingredient. Biochem Pharmacol 1998; 55(5): 697-701.

Name(s). Title. Name of the Journal Year of publication; Volume Number (Session/Issue Number): Page Number.

- **No author given in article**

  Example: Coffee drinking and cancer of the pancreas [editorial]. BMJ 1981; 283: 628.

- **Journals with parts and/or supplements**

Examples

- **Volume with supplement**

  Environ Health Perspect 1994; 102Suppl 1: 275-82.

- **Issue with supplement**

  SeminOncol 1996: 23(1 Suppl 2): 89-97.

- **Volume with part**

  Ann ClinBiochem 1995; 32(Pt 3): 303-6.

4. Citing a Journal Article from Internet and Other Electronic Sources

This includes software and internet sources such as web sites, electronic journals and databases.

The **basic form** of the citations **follow the principles listed for print sources** (see above).

In the case of sources that may be subject to alteration it is important to acknowledge the **Date The Information Was Cited.** This is particularly true for web sites that may disappear or permit changes to be made and for CD-ROMS that are updated during the year.

4.1. Citing a Journal Article from the Internet

Note: Follow the same procedure for citing print journals as for electronic journals regarding date, volume pages and journal title

Format: Author/s (full-stop after last author, 1 space) **Title of article** (full-stop, 1 space)

Abbreviated title of electronic journal (1 space) **[serial online]** (1 space) **Publication year** (1space) **month(s)** - if available (1 space) **[cited year month (abbreviated) day]** - in square brackets (semi colon, 1 space) **Volume number** (no space) **Issue number** if applicable in round brackets (colon) **Page numbers or number of screens** in square brackets (full-stop, 1 space) **Available from** (colon, 1 space) URL:**URL address underlined**

Examples:

- Morse SS. Factors in the emergence of infectious disease. Emerg Infect Dis [serial online] 1995 Jan-Mar [cited 1999 Dec 25]; 1(1):[24 screens]. Available from:URL: http://www/cdc/gov/ncidoc /EID/eid.htm
- Garfinkel PE, Lin E, Goering P. Should amenorrhoea be necessary for the diagnosis of anorexia nervosa? Br J Psych [serial online] 1996 [cited 1999 Aug 17]; 168(4):500-6. Available from: URL:http://biomed. niss.ac.uk

4.2. Citing a Journal Article from WWW site

(If the author is not documented, the title becomes the first element of the reference.)

Format: Author (full-stop after last author, 1 space) **Title** (full-stop, 1 space) **[Online]** (full stop, 1 space) **Publication Year** (1 space) **[cited year month (abbreviated) day]** (semi colon) **Number of screens in square brackets or pages** (full-stop, 1 space) **Available from** (colon, 1 space)

URL: (no space) **URL address underlined**

Note: The number of screens is not necessary. Put a semi colon and 1 space after the cited date if no pages or screen numbers are listed.

When the date is approximated, indicate that by following the date with a question mark and inserting the statement in square brackets. Eg. [2001?]

Examples: National Organization for Rare Diseases [Online]. 1999 Aug 16 [cited 1999 Aug 21]; Available from: URL:http://www.rare diseases.org/

Royal College of General Practitioners.The primary health care team.[Online]. 1998 [cited 1999 Aug 22];[10 screens]. Available from:URL: http:// ww. rcgp.org.uk/informat/publicat/rcf0021.htmZand J. The natural pharmacy: herbal medicine for depression [Online]. [1999?] [cited 2001 Aug 23];[15 screens]. Available from:

URL:http://www.healthy.net/asp/templates/Article.asp?PageType=Article&Id=920

Important Points For Reference List

- For **online material**, please cite the **URL**, together with the **date you accessed** the website
- **Online journal** articles can be cited using the Digital Object Identifier **(DOI)** number

Samples of Reference List

A list of references contains details of those works cited in the text.

The references are listed in the same numerical order as they appear in the body of the text

1. Getzen TE. Health economics: fundamentals and flow of funds. New York (NY): John Wiley & Sons; 1997.
2. Millares M, editor. Applied drug information: strategies for information management. Vancouver, WA: Applied Therapeutics, Inc.; 1998.
3. Australian Government Publishing Service. Style manual for authors, editors and printers. 5th ed. Canberra: Australian Government Publishing Service; 1994.
4. Australian Pharmaceutical Advisory Council. Integrated best practice model for medication management in residential aged care facilities. Canberra: Australian Government Publishing Service; 1997.
5. Bennett GL, Horuk R. Iodination of chemokines for use in receptor binding analysis. In: Horuk R, editor. Chemokine receptors. New York (NY): Academic Press; 1997. p. 134-48. (Methods in enzymology; vol 288).
6. Coffee drinking and cancer of the pancreas [editorial]. BMJ 1981;283:628.
7. Morse SS. Factors in the emergence of infectious disease. Emerg Infect Dis [serial online] 1995 Jan-Mar [cited 1996 Jue 5]; 1(1):[24 screens]. Available from: URL:http:// www. cdc.gov/ ncidoc/EID/eid.htm

I A. 7. Conflict of interest

All authors are requested to disclose any actual or potential conflict of interest including any financial, personal or other relationships with other people or organizations.

It is important to be consistent when you are referencing.

I A. 8. Tables and Illustrations (Figures)

I A. 8 a) Tables

- In tables, capture information concisely and display it efficiently.
- Use tables /fig that are relevant to the study.
- Try to limit the number of tables/figures.
- Type or print each table with double-spacing on a separate sheet of paper. Number tables consecutively in the order of their first citation in the text and supply a brief title for each.
- Do not use internal horizontal or vertical lines. Give each column a short or an abbreviated heading. Authors should place explanatory matter in footnotes, not in the heading. Explain all nonstandard abbreviations in footnotes, and use the following symbols, in sequence:

  *, †, ‡, §, _, ¶, **, ††, ‡‡, §§, _ _, ¶¶, etc.
- Identify statistical measures of variations, such as standard deviation and standard error of the mean.
- Be sure that each table is cited in the text. If you use data from another published or unpublished source, obtain permission and acknowledge that source fully.

I A. 8 b) Illustrations (Figures)

Figures should be either professionally drawn and photographed, or submitted as photographic-quality digital prints. In addition to requiring a version of the figures suitable for printing, (for example, JPEG / GIF).

- Review the images of such files on a computer screen before submitting them to be sure that they meet their own quality standards. For x-ray films, scans, and other diagnostic images, as well as pictures of pathology specimens or photomicrographs, send sharp, glossy, black-and-white or color photographic prints, usually 127 _ 173 mm (5 _ 7 inches).
- Letters, numbers, and symbols on figures should therefore be clear and consistent throughout, and large enough to remain legible when the figure is reduced for publication.
- Photographs of potentially identifiable people must be accompanied by written permission to use the photograph.
- Figures should be numbered consecutively according to the order in which they have been cited in the text.

- If a figure has been published previously, acknowledge the original source and submit written permission from the copyright holder to reproduce the figure. Permission is required irrespective of authorship or publisher except for documents in the public domain.
- For illustrations in colour, MH Samorita Med Coll J accept coloured illustration when it seems essential. This Journal publish illustrations in colour only if the author pays the additional cost. Authors should consult the editorial board of the journal about requirements for figures submitted in electronic formats.

I A. 8 c) Legends for Illustrations (Figures)

- Type or print the legends for illustrations using double spacing, starting on a separate page, with Arabic numerals corresponding to the illustrations.
- When symbols, arrows, numbers, or letters are used to identify parts of the illustrations, identify and explain each one clearly in the legend. Explain the internal scale and identify the method of staining in photomicrographs.

I A. 9. Units of Measurement

- Measurements of length, height, weight, and volume should be reported in metric units (meter, kilogram, or liter) or their decimal multiples.
- Authors should report laboratory information in both local and International System of Units (SI).
- Drug concentrations may be reported in either SI or mass units, but the alternative should be provided in parentheses where appropriate.

I A. 10. Abbreviations and Symbols

- Use only standard abbreviations; use of nonstandard abbreviations can be confusing to readers.
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Final checklists before you submit your revised article for the possible publication in the MH Samorita Med Coll J.

1. Forwarding/Cover letter and declaration form,
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If you have submitted mentioning document (1, 2, 3) above, when you first submit your article but if there is change in the authorship or related then you have to re-submit it.

- **General outline for article presentation and format**
- Double spacing
- Font size should be 12 in arial
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- Headings in title case (not ALL CAPITALS, not underlined)
- References cited in superscript in the text without brackets after with/without comma (,) or full stop (.)
- References according to the journal's instructions – abide by the rules of Vancouver Style.
- **Language and grammar**
- Uniformity in the language
- Abbreviations spelt out in full for the first time
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- Not more than 200 words for case reports and 250 words for original articles
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- Key words provided – arrange them in alphabetical order should be 3-5 in number.
- **Introduction**
- Word limit 150 -200 words
- Pertinent information only
- **Material and Methods**
- Study Design
- Duration and place of study
- Ethical approval
- Patient consent
- Statistical analysis and software used.
- **Results**
- Clearly present the data
- Avoid data redundancy
- **Discussion**
- Avoid unnecessary explanation of someone else' work unless it is very relevant to the study
- Provide and discuss with the literatures to support the study with references.
- Mention about limitation of the study
- **Conclusion**
- Give your conclusion
- Any recommendation
- **Acknowledgement**
- Acknowledge any person or institution who have helped for the study
- **Reference**
- Abide by the Vancouver style
- Use reference at the end of the sentence after the full stop with superscript
- **Legends**
- Tables
- Figures

Editorial

Bronchiolitis and Anemia

Rouf MA

Bronchiolitis is an acute inflammatory respiratory illness involving the lower respiratory tract occurring in the first 2 years of life.[1]

Bronchiolitis is the leading cause of respiratory distress of small children. Bronchiolitis is mostly (95%) a viral disease. Multiple studies were conducted to identify the etiology of bronchiolitis. Respiratory syncytial virus (RSV), human rhinovirus (hRV) and human bocavirus (hBoV) are the most frequently detected viruses. Respiratory syncytial virus (RSV) is responsible for >50% of cases.[2]

Bronchiolitis is one of the main causes of hospitalization due to respiratory infection in children <2 years of age. According to WHO, nearly 2 million under-5 children die from ARI every year, which is about 19% of all death in this age group. Pneumonia and bronchiolitis are considered the leading contributors to the global burden of ARI in young children and are responsible for death that mostly occurs in the developing world.[3]

The incidence of bronchiolitis is as high as 11 case per 100 children per year of the first 18 month of life. In USA 5 children per 1000 are hospitalized with bronchiolitis per year in first 24 month of age.[4]

A cross sectional study was done in forty-three hospitals of Bangladesh which revealed that among 5157 admitted children, 3484 (67%) had respiratory problems and among them bronchiolitis was 744(21%) and pneumonia 402 (11.5%) respectively.[1]

There are some risk factors for bronchiolitis like non breast feed baby, living in crowded condition, passive smoking, wood burning stove, prematurity, low birth weight, etc.[1]

Diagnosis of bronchiolitis is mostly clinical and treatment is mainly supportive. Treatment includes humidified oxygen inhalation, 3% Nacl solution nebulization and maintenance of hydration with nutrition.

Anemia is identified as a risk factor for lower respiratory tract infection.[5]

Anemia is one of the most common nutritional problems in the world and is associated with increased risk for morbidity and mortality especially, under the 5 years of age and iron deficiency is considered the most common cause of anemia in developing countries.[6]

In developing nations, IDA exceeds 50% and inadequate nutrition is typically blamed for it.

Low hemoglobin (Hb) level impairs tissue oxygenation and acts as an independent risk factor for developing lower respiratory tract infection in children.

The role of iron in immunity is necessary for immune cell proliferation and maturation, particularly lymphocyte associated specific response to infection.Iron deficiency anemia in children occurs most frequently between 6 months to 3 years of age.[7]

In a study, it was found that patient with Hb level less than 10 gm/dl had 10 times higher risk of severe acute bronchiolitis than with normal Hb levels. The patients with lower Hb level also had a longer hospital stay. There is a significant negative correlation between severity of acute bronchiolitis and Hb level.[8] A hemoglobin level under 10 g/dl on admission was associated with a higher use of continuous positive airway pressure as well as a longer duration of respiratory support.

As anemia and bronchiolitis is common in our country, so Iron supplementation can be used as an indirect measures for the reduction of acute bronchiolitis thereby decreasing the under-5 morbidities and mortality in Bangladesh.

(MH Samorita Med Coll J 2024; 7(1): 1-2)

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Consumer Experiences of Health Care Services Delivery System of Bangladesh

Ikbal SH[1], Sumi TA[2], Acharjee SC[3]

Abstract:

Introduction: *Patient satisfaction with health care services is viewed as an important factor in explaining patients' perceptions of quality health care. It is becoming increasingly important for determining the success of health care service and institutional survival, let alone prosperity. This study spot light on the issue that the development of health sector is one of the pinnacle goals of Millennium Development Goals (MDGs). Like all other UN nations, the government of Bangladesh has taken necessary Step in conformity with acquiring the MDGs.*

Materials & Methods: *In this descriptive cross-sectional study, 199 adults from three renowned, Upazilla health complexes at Nagorpur Tangail, Delduar Tangail and Keraniganj, Dhaka were selected purposefully and data were collected using pretested semi-structured questionnaire that included sociodemographic details as well as information on sleep patterns and social media usage. The data were compiled and organized manually on a master sheet according to key variables, then analysed using a computer and presented with tables and diagrams.*

Results: *While describing the socio-demographic characteristics of the respondents we can see that 59.3% (118) were house wife, 13.06% (26) were in other occupation, 12.07% (24) were service holder. The monthly income of the respondent reveals that 48.74% (97) had an income of 5000-15000Tk. Most of the respondents (62.81%) got "very good" behavior from the health care provider and that the cost of health care service, among 199 respondents 84.92% thought that the health care service was bearable for them. Out of 199 respondents majority (51.25%) were expecting a better health care services, 14.07% were satisfied and only 12.06% were not satisfied at all.*

Conclusion: *In Bangladesh, consumer experiences with the health care delivery system highlight challenges such as limited access to quality services, long waiting times, and inconsistent treatment standards, especially in rural areas. Despite some progress in expanding facilities and services, systemic inefficiencies and resource shortages persist. Addressing these issues require sustained investment in infrastructure, workforce development, and regulatory oversight to improve overall patient satisfaction and health outcomes.*

Key words: *Health care, health care services, consumer experience*

(MH Samorita Med Coll J 2024; 7(1): 3-7)

Introduction:

Patient satisfaction with health care services is viewed as an important factor in explaining patients' perceptions of quality health care. It is becoming increasingly important for determining the success of health care service and institutional survival, let alone prosperity. Although research on patient satisfaction regarding health care has become standard in many developed or developing country, in countries such as Bangladesh the importance of patient's perspectives in assessing quality of health care is still relatively ignored. The development of health sector is one of the pinnacle goals of Millennium Development Goals (MDGs). Like all

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other UN nations, the government of Bangladesh has taken necessary step in conformity with acquired the MDGs. Following the Government footstep, different local, national and international NGOs are also working here for implementing MDGs and developing the health status of the people. Accordingly, Bangladesh has achieved noteworthy progresses in the health status of the population by achieving MDG 4 by reducing child death before the 2015 target, and rapidly improving on other key indicators such as maternal death, immunization coverage, and survival from some infectious diseases including malaria, tuberculosis, and diarrhoea[1]. The country has been working towards a fully digitalized health information system. In recognition of its endeavours, Bangladesh acquired the 2011 United Nations "Digital Health for Digital Development" award for outstanding contributions to the use of information and communications technology (ICT) for health and nutrition. Over the 53 years after independence, the health system of Bangladesh has gone through a number of reforms and established an extensive health infrastructure in the public and private sectors[2]. Bangladesh has a mixed health care system that includes government, private, nongovernmental organizations (NGOs) and donor agencies. The country has developed an institutional network for providing health care which has been operated through the following tiers: primary health care (Upazilla Health Complex, Union Sub Center & Community Clinics), secondary health care (District Hospitals), tertiary health care (Medical College Hospitals), and super specialized care (specialized institutions)[3,4]. The Government of Bangladesh (GOB) has taken initiatives to provide primary health care at the door step of grass root people through establishing Community Health Clinic (CHC) at the village level and Union Health and Family Welfare Centre (UHFWC) at the union level, specialized postgraduate hospitals are available only at the divisional level[5].In Bangladesh, people of different social classes take treatment from different health providers like public, private & NGO-based hospitals for different reasons. Economic condition, health knowledge, socio-demographic determinants and cultural practices may influence people to choose the health care service providers. Over the years the country has achieved impressive progress in enhancing primary health care services and health status of its population (WHO, 2015). Bangladesh has achieved exquisite improvement in childhood vaccination coverage, which is vital to reduce infant and child morbidity and mortality.[6,7,8,9] Under the government's Expanded Program for Immunization (EPI), children below one year of age receive immunization for six vaccine preventable diseases such as tuberculosis; diphtheria, pertussis, and tetanus (DPT); poliomyelitis; and measles. This EPI program takes in Bangladesh one step forward toward the attainment of MDGs. In 2010, the United Nations recognized Bangladesh for its outstanding progress towards MDG 4 (to reduce child mortality) and 5a (to reduce maternal mortality) in the face of many socio-economic hindrances. [10,11] Between 1990 and 2011, under 5 mortality decreased from 151/1000 to 53/1000 live births (LBs). The infant mortality rate fell less rapidly from 87/1000 to 43/1000 LBs over the last 18 years. Between 1990 and 2010, maternal mortality in Bangladesh decreased from 574/100 000 to 194/100 000 LBs. The decline is associated with a reduced total fertility rate (from 5 births per woman in 1990, to 2 in 2011) and with increased skilled delivery attendance (from 5% in 1991 to 32% in 2011).[12]

Materials & Methods:

It was a descriptive type of cross-sectional study. The study was conducted from May 2022 to October 2022.The study was conducted in three Upazilla health complexes eg. Nagorpur Tangail, Delduar Tangail and Keraniganj, Dhaka. Study population were both male and female respondents who were available on the spot. Sample size was 199 as per the availability of the respondents. Non-probability sampling technique was followed. A semi-structured pretested questionnaire was developed. It was prepared on the basis of research questions and objectives of the study by using selected variables. The semi-structured questionnaire was pre-tested on small numbers of study population prior to data collection to evaluate the reliability of the instrument. Data were collected by face-to-face interview of respondents using semi-structured questionnaire, following introductory conversation and obtaining consent from them. After completion of data collection all the data had been checked and verified for its consistency. Data were analyzed by using computers and presented on different methods which include tables and diagrams. All the information had been kept confidential and used for

research purposes only. Privacy of the respondents was maintained strictly.

Result:

While describing the socio-demographic characteristics of the respondents we can see that 59.3% (118) were house wife, 13.06% (26) were in other occupation,12.07% (24) were service holder, 7.04% (14) had their own business and only 8.6% (17) were student. The monthly income of the respondent reveals that 48.74% (97) had an income of 5000-15000Tk, 35.18% (70) had an income of 15000-25000 Tk, 9.05% (18) had an income of 25000-35000 Tk, 5.53% (11) had an income of 35000-50000 Tk, 1.51% (3) had an income of more than 50000. Regarding marital status of the respondent 86.94% (173) were married, 8.54% (17) were unmarried and only4.52% (9) were widow. About type of family among the respondents 51.76% (103) had nuclear family and 48.24% (96) had joint family. Regarding type of house of the respondents. 75.88% (151) lived in kachha house and only 24.12 % (48) in pacca house.(Table-1)

Table-1: Distribution of the respondents according to the socio-demographic characteristics.

Socio-demographic Variables	Category	Frequency	Percentage
Age(years)	18-28	32	16.8
	29-39	68	34.17
	40-58	58	29.14
	>58	41	20.60
Sex	Male	69	34.67
	Female	130	65.32
Occupation	Service holder	24	12.07%
	Business	14	7.04%
	Student	17	8.6%
	House wife	118	59.3%
	Others	26	13.06%
Monthly Income (taka)	5000-15000	97	48.74%
	15000-25000	70	35.18%
	25000-35000	18	9.05%
	35000-50000	11	5.53%
	>50000	3	1.51%
Marital Status	Married	173	86.94%
	Unmarried	17	8.54%
	Widow	9	4.52%
Types of family	Nuclear	103	51.24%
	Jont family	96	48.24%
Type of house	Kaccha	151	75.88%
	Pacca	48	24.15%

Table 2: Distribution of the respondents according to the behavior of health care provider

Behavior of the health care provider	Frequency	Percentage
Very Good	125	62.81
Very Bad	2	1.005
Fair	70	35.18
Unacceptable	2	1.005
Total	199	100

Table 2 shows that, most of the respondents 125 (62.81%) got "very good" behavior from the health care provider. 70 (35.18%) has shown that they have got "fair" behavior from the health care provider whereas, few of them stated that they have got "very bad" behavior 2 (1.005%) and "unacceptable" behavior (1.005%) from the health care providers.

Table 3: Distribution of the respondents according to their health care service cost.

Cost of receiving health care	Frequency	Percentage
Bearable	169	84.92%
Unbearable	9	4.52%
Out of capacity	3	1.51%
Fair	18	9.05%
Availability of free health service		
Yes	145	72.86%
No	54	27.14%

According to Table- 3, it shows that the cost of health care service, among 199 respondents, 84.92% thought that the health care service was bearable for them, for 4.52% it was unbearable and for only 1.51% of people it was out of capacity. It was fair for 9.05% people. While making observation on availability of free service to people, we found that majority of people (72.86%) thought free services were available and only 27.14% thought free services were not available

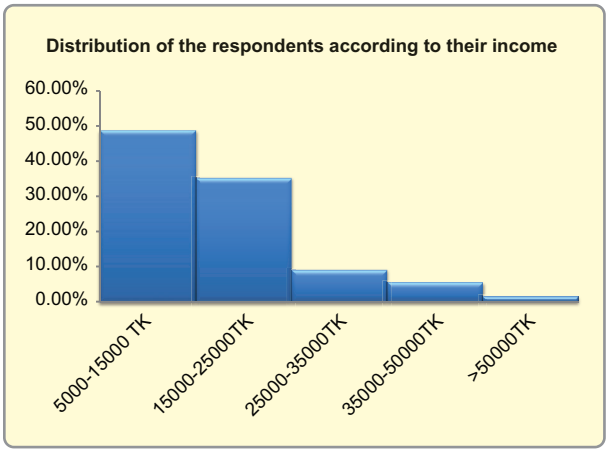

Figure-1: *Distribution of the Respondents according to their Income*

Figure-1 shows that out of 199 respondents, 48.74% (97) had an income between 5000-15000Tk, 35.18% (70) had an income between 15000-25000Tk, 9.05% (18) had an income between 25000-35000Tk, 5.53% (11) had an income of 35000-50000Tk and only 1.50% (3) had an income of more than 50000Tk

Table-4: distribution of the respondents according to the overall satisfaction of their current health care delivery system.

Category	Number	Percentage
Satisfied	28	14.07%
Partially satisfied	45	22.61%
Expecting better care	102	51.25%
Not satisfied	24	12.06%
Total	199	

Table-4 shows that out of 199 respondents majority 51.25% were expecting a better health care services, about 22.61% were partially satisfied with the current health care delivery system, 14.07% were satisfied and only 12.06% were not satisfied at all.

Discussion:

Patient satisfaction is considered one of the important quality indicators at the healthcare centers. It reflects whether healthcare organizations have ability to fulfill patient's needs and expectations. In Bangladesh, however, patients' satisfaction with health care services is as yet overlooked. We don't contend that health care organizations are not wishing to provide quality health care services to their clients. Here the relationship between health-care providing organizations and care-seeker or doctor-patient relationship is remained on an asymmetrical relationship. Health-care providing organizations seldom ask patients about their demands, expectations or whether they were satisfied with the services being provided to them. Many doctors might try to a large extent to limit their involvement with the patient, it is in the patient's interest to enlist their unconditional surrender and particularistic support as much as possible to the doctor and health-care giving organization. As a result, quality of care only mirrors the providers' perspective rather than the patients' one. What's more, of course, a large number of patients who take treatment from government hospitals are either illiterate or educated up to primary level. These patients have limited or lacking knowledge of opportunities, standards or expectations of service quality. Moreover, frail referral system, limited or no long-term and continuous doctor-patient relationship, and lacking feedback and tracking systems are some of the major limitations in the health care system of Bangladesh, in spite of the fact that these are considered as basic for giving quality health care in the diagnosis and treatment of diseases. In the current study respondents were expecting a better behavior quality from the health care provider and the findings were 62.81% got "very good" behavior from the health care provider. It also shows that they have got "fair" behavior from the health care provider whereas, few of them stated that they have got "very bad" behavior (1.005%) and "unacceptable" behavior (1.005%) from the health care providers. In a study in India only 14% of the respondents were satisfied with their current health care delivery system and a major portion 66% were partially satisfied.[13] The cost of our health care services in Bangladesh was bearable for them. For 4.52% it was unbearable and for only 1.51% of people it was out of capacity. It is fair for 9.05% people making observation on availability of free service to people, we found that majority of people (72.86%) thought free services are available and only 27.14% thought free services are not available. In another study in India the cost were reasonable for 30% of consumers but majority revealed that the cost were unbearable for them[14]

Conclusion:

The private health care sector (including unqualified providers) also deserves close scrutiny as about 70% of the patients seek medical care from this sector (World Bank 2003). Some of its main drawbacks include disregard of standard treatment protocols, lack of qualified nurses and unnecessary diagnostic tests. A good number of posts are lying vacant at Upazilla and below levels. Rural facilities need more budget to meet local needs. Most of the time, providers are busy with other activities, including private business. Unavailability of drugs is the single most important reason for people's dissatisfaction about public health facilities. These instances reflect the problems of the health service delivery system that must be quickly and responsibly addressed. With the quality of services showing little signs of improvement, a large number of Bangladeshi patients who are able to afford it are going to foreign hospitals, despite the financial costs and the cumbersome processes involved in getting visas, obtaining foreign exchange, arranging for transportation, accommodation and food, and finding the right service providers.

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A Comparative Study of Glycosylated Hemoglobin and Plasma Glucose for Monitoring of Glycemic Control in Type 2 Diabetes Mellitus

Momin MA[1], Barua S[2], Ansari MAJ[3], Roy NC[4], Rahman A[5], Barua RR[6], Rahman N[7], Monira S[8], Afroz R[9], Barua S[10]

Abstract

Introduction: *Type 2 Diabetes Mellitus is a major global health concern with significant morbidity, mortality, and economic burden. Poor glycemic control is a leading risk factor for diabetes-related complications, necessitating regular monitoring of glycemic status. While HbA1c is the standard measure of long-term glycemia, more evidence is needed to assess the combined effectiveness of plasma glucose and glycosylated hemoglobin in evaluating glycemic control.*

Objectives: *This study aimed to assess the correlation between plasma glucose and glycosylated hemoglobin levels and analyze glycemic control patterns in diabetic patients.*

Materials &Methods: *A cross-sectional observational study was conducted from May to October 2017 at Ibn Sina Medical College Hospital, Dhaka, Bangladesh, with 100 participants. Clinical data, history, and laboratory investigations were collected and analyzed using SPSS-23.*

Results: *The study revealed that 52% of patients had very poor glycemic control, and 54% had chronic complications. Despite variations in Fasting Plasma Glucose levels, a significant proportion had elevated HbA1c, reinforcing its role in glycemic assessment. A strong correlation was observed between glycosylated hemoglobin and plasma glucose levels.*

Conclusion: *Poor glycemic control is prevalent among diabetic patients, leading to increased complications. Combining HbA1c and FPG provides a more accurate assessment of glycemic status and treatment effectiveness, emphasizing the need for routine monitoring to improve diabetes management and outcomes.*

Key Words: *Diabetes mellitus, FBS, HbA1c*

(MH Samorita Med Coll J 2024; 7(1): 8-14)

Introduction:

Diabetes Mellitus has become a modern global epidemic. The dramatic worlwide increases in the prevalance of type 2 diabetes mellitus is posing a massive health problem in both developed and developing countries.[1]According to World Health Organization(WHO), 422 million people are suffering from Diabetes Mellitus in 2014. The global

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prevalance of Diabetes Mellitus among adults over 18 years of age has risen from 4.7% in 1980 to 8.5% in 2014 and rising more rapidly in middle and low income countries. In 2012, 3.7 million deaths were caused by diabetes.[2] WHO projects that , diabetes will be the 7th leading cause of death in 2030.[3] The Asian –Indian phenotype is more prone to DM than the rest of the world.[4] Over time , diabetes can damage the heart,blood vessels, eyes, kidneys and nerves.Adults with diabetes have 2-3 fold increased risk of heart attacks and strokes.[5]Diabetic retinopathy is an important cause of blindness and 2.6% of global blindness can be attributed to diabetes.[6] Diabetes is among the leading cause of kidney failure.[7]There is a need for mass awareness and screening programs to identify and overcome the burden due to diabetes. It is necessary to determine simple and cost-effective methods for identifying of undiagnosed diabetes. Good glycemic control is also essential for preventing complications.[8,9] According to WHO, estimation of fasting blood glucose is highly effective. But measuremeant of FPG provides short term picture of control. When plasma glucose is consistently elevated, there is an increase in non enzymatic glycosylation of hemoglobin and this alteration reflects glycemic history over the past 2-3 months as red blood cells have a life span of 120 days. To improve patient's compliance with testing, use of glycosylated hemoglobin level to assess diabetic control has been suggested.[10]Glycated hemoglobin provides an accurate and objectives measures of glycemic control integrated over a period of weeks to months.[11]Normal level of glucose produce a normal amount of glycosylated hemoglobin. As the average amount of glucose increases , the fraction of glycated hemoglobin increases in a predictable way.This serves as a marker for average blood glucose levels prior to measurement.[12]Targets for HbA1c in clinical practice are recommended by official organizations and these guidelines generally suggest either <6.5% or <7% with a number of caveats. Intensive glycemic control significantly decreased rates of microvascular and neuropathic complicatios in patients with type 2 diabetes mellitus. Therefore , achieving HbA1c targets of <7% has been shown to reduce microvascular complications. There is only a minor difference in risk status between long term control of 6% to 7%, but the indiviualization of targets can make a considerable diiference.[13-15]It has been suggested ,for example, that in elderly patient with multiple comorbid conditions, strict glycemic control has little benefit.[16] It also makes clinical sense to relax glycemic control for people with a hypoglycemic unawareness, history of severe hypoglycemia, limited life expectancy , advanced microvascular complications. A younger, more stable with diabetes and good self care , on the other hand , may be able to achieve even better glycemic control. So hemglobin A1c goal should be indiviualized.[17] Glycosylated hemoglobin is the generally accepted best measures of glycemia over the prior 3 months. While there have always been and continued to be many ways to assess glycemia, but glycosylated hemoglobin is unquestionably the best available method. The occasional laboratory blood glucose may be the most frequently used of these monitoring tools and may be reasonably reflective of mean glycemia in stable diabetes mellitus, but it is true measure only of blood glucose at that moment in time.[18-21] All micro and macro vascular complications develop in long standing hyperglycemia. If Glycosylated hemoglobin is within the target range, clinicians have a reliable impression that therapy is working appropriately and adequately, and the risk of at least micro vascular complications is reduced. So, the present study is undertaken to determine the cost effective, simple method for monitoring of blood glucose and to identify the patterns of glycemic control using glycosylated hemoglobin in type 2 diabetic patients. The Correlation between levels of glycosylated hemoglobin and plasma glucose was studied.

Materials and Methods:

Study Design and Setting: This cross-sectional study was conducted at the Department of Medicine Ibn Sina Medical College Hospital (ISMCH), Dhaka from May 2017 to October 2017. Ethical approval was obtained from the Ibn Sina Medical College Dhaka Ethical Committee.

Subjects: A total of 100 consecutive type 2 diabetes mellitus (T2DM) patients attending the outpatient department were recruited. The group included 62 males and 38 females. Informed written consent was obtained from all participants.

Inclusion Criteria: Diagnosed with T2DM for at least 3 months before participation, confirmed by history, medical records, and laboratory examinations

according to the 2017 American Diabetes Association (ADA) guidelines.

Data Collection: A structured data collection form was developed to capture demographics, lifestyle habits, clinical findings, and laboratory results. A pilot test ensured the form's effectiveness. Each participant's medical history was reviewed to confirm the T2DM diagnosis.

Laboratory Tests: Oral glucose tolerance test (OGTT) and HbA1c were performed at Ibn Sina Medical College Hospital (ISMCH), BIRDEM, or BSMMU laboratories. Blood samples were collected under aseptic conditions: Venous blood (10 ml) was drawn by venipuncture. One sample was collected in an EDTA vial for HbA1c measurement. Another sample was collected in a plain vial, allowed to clot, centrifuged to separate serum, and used for fasting blood glucose and serum creatinine tests. Blood glucose was measured using the glucose oxidase-peroxidase method. HbA1c was estimated by the ion-exchange resin method. Body mass index (BMI) was calculated (weight [kg] / height [m^2]). BMI categories were defined as: Overweight: 23.0-24.9 kg/m^2, Pre-obese: 25.0-29.9 kg/m^2, Obese: ≥30 kg/m^2, morbidly obese: ≥40 kg/m^2. Blood pressure was measured twice after a 5-minute rest, and the average was recorded.

Data Management and Analysis:

All data from interviews, clinical examinations, and laboratory investigations were recorded in the data collection forms. Data were entered into SPSS version 23 after ensuring the completeness of each form. Descriptive statistics were used: Mean ± standard deviation (SD) for continuous variables. Absolute numbers and percentages for categorical variables. Student's t-test was used for significance testing, with $p < 0.05$ considered statistically significant.

Results:

Total 100 patients of type 2 DM were recruited in this study. Table 1 shows age of the study patients, it was observed that more than one third (35.0%) patients belonged to age 51-60 years. The mean age was found 59.45±10.69 years with range from 30 to 80 years. Regarding sex of the study patients, it was observed that almost two third (62.0%) patients were male, and 38(38.0%) patients were female. Male female ratio was 1.6:1. It also shows duration of diabetes of the study patients; it was observed that 46(46.0%) patients were found in 0-5 years of duration after diagnosis and second most were within 6-10 years of duration. More than 15 years diabetic patient was 9%. Majority of patients were hypertensive 83(83.0%), 68(68.0%) patients had dyslipidemia, IHD, stroke, obesity and no co-morbidity was found 30(30.0%), 22(22.0%), 34(34.0%) & 6(6.0%) respectively. It was observed that 64(64.0%) patients were found that they had no experience of suffering from acute complications while 31(31.0%) suffered from hypoglycemia, 3% from HHS and 2% from DKA and 46(46.0%) patients has no chronic complications while neuropathy, retinopathy, nephropathy, stroke, CAD, diabetic foot were 28(28.0%), 22(22.0%), 29(29.0%), 22(22.0%), 15(15.0%),4(4.0%) respectively.

Table 1:Sampe Characteristics:

Mean Age(years)	59.45±10.69	
Gender		
Male:Female	1.6:1	
Duration of diabetes	Number of patients	Percentage
0-5 years	46	46.0
6-10 years	28	28.0
11-15 years	17	17.0
>15 years	9	9.0
Co-morbidity		
Hypertension	83	83
Ischemic Heart Disease	30	30
Dyslipidaemia	68	68
Stroke	22	22
Obesity	34	34
Complication		
Hypoglycemia	31	31
Hypertonic Hyperosmolar State	3	3
Diabetic Keto Acidosis	2	2
Neuropathy	28	28
Retinopathy	22	22
Nephropathy	29	29
Stroke	22	22
Coronary artery disease	15	15
Diabetic foot	4	4

Table 2: Distribution of the study patients according to types of drugs taken for diabetes (n=100)

Types of drugs	Number of patients	Percentage
Oral	49	49.0
Injectable	14	14.0
Combinations (Oral + Injectable)	36	36.0
Lifestyle modifications(currently)	1	1.0

Table 2 shows according to types of anti-diabetic drugs of the study patients, it was observed that majority of patients took oral anti-diabetic drugs that is 49(49.0%)

Table 3: Distribution of the study patients according to HbA1c(n=100)

HbA1c	Number of patients	Percentage
Good (<6.5)	6	9.0
Average (6.5-7.0)	21	21.0
Poor (7.1-8.0)	21	21.0
Very poor (>8.0)	52	52.0

Table 3 shows according to HbA1c of the study patients, it was observed that 52(52.0%) patients were found very poor glycemic control, 21(21.0%), 21(21.0%) and 6(6.0%) having poor, average and good glycemic control respectively.

Table 4: Distribution of the study patients according to pattern of glycemic control (n=100)

FBS(mmol/l)	HbA1c(%)								Total (%)
	<6.0	6.1-7.0	7.1-8.0	8.1-9.0	9.1-10.0	10.1-11.0	11.1-12.0	>12.0	
<7.0	1	23	5	1	4	0	0	0	34
7.1-8.0	0	8	0	1	0	0	0	0	9
8.1-9.0	0	0	5	4	2	1	0	0	12
9.1-10.0	0	0	1	5	2	0	0	0	8
10.1-11.0	0	0	2	4	0	1	0	0	7
11.0-12.0	0	0	0	1	1	0	0	0	2
>12.0	0	0	2	5	7	3	3	8	28
Total	1	31	15	21	16	5	3	8	100

Table 5: Mean FBS and PPBG of different group according to duration of diabetes (n=100)

Duration of Diabetes	Mean FBS	Mean PPBG	Percentage (%)
0-5 years	10.03	12.62	46.0
6-10 years	11.43	13.3	28.0
11-15 years	12.07	14.6	17.0
>15 years	11.03	12.7	9.0

Table 6: Mean RBS and HbA1c of different group according to duration of diabetes (n=100)

Duration of Diabetes	Mean RBS	Mean HbA1c	Percentage (%)
0-5 years	11.30	8.30	46.0
6-10 years	12.5	8.47	28.0
11-15 years	13.07	8.87	17.0
>15yrs	13.5	9.02	9.0

Table 5 shows according to mean FBS and PPBG of the study patients, it was observed that majority of patients 46(46.0%) were diabetic for 0-5 years whom mean FPG were 10.03 mmol/l and mean PPBG 12.62 followed by 28% belonged to 6-10 yrs old diabetes having mean FPG 11.43 and mean PPBG 13.3.

Table 6 shows according to mean RBS and HbA1c of the study patients, it was observed that majority of patients 46(46.0%) were diabetic for 0-5 years whom mean RBS were 11.30 mmol/l and mean HbA1c 8.30 followed by 28% belonged to 6-10 years old diabetes having mean RBS 12.5 and mean HbA1c 8.47.

Discussion

In the present study, it was observed that more than one-third (35.0%) of the patients belonged to the age group of 51-60 years. The mean age was found to be 59.45±10.69 years, with a range from 30 to 80 years. Among them, 62% were male, and 38% were female. A study by Masum et al. reported a mean patient age of 56.51±13.86 years. Grover et al. found that the mean age of their study population was 42.8 years (range: 20–50 years). Similarly, a study by Dietrich Rothenbacher et al. reported a mean age of 67.3±9.3 years, with women constituting 52.6% of the sample, and 71% of the population being married.[22-24] The majority of the patients in the current study were male (62.0%). Women in this study were more likely to have poor glycemic control compared to men. The mean HbA1c level was found to be 8.48% for males and 8.58% for females. Two previous studies have shown that women experience more adverse effects on lipid profiles than men.[25,26] Estrogen-related protective mechanisms may also be affected by diabetes.[26] The decrease in estrogen's protective effects on body fat distribution and insulin action in women contributes to this phenomenon. [27]Similarly, the current study showed a significant difference between males and females in terms of glycemic control. In this study, it was observed that the majority (49%) of the population was treated with only oral anti-diabetic agents, while 14% used injectable drugs. The remaining 36% were treated with a combination of oral and injectable anti-diabetic drugs. Hypertension was one of the most frequent comorbidities among type 2 diabetes mellitus (DM) patients, with 83% of participants being hypertensive.[28] A study by Benoit et al. also found that the majority of their diabetic patients were hypertensive.[29] This finding may be attributed to insulin resistance. Type 2 DM is associated with insulin resistance, which leads to hyperinsulinemia. This hyperinsulinemia has two important effects: increased sympathetic nervous system (SNS) activity and increased sodium retention through the kidneys. The cumulative effect of these processes is elevated blood pressure. Many other studies have demonstrated that an increased duration of diabetes is associated with poor glycemic control.[30-31] Furthermore, diabetes significantly impacts the atherosclerotic process in blood vessels, leading to hypertension. As the duration of type 2 DM increases, the atherosclerotic process becomes more prominent. This explains why the majority of diabetic patients also have hypertension along with poor glycemic control.[32] Among the study subjects, 31% had an HbA1c level between 6.1-7.0%, 15% had values between 7.1-8.0%, 21% between 8.1-9.0%, and 16% between 9.1-10.0%. Only 1% of the participants had an HbA1c level below 6.0%. Additionally, 5% had values between 10.1-11.0%, and 3% had levels between 11.1-12.0%. Eight percent of participants had an HbA1c level higher than 12%. Regarding fasting plasma glucose (FPG) levels, 28% of the population had values above 12.0 mmol/L, 9% had levels between 7.1-8.0 mmol/L, and 12%, 8%, 7%, and 2% had values within the ranges of 8.1-9.0 mmol/L, 9.1-10.0 mmol/L, 10.1-11.0 mmol/L, and 11.1-12.0 mmol/L, respectively. Meanwhile, 34% of individuals had normal FPG levels.A correlation between FPG and HbA1c was also studied. Regardless of FPG levels, 31% of patients had HbA1c levels between 6.1-7.0%, 15% between 7.1-8.0%, 21% between 8.1-9.0%, and 16% between 9.1-10.0%. HbA1c reflects the average plasma glucose over the previous three months. It can be measured at any time of the day and does not require special preparation, such as fasting. Knowledge of glycemic status helps individuals maintain their blood glucose levels within a normal range. Glycosylated hemoglobin is not only an important diagnostic tool but also an effective marker indicating the need for acute intervention.[33] The relationship between HbA1c and plasma glucose is complex. Many studies have shown that HbA1c serves as an index of mean plasma glucose over the preceding weeks to months, given that the average lifespan of erythrocytes is 120 days. Once glycosylation occurs, HbA1c levels remain stable and are unaffected by diet, insulin, hypoglycemic drugs, or exercise on the day of testing, unlike blood glucose estimations. By cross-tabulating glycosylated

hemoglobin and FPG, the patterns of glycemic control among patients were analyzed. It was observed that some patients had FPG levels below the diagnostic threshold (<7 mmol/L), yet their HbA1c levels were well above the normal range. This suggests that FPG alone is not sufficient for diagnosing diabetes, as it may yield false results. A possible explanation is that patients may alter their activities or diet the night before the test or experience anxiety or nervousness, leading to an abnormal rise in blood glucose levels. The significance of HbA1c lies in its ability to provide a retrospective overview of glycemic control over the past 2-3 months.Studies conducted in the United States by Davidson et al. have provided cutoff values for FPG in relation to glycosylated hemoglobin and have emphasized the importance of glycosylation.[34] Our findings align with their observations, reinforcing that glycosylated hemoglobin, along with FPG, is a more reliable diagnostic tool for diabetes. Another study demonstrated that HbA1c alone, in the absence of FPG, has poor sensitivity and specificity.[35]

Conclusion:

This study highlights the high prevalence of poor glycemic control among diabetic patients, leading to increased morbidity and mortality. Medical practitioners should consider key factors in diabetes care to improve glycemic control and prevent complications. The findings suggest that HbA1c, along with FPG, provides a more comprehensive assessment of glycemic control. Regular monitoring of HbA1c levels is essential for evaluating treatment efficacy and making necessary adjustments to diabetes management.

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Distribution of Risk Factors of Hypertension among the Patients Attending a Secondary Hospital

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Abstract

Introduction: *Hypertension is a major risk factor for cardiovascular diseases and the prevalence of hypertension in Bangladesh is increasing. The risk for hypertension in rural area is increasing with the change in socio-economic conditions, lifestyle and dietary behavior. The objective of this study was to show distribution of risk factors of hypertension in a selected secondary care level hospital of Bangladesh.*

Materials & Methods: *The study was a descriptive type of cross-sectional study. Study place was 250 bedded Mohammad Ali Hospital, Bogura Sadar, Bagura. Sample was both newly and previously diagnosed hypertensive patients of age >20 years at medicine outdoor and indoor of this hospital and that was selected by convenience sampling method. A total 364 hypertensive patients were interviewed and asked about their socio-economic conditions, red meat and extra salt consumption, family history and tobacco use. SPSS was used for data analysis. Univariate and bivariate analysis were carried out.*

Results: *Among the 364 patients, 59.07% were male and 40.93% were female. Majority portion of the patients (49.18%) were > 40 years of age and the mean was 42.26 years (SD ±12.17 years). 43.96% patient were illiterate and had education of SSC or below (46.15%). The study revealed that the highest portion of hypertensive patients (31.04%) were housewife. In this study 78.85% of the patients had normal BMI and only 11.81% were overweight and 2.47% were obese. In case of sleeping condition, 16.48% of the patients had poor sleep at night, 82.14% did not perform daily exercise, 84.62% took red meats, 70.05% consumed extra salt, 33.34% had other medical disorders and 51.1% had other hypertensive patients in family. Nearly one-fourth (25.55%) of the patients were found smokers,0.82% showed drinking alcohol and 3.57% used other form of tobacco. Statistically significant ($p<0.05$) difference was found between male and female in terms of sleeping nature (poor sleeping condition: 20.93% vs 10.07%) and smoking (40.93% vs 3.36%).*

Conclusion: *In this study smoking habit in male respondents, lack of physical activities, consumption of red meats, taking extra salt in meal, DM, increasing age these risk factors took a significant percentage among the respondents which must be controlled. So, better health management and regular checkup is recommended and daily physical activity should be suggested. Also, restriction is needed for taking red meats, extra salt consumption and use of tobacco.*

Keywords: *Distribution, Risk factors, Hypertension, Secondary care hospital.*

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Introduction

Hypertension, also known as high or raised blood pressure, is a condition in which the blood vessels have persistently raised pressure. Blood is carried from the heart to all parts of the body in the vessels. Each time the heart beats, it pumps blood into the

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vessels. Blood pressure is created by the force of blood pushing against the walls of blood vessels (arteries) as it is pumped by the heart. The higher the pressure, the harder the heart has to pump[1]. The global disease burden has been shifted from communicable diseases to non-communicable diseases between 1990 to 2010 and hypertension has become one of the most common non-communicable disease[2]. Globally, one-third annual deaths are occurred due to cardiovascular diseases which is 17 million and of these deaths 53% are related to complications of hypertension[3,4,5]. In 2002, globally 600 million people were afflicted with hypertension[6].

Hypertension is also related to some several fatal conditions. Hypertension is considered as a 'silent killer', since usually it has no symptoms[7]. It is responsible for the development of stroke, heart failure, coronary artery disease, peripheral vascular disease and atrial fibrillation[8]. Long time effect of untreated hypertension can lead to dementia, kidney failure and cognitive decline[9,10]. Moreover, elevated blood pressure is also considered as an indicator for other non-communicable diseases' risks factor such as glucose intolerance, increasing body weight, metabolic syndrome and dyslipidemia[11]. These factors are not constraint to a certain place, rather these factors can vary from one country to another country, between urban and rural regions as well[12]. Factors which are responsible for the increase in prevalence of hypertension are population growth, ageing of the population, family history of hypertension, gender, ethnicity, low physical activity, excess salt intake, overweight or obesity, harmful use of alcohol, smoking habits, smokeless tobacco habits and poor diet[2,3,13].

High blood pressure was the fourth leading risk factors to Global Burden of Diseases (GBD) in 1990 and in 2010 it became the leading risk factors[14]. It has been projected that about one out of four adults have hypertension around the world and the prevalence of 26% in 2000, will increase to 29.2% in 2025[5]. A recent report from Lancet review showed that 23 countries of the world account for 80% of the total burden of chronic disease mortality[15]. In 2015, an estimation found 900 million in the world who are 25 years or older, diagnosed with hypertension[16]. Moreover, according to a report from World Health Organization (WHO), 49% of ischemic heart diseases and 62% of cerebrovascular diseases are occurred by suboptimal blood pressure[17]. Developed countries like USA, the prevalence of prehypertension fluctuates between 31%[18] to 48.2%[19]. Neighboring countries like India, the prevalence ranged from 32% to 44%[20,21] and in China the prevalence of hypertensive people is 21.9%[22]. As a result of rapid urbanization, unhealthy diet, increased life expectancy and lifestyle changes, in South-East Asia including Bangladesh hypertension and Cardiovascular diseases (CVDs) have increased in recent years.[23,24]. In 2010, an estimation among adult from the Bangladesh non-communicable disease risk factor survey found prevalence between 16-20%[25]. Also, the Bangladesh health, nutrition and demographic survey in 2011 found prevalence of 34% among adults[26]. Furthermore, between 1995 and 2010 a meta-analysis studies found the pooled prevalence of hypertension to be 13.7% and the increasing trends and higher rate found in urban than rural area[27].

Bangladesh being a low- and middle-income country, experiencing an epidemiological transition from communicable diseases to non-communicable diseases[28]. Behind this transition some factors are contributing. Factors- including changes from traditional diet to processed and fast food, congested living conditions, increasing trends of sedentary lifestyle, improved socio-economic conditions and absence of physical movement due to rapid unplanned urbanization contribute to the increasing trends of hypertension in Bangladesh[29]. In Bangladesh, about 85% of total population lives in rural areas[30]. Risk factors for hypertension can vary between areas based on different socio-economic conditions, lifestyle and dietary behaviors. Hence, this study aimed to show distribution of risk factors of hypertension among the respondents attending in a secondary hospital in Bangladesh.

Materials and Methods

The study design was descriptive cross-sectional study. Study period was from January, 2020 to December, 2020. 250 bedded Mohammad Ali Hospital, Bogura Sadar, Bogura was the study place. Study Population were Previously and newly diagnosed hypertensive male and female patients aged > 20 years from medicine outdoor and indoor of the selected 250 bedded Mohammad Ali Hospital, Bogura excluding seriously ill patients. Total sample size was 364.

The secondary level hospital and the hypertensive patients were selected by convenience sampling method. Data were collected by Semi-structured

interviewer administered questionnaire and checklist.

All data were recorded, entered, checked and scrutinized and finally analyzed by using Computer Software Statistical Package for Social Science (SPSS) and appropriate statistical test as applicable. Chi-square test was used to find out association between male and female where significance level was considered less than 0.05 (p value).

Results

A total 364 hypertensive respondents of more than 20 years of age were interviewed. Among them 215 were male and 149 were female.

Table 1: Distribution of patients by socio-demographic characteristics. (n=364)

Variables	Frequency	Percentage	Mean±SD
Age category in years			42.26±12.17 years
21 to 30	82	22.53	
31 to 40	103	28.30	
41 to 50	101	27.75	
51 to 60	50	13.74	
>60	28	7.7	
Education level			
Illiterate	160	43.96	
SSC or below	168	46.15	
HSC	21	5.77	
Graduation	12	3.30	
Post-graduation	3	0.82	
Occupation			
Housewife	113	31.04	
Business	72	19.78	
Farmer	69	18.96	
Service holder	45	12.36	
Day labourer	29	7.97	
Student	20	5.49	
Retired	6	1.65	
Unemployed	10	2.75	
Gender			
Male	215	59.07	
Female	149	40.93	
Marital Status			
Married	332	91.21	
Unmarried	32	8.79	
Monthly Family Income (Taka)			7343.41±7697
<=5000	196	53.85	
6000 to 10000	112	30.77	
11000 to 15000	25	6.87	
>15000	31	8.52	
Number of Family Members			5.77±1.99
<=4	105	28.85	
5 to 6	149	40.93	
>6	110	30.22	

In table 1, of 364 patients, a major part and nearly half of them were from more than 40 years of age which was 49.18%. Of the other two categories, 22.53% was from 21 to 30 years of age and 28.30% was from 31 to 40 years of age. In case of education level, the highest proportion was 46.15% who completed SSC or below level of education. After that, 43.96% patients were found illiterate. Only 5.77% were found who completed HSC level of education and a little number of patients had done graduation and post-graduation which was 3.30% and 0.82% respectively. Among 364 patients, housewife were 31.04%. Occupational status as business, farmer and employee were closely distributed which was 19.78%, 18.96% and 12.36% respectively. Moreover, 5.49% were students diagnosed as hypertensive. By gender of the total 364 patients, 59.07% were male and 40.93% were female. Among 364 hypertensive patients, 91.21% were married and 8.79% were unmarried. Monthly family income of <=5000 was found as the highest proportion which was 53.85%. And 84.62% respondent's monthly family income was below 11000 (BDT). Among 364 patients, 40.93% respondent's family member were 5 to 6 people which was the highest followed by >6 (30.22%) and <=4 (28.85).

Table 2: Distribution of patients by BMI category, Working hour, other medical disorders. (n=364)

Variables	Frequency	Percentage	Mean±SD
BMI category			22.23±3.08 kg/m^2
Underweight	25	6.87	
Normal	287	78.85	
Overweight	43	11.81	
Obese	9	2.47	
Working hour	8.06±2.53		
<=8	221	60.71	
9 to 10	110	30.22	
> 10	33	9.07	
Other medical disorders(n=125)			
Asthma	43	34.40	
COPD	40	32.0	
Diabetes	39	31.20	
Thalassemia	3	2.40	

In table 2, the result from BMI categories showed that 78.85% respondent's BMI was normal. Only 11.81% were overweight and 2.47% were found as obese. The

categories showed that 60.71% patients worked <=8 hours daily which was highest, followed by 9 to 10 hours (30.22%) and >10 hours (9.07%). Among 364 hypertensive patients, 34.34% had other medical disorders that was 125 respondents. This table showed only significant proportions. Asthma (34.40%) was found as the leading disorder. Result also showed that, COPD (32.0%) and diabetes (31.20%) were also common disorders among the patients.

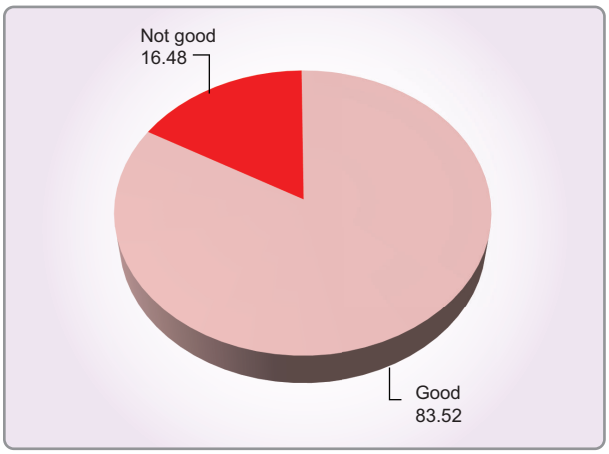

Figure 1: *Sleeping nature of the patients*

Among 364 hypertensive respondents, 83.52% reported that they had good sleep at night and 16.48% respondents reported poor sleeping nature at night (Fig. 1).

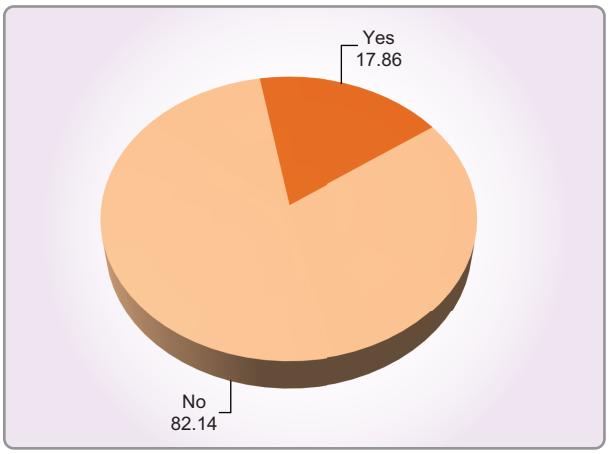

Figure 2: *Daily exercise*

Performing daily exercise among hypertensive patients was quite low. Among 364 patients, major proportion did not perform daily exercise which was 82.14%. Only 17.86% performed their daily exercise (Fig. 2).

Among the 364 hypertensive respondents, the result showed that 84.62% ate red meat and 15.38% did not

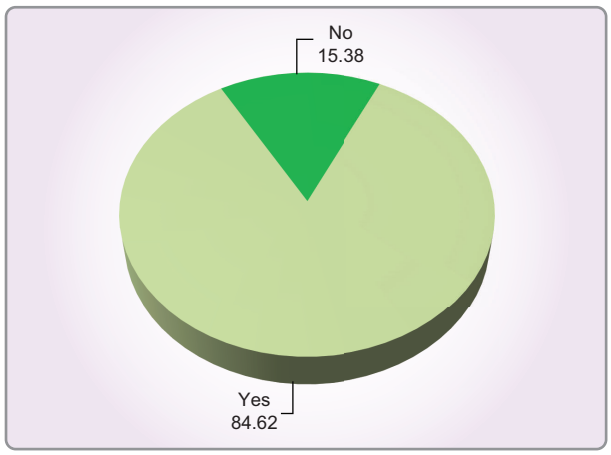

Figure 3: *Proportion of taking red meats*

(Fig. 3). And the mean±SD of eating red meat in a month was 3.75±2.10 times. The minimum number of eating red meat in a month was 1 and maximum was 10 times.

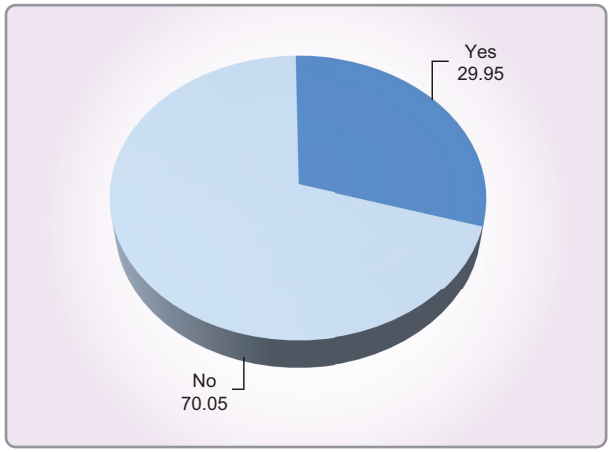

Figure 4: *Extra salt consumption in meal*

The result from salt consumption showed that among 364 hypertensive patients, 29.95% took extra salt in their meal and 70.05% did not take (Fig. 4).

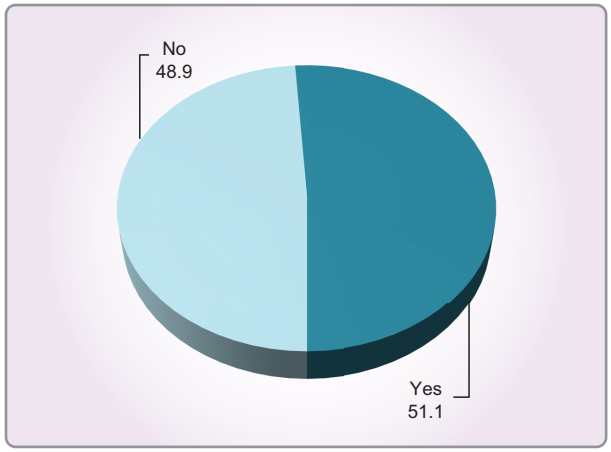

Figure 5: *Any other hypertensive patient in family*

Of the 364 patients, 51.1% or nearly half of the patients had other hypertensive patient in their family (Fig. 5).

Among the 364 hypertensive patients, 25.55% had habit of smoking, only 0.82% had habit of drinking alcohol and 13% used other forms of tobacco (Table 3).

Table 4 showed a comparison on different risk factors between male and female patients. Among males and females, 12.56% and 10.74% were overweight, 3.26% and 1.34% were obese. In daily working hour of 9 to 10 and >10 hours, males' proportion were found higher than females. Also, 20.95% males reported sleeping nature as not good compared to 10.07% females who reported so. Performing daily exercise and eating red meat on meal were higher in females than males. On the other hand, extra salt

Table 3 : Smoking, drinking, other forms of tobacco use of the patients

Risk factors	Yes		No	
	Frequency	%	Frequency	%
Smoking	93	25.55	271	74.45
Drinking alcohol	3	0.82	361	99.18
Other form of tobacco	13	3.57	351	96.43

Table 4: Comparison of risk factors between male and female

Risk factors	Male n (%)	Female n (%)	Test	p value
BMI category				
Underweight	13 (6.05)	12 (8.05)	Fisher's	0.577
Normal	168 (78.14)	119 (79.87)	exact	
Overweight	27 (12.56)	16 (10.74)		
Obese	7 (3.26)	2 (1.34)		
Working hour				
<=8	122 (56.74)	99 (66.44)	χ^2_1	0.145
9 to 10	70 (32.56)	40 (26.85)	(3.86)	
> 10	23 (10.70)	10 (6.71)		
Sleeping nature				
Good	170 (79.07)	134 (89.93)	χ^2_1	0.006
Not good	45 (20.93)	15 (10.07)	(7.54)	
Perform exercise				
Yes	35 (16.28)	30 (20.13)	χ^2_1	0.345
No	180 (83.72)	119 (79.87)	(0.89)	
Red meat				
Yes	176 (81.86)	132 (88.59)	χ^2_1	0.080
No	39 (18.14)	17 (11.41)	(3.06)	
Extra salt in meal				
Yes	72 (33.49)	37 (24.83)	χ^2_1	0.076
No	143 (66.51)	112 (75.17)	(3.14)	
Smoking				
Yes	88 (40.93)	5 (3.36)	χ^2_1	<0.0001
No	127 (59.07)	144 (96.64)	(3.14)	
Drink alcohol				
Yes	3 (1.40)	0 (0.0)	Fisher's	0.273
No	212 (98.60)	149 (100.0)	exact	
Other form of tobacco				
Yes	10 (4.65)	3 (2.01)	χ^2_1	0.182
No	205 (95.35)	146 (97.99)	(1.78)	

consumption was higher among males. Higher portion of the males reported smoking, and use of other forms of tobacco compared to females. Statistically significant ($p<0.05$) difference was found between male and female patients only in sleeping nature and smoking behavior.

Discussion

In this cross-sectional study, the aim was to find out the risk factors of hypertension. This study showed a distribution of risk factors, lifestyles and socio-economic conditions of hypertensive patients.

This study only included the patients more than 20 years old and among them mean age was more than 40 years old and in age category, the result revealed that with the increase of age there were more hypertensive patients. Similar findings were also found in other studies in Bangladesh[30,31]. According to World Health Organization, the global prevalence of hypertension of men is 40.8% and 36% in women. In South Asia, the prevalence is 37.6% and 35.4% respectively[32]. This study found that among the hypertensive patients 59.07% were male and 40.93% were female. The present study revealed that male patients were prominent than female which is very similar with a previous study in Bangladesh where the difference was found by 23.6% vs 21.71%[33].

Level of education is an important socio-economic indicator. People with higher education level having better knowledge of health, face lower psychological stress[34]. Previous study found that lower education level or no education is significantly associated with the increased risk for cardiovascular disease and hypertension[35]. This study also found similar result for level of education among hypertensive patients. Among the patients, 43.96% were illiterate and 46.15% had education level of SSC or below. Occupation plays role in hypertension. A large portion of the study population were housewife and we had the highest percentage of hypertensive patient among housewife that was 31.04% followed by business and farmer 19.78% and 18.96% respectively.

Different studies showed an increase in hypertensive patients with the increase of monthly family income[30,31]. But this study found a different trend where percentage of hypertensive patients decreased with the increase of income. Hypertensive patients were found more in less than or equal to Tk 5000 monthly family income group. A recent study in 2019 found that being never married was a risk factor for hypertension[36]. Among the patients from this study, 91.21% were found married and 8.79% were unmarried.

People with high BMI and obesity had high prevalence in hypertension[37]. Also, in 2018, a study among adult found that the people who were obese likely to have hypertension[38]. A cross-sectional study among urban population also found significant association of BMI with hypertension[31]. Among the hypertensive patients, this study found that 11.81% were overweight and 2.47% were obese. BMI as normal was found by 78.85% and it was found similar in a previous study among rural people in Bangladesh[30]. In terms of daily total working hour, the result revealed that in rural area who worked less than or equal to 8 hours daily were more hypertensive (60.71%). This study also assessed sleeping nature of the patients where was found that 83.52% patients had good sleep at night.

Regular physical activity may lower the blood pressure, hence reduce cardiovascular risk and cardiac remodeling[39]. It was found that adults with low physical activity in Bangladesh were likely to have hypertension[38]. A cross-sectional study among urban people also found association of poor physical activity with hypertension[31]. This study also found a high percentage of hypertensive patients who did not perform daily physical exercise. About 82% patients who were hypertensive did not perform daily physical exercise. Red meat is an important source of protein and essential nutrients. But it is also significantly associated with morbidity, mortality and hypertension[40]. Among the hypertensive patients, 84.62% took meat in a month where the mean was 3.75 times. Previous studies in Bangladesh found significant association of extra salt consumption with hypertension[30,31]. In this study among the hypertensive patients, 29.95% took extra salt in meal. Family history of hypertension is a very important contributor for the development of hypertension. In this study, it was found that 51.1% of hypertensive patients had other hypertensive patient in family which was quite similar with a previous study in Bangladesh[31]. Moreover, among

the patients 34.34% had other type of medical disorders. The leading medical disorders were asthma, COPD and diabetes.

Several studies identified significant association of tobacco use with hypertension. A quantitative analysis found significant association of smoking with hypertension in Bangladesh[41]. In 2015, a study in this region has found significant association of smoking (OR: 3.47) with hypertension[31]. Among the hypertensive patients in this study, 25.55% were smoker which was consistent with a previous study in Bangladesh[31]. This study also found 3.57% hypertensive patients who used other forms of tobacco. In developing countries, consumption of alcohol is increasing from special occasion to daily life and it is happening due to access to industrial alcoholic beverages[42]. In Bangladesh, drinking alcohol is not legal and also it is not as common as tobacco. This study only found 0.82% of patients had history of drinking alcohol.

In this study, 59.07% were male patients and 40.93% were female patients. There were some positive associations in terms of risks factors between male and female which was also found in a previous study in Bangladesh[2]. This study found no noticeable difference in terms of BMI among male and female patients in rural area. But previous study showed that overweight/obesity was found higher among females[33]. In daily working hour of 9 to 10 and >10, males' proportion were found higher than females. Also, 20.95% males reported sleeping nature as not good compared to 10.07% females who reported so. A recent study in Bangladesh showed that low physical activity was found higher among female patients[33]. But this study found no significant difference between male and female in terms of physical activity. Red meat and extra salt consumption were found higher among males. Previous study in Bangladesh showed smoking and smokeless tobacco was found higher among males[33]. This study found this proportion was also higher among males.

Conclusion

This cross-sectional study showed distribution of risk factors of hypertension in a secondary hospital in Bangladesh. The study concludes that number of hypertensive patients increase with the increase of age and decrease with the increase of educational level. A large portion of study population were housewife and hypertensive patients were highest among housewife, followed by businessmen and farmers. A high percentage of patient's BMI was normal and sleeping nature was poor. Percentage of hypertensive patients were higher among those who did not perform physical activity and ate red meat and half of the patients had other hypertensive patients in family. Smoking and other forms of tobacco use were also found significantly. There was a statistically significant difference between males and females in terms of sleeping nature and smoking. This type of study should be conducted more to prevent and control hypertension.

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Knowledge and Awareness about Pneumonia of under 5 Children among the Parents in a Rural Area of Bangladesh

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Abstract:

Introduction: *Pneumonia is the leading cause of death among children under five, with over 150 million cases annually and 14% of global pediatric mortality in 2019. This condition is particularly prevalent in regions like South Asia and Sub-Saharan Africa. Effective prevention involves early detection, immunization, and parental education. This study aims to assess parents' knowledge, attitudes, and practices concerning childhood pneumonia to enhance early detection and prevention.*

Objective: *To evaluate the knowledge and awareness about pneumonia among adults in a rural area of Bangladesh.*

Materials & Methods: *A descriptive cross-sectional study was conducted at Savar Upazilla Health Complex, Dhaka, Bangladesh. The study analyzed 105 valid samples from 116 collected, using a purposive non-probability sampling technique. Data were gathered through face-to-face interviews with a pre-tested, semi-structured questionnaire.*

Results: *The study showed that 65.71% of participants had knowledge about pneumonia, but only 40.95% knew about its spread. Doctors (44.76%) and neighbors (17.14%) were key information sources. Most respondents (80.00%) identified vaccination as crucial, with 68.57% valuing a smoke-free environment. Among fathers, 69.52% were smokers. Symptoms like fever (87.62%) and weakness (91.43%) were commonly recognized. Awareness about the pneumonia vaccine was 70.48%, and 78.10% completed the three-dose series. The study found significant gaps in knowledge about pneumonia symptoms and causes among mothers.*

Conclusion: *Pneumonia remains a major cause of childhood mortality in developing countries, exacerbated by socioeconomic and healthcare access issues. The study highlights significant gaps in parental knowledge, particularly among mothers. Enhancing health education, improving healthcare infrastructure, and addressing socio-economic barriers are essential for reducing pneumonia-related deaths and improving child health outcomes.*

Keywords: *Pneumonia, Knowledge, Mortality, Immunization, Breastfeeding*

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Introduction:

Pneumonia is the leading cause of death among children globally. It represents a significant public health issue in numerous developing countries and is also known as a lower respiratory tract infection.[1] As per the World Health Organization (WHO), over 150 million episodes of pneumonia transpire annually, constituting over 95% of all new cases globally. In underdeveloped nations, there are thought to be 500–900 million cases of acute respiratory infections (ARI) annually.[2]

Pneumonia is the leading infectious cause of child mortality worldwide, responsible for 740,180 deaths among children under five in 2019, comprising 14%

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of all pediatric deaths and 22% of deaths in children aged one to five[3]. The World Health Organization classifies pneumonia as severe or extremely severe based on clinical presentation. Severe cases require hospitalization for supportive treatments such as oxygen therapy, airway suctioning, hydration, nutritional management, antibiotics, and close observation.[4] The causative organisms of Pneumonia are bacteria, viruses, and parasites.[1] *Streptococcus pneumoniae* is the most common cause of bacterial pneumonia in children and *Haemophilus influenzae* type b (Hib) is the second most common cause of bacterial pneumonia.[3]

Reducing childhood pneumonia mortality in developing countries like Bangladesh depends on parents' knowledge, attitudes, and practices. Socio-demographic factors such as parental age, education, and income play a crucial role in community health. Challenges include incomplete immunization, malnutrition, limited healthcare access, and inadequate treatment. Weak public health systems and a lack of disease awareness also hinder effective pneumonia management.[1] Educating mothers is of paramount importance in the care of children during health and disease.[5] A particular approach for preventing pneumonia in children under five is to help families become more adept at recognizing warning symptoms and obtaining prompt medical attention, according to the World Health Organization and UNICEF (United Nations International Children's Emergency Fund).[6]

Regular vaccination is a cost-effective strategy to prevent pneumonia-related deaths. Despite advances in vaccine development, high-burden countries still face challenges in achieving widespread vaccination due to cost and accessibility issues.[7] While pneumococcal disease is frequent in young children, older persons are more likely to die or become seriously ill from it. Vaccinations against pneumococci can help prevent infections, especially invasive illnesses.[8] Six months of breastfeeding exclusively provides children with enough nourishment to boost their natural immunity, particularly against lower respiratory tract illnesses like pneumonia. [9]

Poor environmental conditions that promote respiratory pathogen spread increase childhood morbidity. WASH (water, sanitation, and hygiene) interventions, such as handwashing with soap and improved water quality, effectively reduce respiratory illnesses and pneumonia risk. Combining WASH and nutrition interventions is more effective in reducing childhood illnesses than individual measures alone.[10,11] Pneumonia is a leading cause of death among young children and a significant public health issue, especially for those under five. This study aims to evaluate parents' knowledge, attitudes, and practices regarding childhood pneumonia. By enhancing parental understanding and practices, the study seeks to prevent risk factors and improve early detection of the disease.

Materials & Methods:

This descriptive cross-sectional study was conducted at Savar Upazilla Health Complex in Dhaka district, Bangladesh. It focused on adults aged 18 years and older. Participants were selected based on purposive sampling, with inclusion criteria including permanent residency, presence during the study, willingness to participate, and being an adult. Exclusion criteria were temporary residency, refusal to provide data, and lack of mental soundness. Initially, 116 samples were collected, but after excluding 11 samples due to inconsistencies, 105 valid samples were analyzed. A semi-structured, pre-tested questionnaire was used for data collection, which was pre-tested on a small sample to ensure reliability. Data were gathered through face-to-face interviews, following an introductory conversation and obtaining informed consent. After data collection, the data were checked for consistency and analyzed using computer software, with results presented in tables, pie charts, and bar diagrams. Ethical approval was obtained from Ethical review committee of MH Samorita Hospital and Medical College, and all information was kept confidential and used solely for research purposes, ensuring the respondent's privacy.

Results:

Table 1 shows that among 105 respondents, 10.48% of children were <1 month old, 12.38% children were between 1 to 6 months old followed by 11.43% children were between 7 to 12 months old, 20.00% children were between 13 to 24 months old, 10.48% children were between 25 to 36 months old, 29.52% children were between 37 to 48 months old and rest 5.71% children were between 49 to 60 months of age. Majority of the children were female which is 54.29% and the rest of the (45.71%) children were male.

Table 1: Socio-demographic characteristics (n=105)

Variables	Options	Total	Percentage (%)
Age of the children(in months)	<1	11	10.48%
	1 to 6	13	12.38%
	7 to 12	12	11.43%
	13 to 24	21	20.00%
	25 to 36	11	10.48%
	37 to 48	31	29.52%
	37 to 48	6	5-.71%
Gender of the children	Male	48	45.71%
	Female	57	54.29%

Table 2 shows the occupation of the respondents. Among them, majority of them were housewives with a number of 34 which was 32.38%. Day labor was 2nd with a number of 18 and 17.14%. Third majority of people were service holders with a number of 17 which is 16.19%. Sixteen people were businessmen and they had a percentage of 15.24%. Farmers had a percentage of 10.48% and the total number was 11. Shopkeepers had a rate of 6.67% and the total number was 7. People involved in other occupations were 12 (11.43%).

Table 2: Occupation of the respondents (n=105).

Occupation of the respondents	Number	Percentage
Housewife	34	32.38
Farmer	11	10.48
Service	17	16.19
Business	16	15.24
Day Labor	18	17.14
Shopkeeper	7	6.67
Others	12	11.43

Figure 1 reveals that among the respondents, majority belonged to the nuclear family (number: 66, percentage: 63.86%) and the rest belonged to the joint family (number: 39, percentage: 36.24%).

Figure 2 reveals the educational qualification of the respondents. Among the 105 respondents, 16.19% (17) were illiterate, 27.62% (29) achieved primary education, 5.71% (6) attended the SSC, 13.33% (14) passed the SSC, 4.76% (5) attended HSC, 19.05 (20) passed HSC, 11.43% (12) were graduate and rest of them 1.90% (2) population achieved others educational qualification.

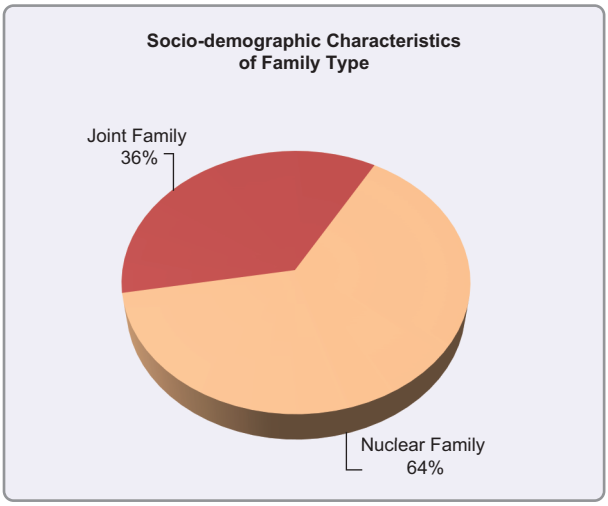

Figure 1: *Family type of the respondents (n=105)*

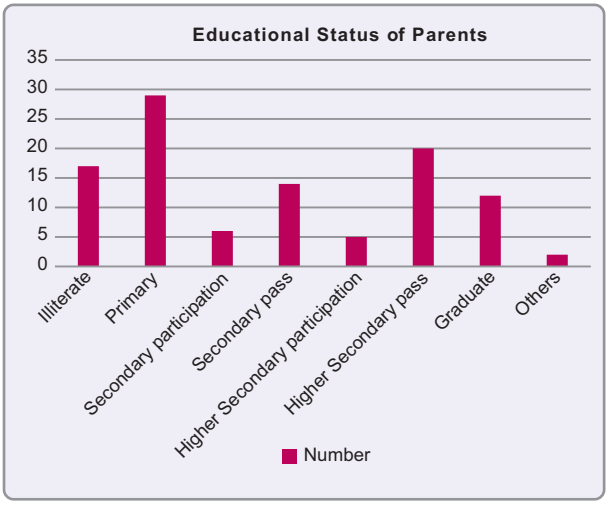

Figure 2: *Educational status of parents (n=105)*

Table 3 shows that majority of the respondents (65.71%) had knowledge about Pneumonia but 36.29% had no knowledge about it. Out of 105 respondents, 43 (40.95%) respondents had knowledge about the spread of Pneumonia. Moreover 62 (59.05%) of the respondents said that they had no knowledge about the spread of Pneumonia. Majority of the respondents were aware of the pneumonia vaccine and which was 74 (70.48%) and 31 (29.52%) did not know about the pneumonia vaccine. The majority of the respondents (60.00%) said that exclusive breastfeeding can prevent Pneumonia but 40.00% did not think so.

According to Table 4 regarding the type of residence the majority of the respondents lived in the kutcha house (56.19%) followed by semi-pucca house (32.38%) and pucca house (11.43%). Seventy seven number (73.33%) population had sanitary latrine facilities and rest 28 (26.67%) population had kutcha latrine facilities.

Figure 3 reveals that out of 105 respondents, 73 (69.52%) of the child's father were habituated to smoking, and the rest 32 (30.48%) of the child's fathers were not habituated to smoking.

Figure 4: shows that out of 105 respondents, most of the people said that fever is the most common symptom 92 (87.62%), followed by common cold 84 (80.00%), cough 88 (83.81%), chest indrawing 56 (53.33%), chest pain 12 (11.43%), breathlessness 73 (69.52%), vomiting 39 (37.14%), fast breathing 83 (79.05%), anorexia 69 (65.71%), weakness 96 (91.43%) and others 61 (58.10%).

Table 5 illustrates that most of the respondents (80.00%) thought that vaccination was the mode of prevention of Pneumonia. Then 68.57% stated that a smoking-free environment was the way to prevent this disease. Among the respondents, prevention by doing regular physical exercise and eating nutritious food was assumed by 65.71% and 52.38% respectively. About 40.00% thought it could be prevented by washing hands regularly followed by others (26.67%).

Table 3: Knowledge of the respondents according to different aspects of Pneumonia (n=105)

Variables	Options	Number	Percentage
Knowledge about Pneumonia	Yes	69	65.71
	No	36	36.29
Knowledge about the mode of spread of Pneumonia	Yes	43	40.95
	No	62	59.05
Knowledge about the prevention of Pneumonia by Exclusive Breastfeeding	Yes	63	60.00
	No	42	40.00
Knowledge about Pneumonia Vaccine	Yes	74	70.48
	No	31	29.52

Table 4: Socio-demographic characteristics of parents according to their type of residence and sanitation facilities (n=105)

Variables	Options	Number	Percentage (%)
Type of Residence	Pucca	12	11.43
	Semi- pucca	34	32.38
	Kutcha	59	56.19
Sanitation Facilities	Sanitary Latrine	77	73.33
	Kutcha Latrine	28	26.67

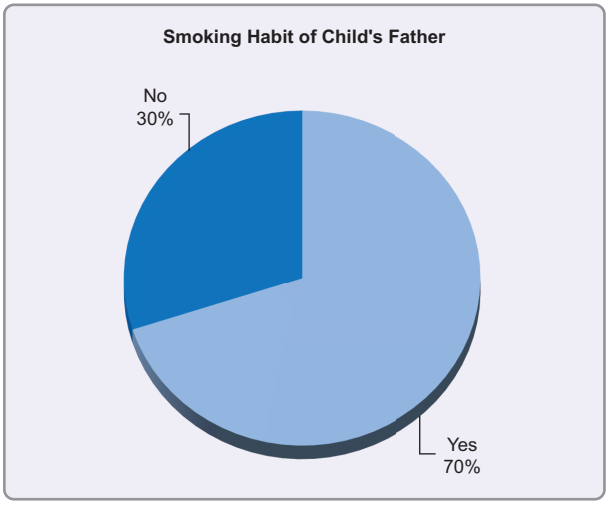

Figure 3: *Smoking habit of the child's father (n=105)*

Table 5: Distribution of the parents according to their knowledge about the mode of prevention. (n=105)

Knowledge about the Mode of Prevention	Number	Percentage
Wash Hands Regularly	42	40.00
Smoking Free Environment	72	68.57
Regular Physical Exercise	69	65.71
Eating Nutritious Food	55	52.38
Vaccine	84	80.00
Others	28	26.67

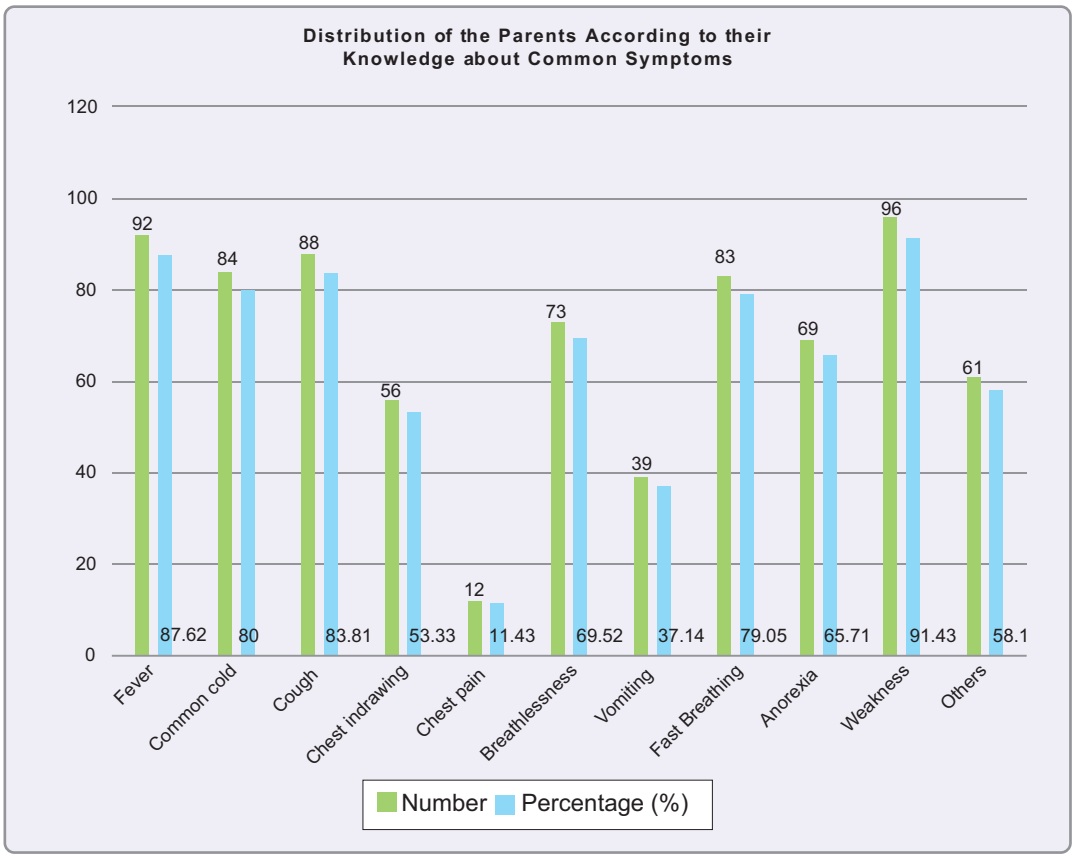

Figure 4: *Distribution of the parents according to their knowledge of common symptoms (n=105)*

Discussion:

Pneumonia is an infectious disease. It can lead to death in children under five years of age.[6] A study was conducted by the Department of Biotechnology and Genetic Engineering, Mawlana Bhashani Science and Technology University, Tangail, Bangladesh. In this study among the children included in the survey, 29.77% were sick at the time of data collection or within the last two weeks. Among them 16.28% had a cough at the time of the survey or within the last

two weeks before the survey and 25.1% of children weren't able to drink during pneumonia. Within the studied children 44.65% had a fever, 28.4% had wheezing, 42.8% had shortness of breath, and 29.3% had clammy or sweaty skin.[4] In the present study, the under-five children of any age range including newborns are at risk for pneumonia, and the younger the child, the higher the risk of death from pneumonia. Most of the people said that fever is the most common symptom (87.62%), followed by common cold 84 (80.00%), cough 88 (83.81%), chest indrawing 56 (53.33%), chest pain 11.43%, breathlessness 69.52%, vomiting 37.14%, fast breathing 79.05%, anorexia 65.71%, weakness 91.43% and others 58.10%.

The National Situation Analysis Report of Pneumonia 2018 highlights that two children die from pneumonia every hour in Bangladesh. This study, conducted in Savar Upazilla, examined parents' knowledge, attitudes, and practices concerning childhood pneumonia. It focused on understanding disease determinants, symptoms, actions taken during their child's illness, and adherence to medical advice. Parents were asked about the causes of pneumonia, with most correctly identifying viruses and bacteria as the primary factors responsible for the disease.

A similar study was conducted by the Department of Public Health, Premier University, Chittagong (PUC), Bangladesh. Both genders were selected. Among the participants, it is noted that the education level of the majority of the parents is not that much higher. About half of the mothers from the participants were housewives and the frequency was 47.0%, the fathers were occupied in different workplaces where the majority of the fathers were private employees followed by part-time workers.[1] Mother's knowledge is very essential to prevent and take care of pneumonia because she is closer to her children.[6] Mothers often face household barriers that delay seeking medical care for their children with pneumonia. Elderly family members may discourage timely treatment, favoring herbal or spiritual remedies. Many mothers also treat their own pneumonia using traditional methods, influenced by elders or local healthcare providers. The study highlights a lack of awareness among mothers about pneumonia prevention and proper care.[4]

In impoverished regions like Bangladesh, many mothers lack knowledge about pneumonia's signs and causes. Environmental factors such as dust, unhygienic conditions, smoke from cooking, and seasonal changes were often believed to cause pneumonia. The study highlights the need for better awareness of risk factors, including indoor smoke, air pollution, and overcrowding, through effective socialization and knowledge transfer between health professionals and communities.[2] Vaccinating children against common childhood illnesses on a regular basis is one of the most economical ways to avoid pneumonia, which is the main cause of mortality for young children. Sixty percent of the moms agreed that exclusive breastfeeding could prevent pneumonia, which is consistent with a different study.[7]

Conclusion:

Pneumonia remains a major cause of death among children under five, particularly in developing countries where poverty, inadequate healthcare, and poor living conditions intensify the problem. This study emphasizes the urgent need to raise awareness among parents, especially mothers, about pneumonia's causes, symptoms, and prevention. Many mothers lack essential knowledge, while misconceptions and cultural beliefs often delay necessary medical intervention, resulting in preventable deaths. Addressing these gaps through improved health education and empowering mothers with accurate information about the benefits of vaccinations, good hygiene, and timely medical care is critical. Furthermore, overcoming socio-economic barriers to healthcare access, particularly in rural regions, and enhancing healthcare infrastructure are vital to reducing pneumonia mortality rates. By combining efforts to improve water, sanitation, hygiene (WASH), and nutrition, along with targeted community health education, a comprehensive public health approach can significantly reduce pneumonia-related deaths and improve overall child health outcomes in underdeveloped regions.

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Review Article

Lung Oncology Review: Progress and Perspectives

Bhuiyan NNM[1], Islam F[2], Auni RI[3]

Abstract

Lung cancer remains a leading cause of cancer-related mortality worldwide. This review provides a comprehensive overview of recent advances in lung oncology, focusing on the latest developments in diagnosis, molecular profiling, and therapeutic strategies. Key topics include innovations in targeted therapies, immunotherapy, and early detection techniques, along with emerging biomarkers that improve personalized treatment approaches. Challenges in treatment resistance and future research directions are also discussed, offering a critical perspective on the evolving landscape of lung cancer management. This review aims to guide clinicians and researchers in understanding current trends and future directions in lung oncology. In 2013 it was estimated that there were 14.9 million incident cancer cases and 8.2 million deaths. Of these cases, lung cancer remains the leading cause of cancer death globally in both high incomes and low-middle income countries, accounting for 1.6 million cancer deaths annually (approximately 20% of total cancer deaths), with an estimated 1.8 million new cases annually worldwide.

***Key Words**: EGFR Mutation, ALK rearrangement, KRAS mutation, Liquid biopsy, Biomarkers.*

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Introduction:

Lung cancer remains one of the leading causes of cancer-related mortality worldwide, accounting for approximately 18% of all cancer deaths. Despite advances in early detection and treatment, the prognosis for patients with lung carcinoma, particularly non-small cell lung cancer (NSCLC), remains poor, with five-year survival rates hovering around 20%. Historically linked to tobacco exposure, lung cancer is increasingly diagnosed in never-smokers, underscoring the need for deeper understanding of its aetiologies and risk factors.

Recent years have seen remarkable progress in the management of lung carcinoma, particularly with the advent of targeted therapies and immunotherapies. Molecular profiling has revolutionized treatment strategies, allowing for personalized approaches that have significantly improved outcomes in specific patient populations. Immunotherapy, particularly immune checkpoint inhibitors, has reshaped the therapeutic landscape, offering new hope to patients with advanced disease.

This review aims to provide a comprehensive overview of the current state of lung carcinoma research and treatment, highlighting key advancements in molecular biology, diagnostics, and therapeutic strategies. In addition, it will explore emerging challenges, including resistance mechanisms and disparities in healthcare access, and offer perspectives on future directions for improving patient outcomes in lung cancer management.

Global incidence and mortality:

Lung cancer remains the leading cause of cancer-related deaths worldwide, representing a significant public health challenge. According to **GLOBOCAN**

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2020, lung cancer accounted for **11.4%** of all new cancer cases globally, with an estimated **2.2 million new cases** diagnosed in 2020 alone of mortality, lung cancer is responsible for the highest number of cancer-related deaths, contributing to approximately **18%** of all cancer deaths, equating to **1.8 million deaths**worldwide[1]. It dominantly affects males, accounting for around **14.3% of all cancers in men** and is the leading cause of cancer death in males, while in women, lung cancer accounts for about **8.4% of all cancers[2]**. The incidence notably higher in countries with a high prevalence of smoking, such as Eastern Europe and parts of Asia, whereas low-income countries in sub-Saharan Africa report comparatively lower incidence[3]. In high-income countries, early detection programs have started to improve survival rates, but globally, five-year survival remains low at approximately **19%[4]**. The high mortality is due to a coof factors, including late-stage diagnosis, the aggressive nature of the disease, and limited access to advanced treatment options, especially in low- and middle-income countries[5].

Key Risk Factors for Lung Cancer:

1. Primary and Secondary Exposure (Smoking)
   - Primary smoking[2, 6].
   - Passive smoking (second-hand smoke)[7]
   - Smoking cessation[2]
2. **Environmental and Occupational Exposure**
   - Air pollution (10-20%)[8]
   - Asbestos exposure[9].
   - **Radon gas exposure (3-14%)** [10]
3. Genetic Predisposition
   - Family history
   - **Inherited genetic mutations (**EGFR**, KRAS, or ALK g**enes can increase the risk**)[11]**
   - **Polymorphisms** (e.g., GST, CYP1A1) [12].
4. Diet and Nutrition
   - A **diet low in fruits and vegetables**[13].
   - **Excessive alcohol consumption**[14].

Changing Trends: Lung Cancer in Non-Smokers and Younger Populations:

Historically, lung cancer was almost exclusively associated with smoking, but approximately 15-20% of lung cancer cases now occur in people who have never smoked.

1. **Genetic Mutations**:
   a. Non-smokers diagnosed with lung cancer often have specific genetic mutations, such as in the EGFR, ALK, ROS1, or KRAS genes[12]. Research shows that EGFR mutations are particularly common in non-smokers[15.]
2. **Environmental Factors**:
   a. Air pollution[16].
   b. Radon gas[17].
3. **Younger Populations**[2]

Classification and Subtypes of Lung Cancer:
This classification is crucial because each type grows, spreads, and responds to treatment differently.

1. Non-Small Cell Lung Cancer (NSCLC)

NSCLC accounts for approximately **85-90%** of all lung cancer cases[18]. It is further divided into several subtypes, each with distinct cellular characteristics and clinical behaviours:

- **Adenocarcinoma**:
  - **Prevalence**: It is the most common subtype of lung cancer, making up about **40%** of cases[18, 19].
  - **Prognosis**: Adenocarcinoma typically has a better prognosis compared to other NSCLC subtypes, especially when detected early[18].
- **Squamous Cell Carcinoma (SCC)**:
  - **Prevalence**: SCC accounts for **25-30%** of NSCLC cases[19].
- **Large Cell Carcinoma**:
  - **Prevalence**: Comprising **10-15%** of NSCLC cases, large cell carcinoma is less common but known for its **aggressive behaviour[19]**.

2. Small Cell Lung Cancer (SCLC)

SCLC accounts for approximately **10-15%** of all lung cancers[18]. This type is often called **oat cell cancer** due to the shape of its cells and is strongly associated with **heavy smoking[9]**:

- **Prognosis**: Although SCLC responds well to initial chemotherapy and radiation, it tends to relapse quickly, and the overall prognosis is poorer compared to NSCLC[18].

SCLC is classified into two stages:

- **Limited stage**: Cancer is confined to one side of the chest, which can be treated with localized therapies[9].
- **Extensive stage**: Cancer has spread beyond the lung, requiring systemic treatment[9].

3. Other Rare Subtypes

In addition to NSCLC and SCLC, there are rare subtypes of lung cancer, including:

- **Carcinoid Tumors**: These are slow-growing tumors that develop in the **neuroendocrine cells** of the lungs and make up less than **5%** of lung cancers[2].

4. Molecular Subtypes of Lung Cancer:

In recent years, lung cancer classification has advanced beyond the traditional histological categories, and **molecular profiling** has revealed several key genetic mutations [2, 9, 20].

- EGFR mutations
- ALK rearrangements
- KRAS mutations

Molecular Biology and Genetic Insights in Lung Cancer:

Below are some of the most critical genetic mutations associated with lung cancer and their impact on treatment:

1. Epidermal Growth Factor Receptor (EGFR) Mutations
   - **Significance**: EGFR mutations are found in approximately **10-15%** of NSCLC patients in Western populations and up to **40%** in East Asian populations, particularly among **non-smokers** and those with **Adenocarcinoma[21].**
   - **Impact on Treatment**: Patients with EGFR mutations can benefit from targeted therapies such as **tyrosine kinase inhibitors (TKIs)** (e.g., **erlotinib, gefitinib, osimertinib**), which specifically inhibit the activity of the mutant receptor[22].
2. Anaplastic Lymphoma Kinase (ALK) Rearrangements
   - **Significance**: ALK rearrangements are present in about **5%** of NSCLC patients, often found in **younger, non-smoking** patients with **Adenocarcinoma[22]**.
   - **Impact on Treatment**: ALK-positive tumors are highly sensitive to **ALK inhibitors** such as **crizotinib, alectinib**, and **lorlatinib[21]**.
3. **KRAS Mutations**
   - **Significance**: **KRAS** mutations are found in about **25-30%** of NSCLC cases, primarily among **smokers**[20].
   - **Impact on Treatment**: Unlike EGFR and ALK, **KRAS mutations** were once considered "undruggable," but recent breakthroughs have led to the development of specific inhibitors like **sotorasib** and **adagrasib** for **KRAS G12C mutations**, providing new hope for this subset of patients[2].
4. ROS1 Rearrangements
   - **Significance**: **ROS1** gene rearrangements are rare, occurring in approximately **1-2%** of NSCLC patients, but they are important because tumours with this alteration tend to respond well to **ROS1 inhibitors [22].**
   - **Impact on Treatment**: Like ALK-positive cancers, **ROS1-positive** lung cancers can be treated with **crizotinib**, which targets the ROS1 fusion protein [21]. Other newer drugs like **entrectinib** and **ceritinib** are also being used to treat ROS1-positive cancers[20-21].

Additional Genetic Insights:

- BRAF Mutations
- MET Amplifications and Mutations

Advances in Diagnostics

Over the past decade, diagnostic advancements have played a transformative role in the detection and management of lung cancer.

1. Low-Dose Computed Tomography (LDCT)
   - **Significance**: **LDCT** is now the gold standard for lung cancer screening in high-risk populations[23]

- **Advantages**: LDCT can detect lung nodules at an earlier stage when the disease is more treatable, contributing to better survival outcome [23, 24].

2. Positron Emission Tomography (PET) Scans
   - **Significance**: **PET scans**, often combined with CT scans **(PET-CT),** are widely used in lung cancer diagnostics to determine the metabolic activity of tumours [25].

3. Endobronchial Ultrasound (EBUS) and Navigational Bronchoscopy
   - **Significance**: **EBU S**and**navigational bronchoscopy** has improved the ability to obtain tissue samples from hard-to-reach areas of the lung [24].

4. Liquid Biopsies
   - **Significance**: **Liquid biopsies** are a revolutionary advance in the field, allowing for the detection of lung cancer-specific mutations through a simple blood test [25].

5. **Next-Generation Sequencing (NGS)**
   - **Significance**: **NGS** allows for comprehensive genetic profiling of lung tumours, identifying multiple mutations in a single test[25].

6. **Immunohistochemistry (IHC) and PD-L1 Testing**
   - **Significance**: **PD-L1 expression testing** has become an essential diagnostic tool in determining eligibility for immunotherapy, particularly **immune checkpoint inhibitors** such as **pembrolizumab** and **nivolumab[24]**.

7. Artificial Intelligence (AI) in Diagnostics
   - **Significance**: **AI** and **machine learning** are emerging tools in the analysis of medical imaging and lung cancer screening[26].

Targeted Therapies in Lung Cancer:

Targeted therapies work by interfering with specific molecules or pathways critical to cancer cell survival and growth[27].

1. **Epidermal Growth Factor Receptor (EGFR) Inhibitors [27-30]**
2. **Anaplastic Lymphoma Kinase (ALK) Inhibitors [27-30]**
3. **ROS1 Inhibitors [27-30]**
4. **BRAF Inhibitors [27-30]**
5. **MET Inhibitors [27-30]**
6. **RET Inhibitors [27-30]**
7. KRAS Inhibitors [27-30]

Immunotherapy in Lung Cancer

Immunotherapy has emerged as a groundbreaking approach in the treatment of lung cancer, particularly non-small cell lung cancer (NSCLC), by harnessing the power of the patient's own immune system to recognize and destroy cancer cells

1. Immune Checkpoint Inhibitors
   - They work by blocking the proteins that prevent immune cells, especially T cells, from attacking cancer cells[31].
   - PD-1/PD-L1 Inhibitors[31]
   - **CTLA-4 Inhibitors**[24]

2. Tumour Mutational Burden (TMB) and Immunotherapy Response
   - **TMB as a Biomarker**: High tumor mutational burden (TMB), which refers to the number of mutations in tumor DNA, has been linked to better responses to immunotherapy[31].

3. Immunotherapy in Combination with Chemotherapy
   - **Therapies**: The combination of **pembrolizumab** with standard chemotherapy has been approved for the first-line treatment of advanced NSCLC, regardless of PD-L1 expression[32].

4. CAR-T Cell Therapy

   Although still primarily used for blood cancers, **chimeric antigen receptor (CAR)-T cell therap**ies an experimental immunotherapy being explored in lung cancer treatment[31].

5. Adoptive T cell Transfer (ACT)

   Another emerging approach is **adoptive T cell transfer**, where T cells from the patient are collected, expanded, and modified in the lab before being re-infused into the patient[32].

Chemotherapy and Radiation Therapy in Lung Cancer Treatment

Chemotherapy in Lung Cancer

Chemotherapy involves the use of drugs that target rapidly dividing cells, including cancer cells. It is typically used to treat non-small cell lung cancer (NSCLC) and small cell lung cancer (SCLC), either as a first-line treatment or when the disease is in an advanced stage[33].

1. **Mechanism of Action**:
    - Chemotherapy drugs can either damage the DNA of cancer cells, preventing them from dividing, or prevent the cells from completing the cell cycle[34].
        - **Platinum-based drugs (**e.g**.cisplatin** and **carboplatin)**
        - **Taxanes (**e.g**.paclitaxel, docetaxel)**
        - **Topoisomerase inhibitors** (e.g., **etoposide**, **irinotecan**).
2. **Recent Advances**:
    - The combination of chemotherapy with **immunotherapyortargeted therapies** has shown improved survival rates and efficacy, particularly in NSCLC patients [35].

Radiation Therapy in Lung Cancer:

Radiation therapy uses high-energy radiation to kill or shrink cancer cells[34].

1. **Types of Radiation Therapy**:
    - External Beam Radiation.
    - Stereotactic Body Radiotherapy (SBRT)
    - Prophylactic Cranial Irradiation (PCI)
2. **Recent Advances**:
    - Advances like **SBRT** have allowed for more precise radiation delivery, reducing damage to healthy tissues[34].

Chemotherapy and Radiation Therapy Combined

In many cases, chemotherapy and radiation therapy are used together in a treatment strategy known as **chemoradiation[33, 35]**. This combined approach is used to treat locally advanced lung cancer, particularly in patients who are not candidates for surgery [33, 35].

1. **Indications for Combined Therapy**:
    - **locally advanced NSCLC** or **SCLC**
    - **SCLC**, chemoradiation is typically the main treatment, as the cancer often responds well to this combined approach[33, 35].

Surgical Approaches in Lung Cancer Treatment:

Types of Surgical Procedures in Lung Cancer:

1. **Lobectomy**:
    - The removal of an entire lobe of the lung is the most common and preferred surgical approach for **early-stage NSCLC [36-39]**.
2. **Pneumonectomy**:
    - Pneumonectomy involves the removal of an entire lung. It is performed when the tumour is centrally located and involves more than one lobe or when lobectomy is not feasible due to tumour location[39].
3. **Segmentectomy/ Wedge Resection**:
    - Segmentectomy and wedge resection are less invasive and preserve more lung tissue than lobectomy or pneumonectomy, which may be critical in patients with preexisting lung disease [36, 39].
4. **Video-Assisted Thoracoscopic Surgery (VATS)**:
    - VATS reduces the risk of infection, minimizes blood loss, and provides faster recovery compared to traditional open surgery[36].
5. **Sleeve Resection**:
    - **Indications**: This procedure is used when the tumour involves the central airways but not the entire lung**.** This approach is particularly useful for tumors located at the bronchus [39].

Indications for Surgery:

1. Early-Stage Lung Cancer.
2. Stage IIIA NSCLC.
3. Small Cell Lung Cancer (SCLC).
4. Lung Metastasis.

Challenges in Lung Cancer Treatment

Lung cancer remains one of the most challenging cancers to treat due to its complex biology, late-stage diagnosis, and various treatment limitations.

1. Late Stage Diagnosis
    - **Delayed Detection**: Lung cancer is often diagnosed at an advanced stage, primarily due to the lack of early symptoms in the early stages of the disease [40].
2. Tumor Heterogeneity
    - **Molecular Complexity**: Lung cancer, especially **non-small cell lung cancer (NSCLC)**, is highly heterogeneous at the genetic, cellular, and histopathological levels.
3. Limited Effective Treatment Options for Advanced Stages
    - **Chemotherapy Limitations**: Chemotherapy often only provides **palliative benefits** and is associated with significant **side effects,** including fatigue, nausea, and immunosuppressant.
4. Toxicity and Side Effects of Treatments
    - **Chemotherapy Toxicity**: Chemotherapy can cause severe side effects, including **immune suppression, gastrointestinal distress**, and **hair loss**.
5. Resistance to Targeted Therapies
    - Mutations in **KRAS, ROS1**, and **ALK** also lead to resistance mechanisms that complicate treatment strategies.
6. Health Disparities and Access to Care
    - **Geographic and Socioeconomic Barriers**: **Rural areas**, especially in low- and middle-income countries, face limited access to **specialized cancer centers** or diagnostic technologies like **CT scans** or **PET scans**, affecting early detection.
7. Lack of Early Screening Programs
    - **Screening Gaps**: While **low-dose CT scanning** is recommended for high-risk groups (such as heavy smokers), **screening programs** are still not universally available.

Emerging Therapies and Future Directions in Lung Cancer Treatment

1. Targeted Therapies for New Genetic Mutations
    - **Emerging Targets**: Mutations beyond the well-known **EGFR** and **ALK** alterations, such as **MET** amplification, **BRAF** mutations, and **HER2** mutations, are now being targeted with investigational drugs.
2. Immunotherapy Advances
    - **Expanded Use of Checkpoint Inhibitors**: The success of **immune checkpoint inhibitors** like **PD-1/PD-L1 inhibitors** (e.g., **nivolumab, pembrolizumab**) has led to ongoing clinical trials to extend their use to earlier stages of lung cancer, even in **neoadjuvant** and **adjuvant settings**[32].
3. Cancer Vaccines
    - **Personalized Cancer Vaccines**: Personalized vaccines are being developed to target the unique mutations of an individual's tumor. Research in **neoantigen vaccines** aims to exploit the mutations present in each patient's tumour to create personalized vaccines tailored to their genetic profile.
4. Liquid Biopsies for Early Detection and Monitoring
    - **Non-invasive Biomarker Testing**: Liquid biopsies, which analyze **circulating tumor DNA (ctDNA), circulating tumor cells (CTCs),** and **exosomes** from a blood sample, are becoming an essential tool for early diagnosis, monitoring treatment efficacy, and detecting **minimal residual disease** after surgery or therapy.
5. Nanotechnology in Lung Cancer Treatment
    - **Nanoparticle Delivery Systems**: **Nanomedicine** is a growing area of research in lung cancer treatment, involving the use of **nanoparticles** to deliver **chemotherapeutic agents, gene therapies**, and **immuno-therapies** directly to the tumor site.
6. Epigenetic Therapy:
    - **Modifying Epigenetic Changes**: Epigenetic changes, such as **DNA methylation** and **histone modification**, play a key role in lung cancer development and progression.
7. Regenerative Medicine and Stem Cell Therapy
    - **Stem Cell Therapies**: The potential use of **stem cells** in lung cancer treatment is being

actively researched. Stem cells may help repair tissue damage caused by cancer or treatments like chemotherapy and radiation.

8. Combination Therapies

- **Synergistic Effects**: Combining various treatment modalities, such as **chemotherapy, targeted therapies, immunotherapy**, and **radiotherapy**, is a promising approach to overcoming resistance and improving treatment efficacy.

Role of Liquid Biopsies and Biomarkers in Lung Cancer

Liquid biopsies and **biomarkers** have emerged as critical tools in the diagnosis, monitoring, and treatment of lung cancer.

1. Early Detection and Diagnosis

- **Non-invasive Testing**: Liquid biopsies involve the analysis of biomarkers found in bodily fluids, typically blood, to detect the presence of cancer cells or genetic material from tumors.

2. Monitoring Treatment Efficacy

- **Real-time Assessment**: Liquid biopsies allow clinicians to track the molecular profile of a tumor in real-time, providing insights into how the tumor is responding to treatment.

3. Genetic Mutation Profiling

- **Targetable Mutations**: Liquid biopsies can help identify key genetic mutations such as **EGFR** mutations, **ALK** rearrangements, and **KRAS** mutations, which are crucial for determining the most appropriate targeted therapies.

4. Detection of Resistance Mutations

- **Acquired Resistance**: Liquid biopsy testing can detect mutations that lead to treatment resistance, such as **T790M** mutation in EGFR-mutant lung cancer, allowing clinicians to adjust treatment regimens accordingly.

5. Personalized Treatment Plans

- **Tailored Therapeutic Decisions**: Liquid biopsies provide valuable information on the molecular and genetic makeup of a tumour, allowing clinicians to design personalized treatment plans based on the specific mutations present.

6. Biomarkers for Prognosis

- **Prognostic Indicators**: High levels of **ctDNA** or certain gene mutations can suggest a more aggressive form of cancer, enabling early interventions.

7. Limitation:

- **Sensitivity and Specificity**: One of the challenges with liquid biopsies is achieving high sensitivity and specificity, particularly in the early stages of lung cancer when tumour DNA is less abundant in the bloodstream.

Challenges:

Lung cancer treatment has significantly evolved in recent years, with advances in targeted therapies, immunotherapy, and personalized medicine revolutionizing patient outcomes. The integration of molecular profiling has enabled more precise, individualized treatment plans, particularly in non-small cell lung cancer (NSCLC). Despite these advances, challenges like drug resistance and the management of advanced-stage disease persist. Ongoing research into novel biomarkers and therapeutic combinations holds promise for overcoming these hurdles. Future perspectives focus on early detection, leveraging liquid biopsies, and enhancing patient response through multi-modal therapies, offering hope for improved survival rates.

Conclusion:

In conclusion, while significant progress has been made in the understanding and treatment of lung cancer, numerous challenges remain. Early detection, personalized treatment options, and improving access to care remain focal points in the ongoing battle against this deadly disease. Future research is crucial to overcoming treatment resistance, addressing global disparities, and developing innovative therapies to improve the prognosis of lung cancer patients. With continued advancements in molecular diagnostics, targeted therapies, and immunotherapy, the outlook for lung cancer management is gradually improving, providing hope for better outcomes in the coming years.

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Review Article

E-cigarette and Oral Health: Masked Dangers to the Mouth

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Abstract:

Electronic nicotine delivery systems (ENDS) also referred to as e cigarettes have become increasingly popular, as a harmful option compared to traditional smoking. These gadgets produce a vapour by warming up e fluids that consist of nicotine, propylene glycol, vegetable glycerine, flavourings and additional substances. Although companies advertise them as alternatives to smoking cigarettes studies show that e cigarettes can actually have effects on oral health. These include disturbing the balance of bacteria in the mouth reducing saliva production and changing the pH levels. These changes create a breeding ground for tooth decay, gum disease and injuries to the tissues inside the mouth. Furthermore harmful substances like metals and compounds found in e cigarette vapours worsen these issues, causing inflammation and stress on tissues. The inflammation of gums, shifts in bacteria populations and tissue damage seen from e cigarette use are quite similar, to those found among cigarette smokers. Furthermore the overall impact of vaping extends, beyond respiratory issues to encompass broader health issues. With the rising popularity of e cigarettes among both people and adults it is crucial to implement awareness campaigns and preventive measures. Actions such as community outreach programs, social media efforts and educational initiatives within schools aim to address misunderstandings about vaping. Healthcare providers also have a role to play by informing patients about the risks associated with vaping and emphasizing the need for strict regulations and ongoing research to minimize its impact, on public health.

Keyword: *E-cigarette, Oral health, effect*

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Introduction:

E-cigarettes, or Electronic Nicotine Delivery Systems like vape devices with a replaceable liquid cartridge, inhale through aerosolization of the liquid, more commonly known as e-liquid or vape juice. The principal parts of an e-cigarette are a battery, heating element a coil, and some absorbing e-liquid lamp or mouthpiece. When the device is activated, usually by inhaling or pressing a button, the battery powers the coil, which heats the e-liquid absorbed by the reed, turning it into a respirable aerosol.[1,2]

According to recent studies, uses of e-cigarette among adult & young is increasing than traditional cigarette. In 2021, about 3 in 10 (29.4%) adults who vaped also smoked cigarettes.[3]

This signifiable shifting is in the realm of public health, as e-cigarettes are frequently marketed as a less harmful alternatives for conventional cigarettes, resulting in widespread adoption despite the improper understanding of their long-term impacts both oral & general health.[4]

However, research indicates that e-cigarette can disturb the oral microbiome, reduce saliva production& alter oral pH, fostering condition that promote oral disease such as caries & periodontal disease.[5] These hidden risks actually mask the

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dangers to the mouth. By shedding light on the misconceptions surrounding e-cigarettes, this review article seeks to assist healthcare professionals in providing accurate information to patients and raise public awareness about the risks linked to vaping.

Composition of E-Cigarettes:

Nicotine is the primary addictive component found not in tobacco cigarettes but many e- cigarettes; however the levels of concentration vary among different brands and models of e cigarettes.[6,7]

Propylene Glycol (PG) and Vegetable Glycerine (VG) are substances employed as carriers to produce the vapour observed with e cigarettes; PG contributes to the sensation known as a "throat hit" whereas VG enhances vapour thickness.[8,9]

E cigarettes come in a variety of flavours, like fruity and minted options along with dessert choices that can impact tissues negatively due to chemicals such as diacetyl and cinnamaldehyde, among others mentioned earlier in the text.[10,11]

Nickel and chromium are, among the metals that can leak from heating coils of cigarettes and turn into aerosols when used with them; this can result in their accumulation, within the mouth cavity.[12,13]

Carboxylic Compounds (Formaldehyde) Acetaldehyde. Carboxylic compounds are formed when PG and VG break down at voltages and temperatures, during the heating process.[14,15]

E-cigarette and Oral Health:

• Effects on Oral Mucosa:

Although e-cigarette aerosols appear to be less damaging than that of conventional cigarette, the former are destructive towards human gingival mucosa. E-cigarettes have several detrimental effects on the human oral mucosal structures. The vaped e-liquid contains nicotine at a level of 18 mg/ml. It was observed that e-cigarettes with or without nicotine reduced formation of type IV collagen and laminin. On that, it leads to tissue damage of structure. The oral mucosa is the mucous membrane that covers all oral structures except the clinical crowns of teeth. It is composed of two layers: a. the stratified squamous epithelium and b. the supporting connective tissue, called lamina propria. There are several morphological and biological changes when gingival mucosa is healthy. Because of this, epithelial layers are organized in multilayer structure. The researchers observed changes in the epithelium within two days of exposure to e-cigarettes. The bonds between the basal cells broke apart and the basal layer expanded. There is thickening of the stratum corneum. According to a recent study, e-cigarettes have been found to be a cause of inflammation in the lung by an interference in systemic signaling of inflammation. [15]

• Effect on Periodontal health:

A change in the host response that results from vaping leads to the release of periodontal microbial flora and inflammatory cytokines that induce and advance the disease known as periodontal disease. It increases the risk of periodontal disease initiation and its progression. This area has been the focus of extensive investigation. Outcomes from studies on inflammatory mediators, the composition of periodontopathic microbial flora associated with the shoot's disease and clinical markers of periodontal disease. Periodontal health of conventional smokers, as well as inflammatory mediators in their body is significantly worse compared to vapers and non-smokers. Vaping impairs the periodontium by altering the immunological and inflammatory response, changing the microbial flora to favour periodontal infections, and therefore altering the soft tissue's ability to repair. According to reports, heavy vapers oral microbial composition is comparable to that of heavy cigarette smokers, but it differs from that of non-smokers with the same stage of periodontitis. Probing depth (PD), plaque index (PI), bleeding index (BI), and clinical attachment loss (CAL) were all higher in patients with periodontal inflammation. Comparing the periodontal treatment requirements of e-cigarette and traditional smokers, it was found that the conventional smokers required better care than the vape users. The prevalence of calculus deposits among vapers (50%) and the cigarette smokers (75%) with pockets ≥6 mm. Of those, 90% had healthy periodontal tissues and had all their teeth intact.[16]

• E-cigarette and Systemic Health:

According to a recent study, e-cigarettes have been considered a cause of inflammation in the lung through an interference in the systemic signalling of inflammation. E-cigarettes impact damaging tissue remodelling, oxidative stress, and inflammatory

reactions. Continued exposure of mediators may foster a higher burden on disease progress in lung and cardiovascular systems.[17] The use of e-cigarettes has been linked with an increase in pressure and heart rate. After switching from tobacco to e-cigarettes with or without nicotine, tobacco users showed improved arterial stiffness (PWV-dependent) within a month. Whereupon, there was also a significant improvement in endothelial function as evaluated through flow-mediated dilatation (FMD).Some researchers have surveyed e-cigarettes, manufactured half of propylene glycol and half of vegetable glycerine, on non-smokers and healthy volunteers who are free from any lung diseases, but are functioning under vaporized smokeless mode. After a month of the study, they reported that propylene glycol kept inducing a low-grade lung inflammation, but did not observe any alteration in pulmonary cells' gene expression. In short-term inhalation studies with e-cigarette aerosol, genetic changes were noted in the small airway epithelial cells, alveolar macrophages, and lower airway mononuclear phagocytes in the research performed on healthy nonsmokers using both nicotine-containing and nicotine-free e-cigarettes. The results regarding urine concentrations of pyruvate, 3-hydroxyisovalerate, and propylene glycol showed decreased urinary excretion after quitting e-cigarettes, with and without nicotine. E-cigarettes seem to have no influence over weight or body mass.[18]

Interplay between oral health and overall health:

E-cigarettes notably affect oral health, which in turn has a cascading impact on overall health. This intricate relationship highlights the importance of recognizing the interconnectedness of oral& systemic conditions. The content of e-cigarettes mainly affect our various bodily system. Main ingredient Nicotine and others (flavouring agents, carbonyls) consequently causes of dry mouth by reducing saliva production whereas saliva plays a fateful role in protecting oral tissues ,aiding digestion & preventing bacterial growth, gingival diseases by decreasing blood flow to the gums, delaying healing & promoting inflammation, severe gum infection linked to tooth loss , throat irritation a weakened immune response in oral tissues.[6,7] Gum diseases related to vaping elevate levels of inflammatory markers like C-reactive protein, which are associated

Comparison between Conventional Cigarette and E-cigarette:

Points	Conventional Cigarette	E-cigarette
1.Ingredient	It has tobacco	E-cigarettes do not have tobacco
2.Nicotine	Traditional cigarettes contain nicotine derived from tobacco plants.	Synthetic nicotine is present in most vapes
3.Inhalation	Smoke it through the combustion of aerosol[19]	Inhale aerosol via vaporization.
4.UC concentration	It's more common to have UC in conventional smokers. [20]	Smoking e-consumers have much decreased UC.
5.Neurological disorder	Stroke is more frequent in regular smokers.[21]	Dual smokers and e-cigarette users have a lower risk of stroke.
6.Popularity	Traditional cigarettes were the most common used prior to 2004	E-cigarette use mainly trends toward the millennial generation. [22]
7.Effect on lung	Cigarettes also changed the lung structure.	Exposure of e-cigarette vapour led to very important changes within the architecture and performance of alveoli, reminiscent of spherical enlargement of the alveolar area and rupture foray formation.[23]
8.Usage Restriction	Not allowed in many public spaces.	Use is mostly restricted.[24]

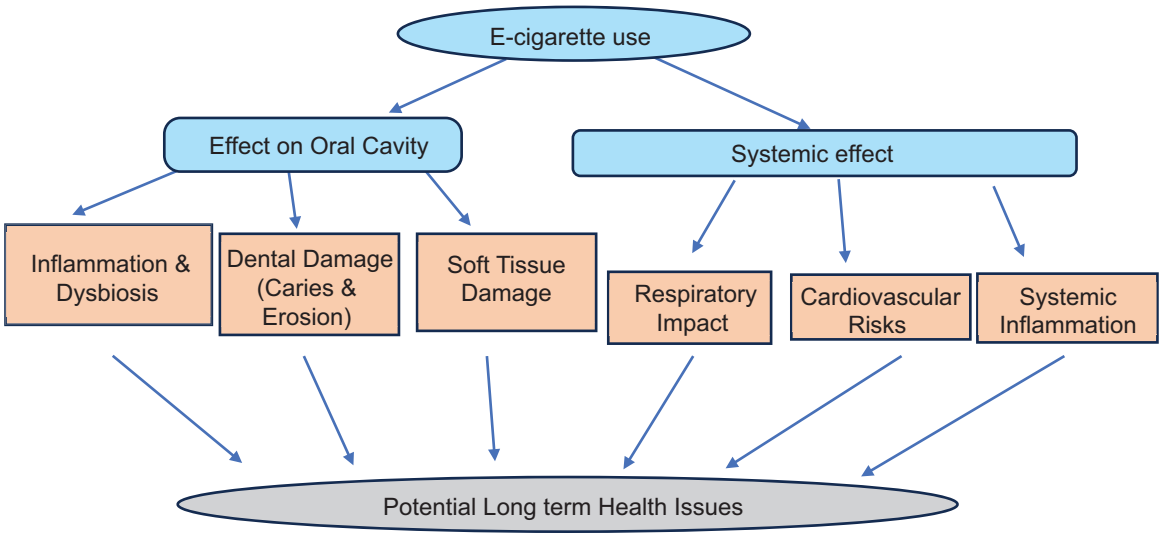

Figure 1: *Effect of E-cigarette*

with atherosclerosis and heart attacks, poor oral health increases the risk of entering of pathogens in the bloodstream, leading to infections like endocarditis, as E-cigarette creates an aerosol that users inhale & this inhalation containing oral bacteria can contribute to respiratory diseases like chronic bronchitis & pneumonia, coughing, wheezing, and shortness of breath, gastrointestinal discomfort also impacts on brain development & linked to adverse pregnancy outcomes, such as low birth weight & preterm delivery. [1-14,25-30]E-cigarette aerosols can attain high temperatures during use, resulting to the formation of carbonyl compounds (e.g., formaldehyde, acetaldehyde), which are known carcinogens. Prolonged exposure to these compounds may increase the risk of cancer in users.[31]

Awareness & Prevention:

•Community Outreach:

Public Engagement Programs: Host educational sessions to raise awareness among the community regarding the oral health hazards associated with e cigarettes highlighting the marketing tactics employed by vaping companies to downplay concerns, about health risks.[32-37]

Community Education Initiatives: Arrange seminars to spread awareness about vaping-related oral health issues and expose deceptive marketing tactics by e-cigarette manufacturers.[32,34]

Local Awareness Campaigns: Host events to educate neighborhoods on the hidden oral dangers of vaping and the unethical promotion strategies employed by vaping brands.[32,35]

Warnings on Packaging: Adding explicit warnings on e-cigarette packaging about their impact on oral health could deter use.

•Social Media Campaigns:

Digital Awareness Drives: Post visuals, short clips, and expert advice from dental specialists on social media platforms like Instagram and TikTok to educate a younger demographic.[32-37]

Online Advocacy Initiatives: Share engaging content such as charts, animations, and narratives from dental professionals to raise awareness about vaping and its impact on oral health.[33-37]

Virtual Awareness Programs: Disseminate interactive content and expert insights through platforms popular among the youth to highlight the risks vaping poses to oral health.[32-37]

•School Programs:

Educational Workshops for Schools: Incorporate lessons on vaping and its oral health implications into classroom activities to inform students about its harmful effects.[35,37]

School-Based Awareness Campaigns: Include topics on the oral health consequences of e-cigarettes in school curricula to equip teens with long-term knowledge.[32-37]

Student-Focused Health Education Initiatives: Organize sessions within schools that address

vaping's dangers and provide students with tools to make informed choices.[33-37]

Prevention Strategies:

Education and Early Intervention: Regular dental visits for checkups and cleanings can catch problems early. Dentists should counsel patients who vape on its risks to oral health.[32-37]

Behavioural Support for Quitting: Use support groups, apps, and hotlines to help individuals reduce dependency on vaping products.[32-37]

Alternatives to Nicotine Products: Encourage the use of nicotine replacement therapies (NRT) such as gum or patches that do not harm the oral cavity.[33-35]

Enhanced Dental Care Regimen:

Brush at least twice daily with fluoride toothpaste. Floss daily to remove plaque.

Mouth rinses with alcohol free mouthwash to maintain moisture and bacteria free.[32-37]

Conclusion:

In conclusion, while e-cigarettes are still being marketed as a 'safer' alternative to the conventional stick, it must be clear that the impact is not that minimal as portrayed. With the nicotine level found in e-cigarettes, serious illnesses such as lung diseases, cardiac issues and even addiction can occur. The allure of flavours and the misunderstanding of e-cigarette safety have led many youth and even non-smokers to vape, but studies have shown that e-cigarettes act as a starter for nicotine dependence in youngsters to grow. To mitigate the dangers associated with e-cigarette use, more policies, awareness and further investigation are thus needed.

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Case Report

A Case Report of Severe Epistaxis during Pregnancy

Begum KS[1] , Khan NU[2]

Abstract

Epistaxis is a common problem during pregnancy, due to increased nasal mucosal vascularity. Massive and severe epistaxis is an uncommon event in pregnancy. It could be life threatening and could affect the normal pregnancy course. The best management is still on debate; it could be medical, conservative or surgical. Pregnancy termination often is problem solving. Hormonal changes during pregnancy affects nasal physiology. Vaginal delivery, labour induction or cesarean section are all suitable, after hemodynamic stabilization of pregnant woman. We report a case and review the available literature. Few cases of severe epistaxis not associated with nasal lesions or clotting disorders, were described in the literature. The authors reported a case of severe epistaxis in a pregnant patient, exploring all the different possible management options.

Key words: *Epistaxis, Pregnancy*

(MH Samorita Med Coll J 2024; 7(1): 46-49)

Introduction

Epistaxis is a common problem during pregnancy, due to an increased nasal mucosa vascularity. The prevalence in pregnant women is 20.3% compared with 6.2% in non-pregnant ones [1]. Large volume epistaxis is rare for patients without preexisting risk factors or conditions, such as the use of anticoagulants or blood clotting disorders[2]. Few cases of severe epistaxis during pregnancy, not associated with nasal lesions or clotting disorders, were described in the literature, demonstrating a lack of familiarity regarding the appropriate management options in these clinical conditions. We report a case of severe, prolonged epistaxis in a pregnant patient, during the third trimester, with no clear risk factors. We explored the different possible management options in this challenging case and we assume our experience may help in future similarly clinical situations.

Case Report

A 28-year-old primigravida, who was 38 weeks pregnant, presented with spontaneous severe right-sided epistaxis. Her first episode had started the previous week, with about seven to eight episodes a day. Her medical history was unremarkable. She had no personal or family history of bleeding tendencies, and she was not taking any regular medications. Her blood pressure was within normal ranges. She reported no previous episodes of epistaxis in her life. Routine blood tests were normal during the pregnancy. We tried to control the bleeding first by administrating intravenous (IV) tranexamic acid, without resolution. So, we contacted the otolaryngologist, who performed an endoscopy, showing a right nasal floor bleeding varix. He decided for an anterior nasal packing: he inserted a tampon (merocel pack) carefully along the floor of the right nostril, where it expanded on contact with blood. After the nasal tampon was been inserted, the otolaryngologist wetted it with a small amount of topical vasoconstrictor in order to hasten effectiveness. This procedure was repeated three times, inserting a total of six tampons (four in right nostril and two in the left one). Nevertheless, this conservative management of epistaxis failed. Within 4 hours of admission, patient's haemoglobin had dropped from13.5 to 7gm/dl and she had a further

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bleed from the right nostril. The otolaryngologist did not consider a posterior nasal packing because the endoscopy showed an anterior bleeding site. A new endoscopy to locate the exact site of bleeding for direct cauterization was not indicated in acute setting due to vascular congestion and mucosal oedema. Patient clotting studies were within the normal range. A blood transfusion was required, using two packed red blood cells (PRBCs). The patient also started antibiotic therapy with IV Ceftriaxone 2 g every 12 hours. Cardiotocography (CTG), biophysical profile, and Fetal Doppler demonstrated fetal well-being. During her second day of admission, repeated blood tests showed that her haemoglobin remained persistently low at 7.5 g/dl, despite the recent blood transfusion. The patient became tachycardic (rate 157 bpm), tachypnoeic (22 breaths per minute), and asthenic. After accurate counselling with the patient and considering the failure of conservative treatment, we thereby decided for a surgical management of pregnancy. The patient delivered a healthy baby boy weighing 3.2 kg. The execution of caesarean section was followed by an immediate resolution of the nasal bleeding. The patient was discharged from the hospital with nasal packing, in order to ensure the formation of an adequate clot. Five days later, the otolaryngologist performed an endoscopy to locate the exact site of bleeding for direct cauterization.The patient experienced no other episodes of epistaxis.

Discussion

Epistaxis in pregnancy is not so uncommon and self-limiting. Few cases of severe epistaxis during pregnancy were described in literature (Table 1).

The prevalence of epistaxis in pregnant women is more than three times than in nonpregnant ones [1]. Several conditions predispose to epistaxis during pregnancy. In particular, the elevated oestrogen level increase the vascularity of the nasal mucosa[11], which may potentiate and prolong the bleeding. Progesterone causes an increase in blood volume, which may exacerbate both vascular congestion and hence bleeding, and may mask blood loss in the event of severe epistaxis, due to apparently effective cardiovascular compensation[12]. Placental growth hormone has systemic effects, including vasodilation [12]. Indirect hormonal effects include vascular

Table 1: Cases of severe epistaxis during pregnancy not associated with nasal lesion or clotting disorders.

Author/year	Number of patients	Management of epistaxis	Management of pregnancy
Maria Grazia Piccioni et al 2018[2]	1	IV ∗ Tranexamic acid; Nasal packing; bipolar cautery	Emergency caesarean section
Green L K 1974 [3]	1	Local pressure; nasal packing	Emergency caesarean section
El Goulli M 1979 [4]	1	Nasal packing	Vaginal delivery
Howard DJ 1985 [5]	1	Nasal packing; bipolar diathermy; external carotid artery ligation; nasal balloon	Emergency caesarean section
Braithwaite J M[6]	1	Nasal packing; nasal balloon	Emergency caesarean section
Cooley 2002 [7]	1	Nasal packing; nasal balloon	Emergency caesarean section
Hardy 2008[8]	1	Nasal packing; bipolar cautery; artery Ligation	Vaginal delivery
Cornthwaite K 2013 [9]	1	Nasal packing; bipolar diathermy	Elective caesarean section
Crunkhorn RE 2014 [10]	1	Nasal packing; sphenopalatine artery (SPA) ligation; bipolar cautery; bipolar diathermy	Elective caesarean section
Begum KS, Khan NU 2024	1	IV ∗ Tranexamic acid ;Nasal packing; bipolar cautery	Emergency caesarean section

Footnotes: IV = intravenous.

inflammatory and immunological changes that may predispose to nasal hypersensitivity and hence to problems such as nasal granuloma gravidarum [13.] In general, delivery or fetal death causes immediate cessation of the nasal bleeding, because some of the underlying factors, such as congestion and hyperemia, disappear. We excluded cases of epistaxis associated with nasal lesions, like granuloma gravidarum [9] and nasal polyp [14], or clotting disorders [15]. Treatment of severe epistaxis must always consider conservative measures first-line, like IV tranexamic acid administration, anterior packing and bipolar cautery. If conservative treatment fails, two radical treatments have to be considered: the one is surgical, in the form of vessel ligation, and the other is obstetrical and is termination of the pregnancy. In the case, the patient's clinical worsening and the failure of conservative treatment imposed an emergency caesarean section. The cervix was unfavorable for easy induction and a long induction of labor was considered contraindicated for this patient. Valsalva maneuvers could also aggravate the bleeding during labor, increasing the risk of fetal hypoxia.The decision to deliver was also influenced by the gestational age; in fact in the case of a preterm pregnancy, when maternal and fetal conditions are good, a conservative management is preferred, in order to avoid the possible risks associated with preterm birth. Fetal anemia is a well-known cause of antenatal fetal distress.The case report by Braithwaite JM et al.[5] demonstrated that rapidly developing severe maternal anemia, due to recurrent blood loss of nonplacental origin, even in the absence of maternal hypotension, can cause fetal distress.Case Reports in Obstetrics and Gynecology that Severe epistaxis is potentially life-threatening to both mother and fetus. This case highlights the importance of early recourse to ear, nose, and throat (ENT) referral, when epistaxis is unresponsive to simple measures. In general, when nasal lesions and clotting disorders cannot be identified, fetal delivery is considered curative, showing that hormonal changes during pregnancy may lead to significant alterations of nasal physiology,with oestrogen causing vascular congestion, mucosal oedema, and rhinitis, known as the "rhinitis of pregnancy". Moreover, pregnancy is associated with significant anatomic and physiologic remodeling of the cardiovascular system. Starting at 6-8 weeks of gestation and peaking at 32 weeks, maternal blood volume increases by 40–50% above nonpregnant volumes [16, 17]. Termination of pregnancy resolves hypervolemia and hormonal changes; in fact in all the cases reported in Table 1, we can observe a nasal bleeding resolution after delivery.

Conclusion:

Treatment of severe epistaxis must always consider conservative measures first-line with early recourse to otolaryngologist. In general, delivery of the fetus is considered curative.

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Abstract From Current Literatures

(MH Samorita Med Coll J 2024; 7(1): 50-53)

Prevalence, years lived with disability, and trends in anaemia burden by severity and cause, 1990-2021: findings from the Global Burden of Disease Study 2021

GBD 2021 Anaemia Collaborators

Collaborators Expand

- PMID: 37536353
- PMCID: PMC10465717
- DOI: 10.1016/S2352-3026(23)00160-6

Background: Anaemia is a major health problem worldwide. Global estimates of anaemia burden are crucial for developing appropriate interventions to meet current international targets for disease mitigation. We describe the prevalence, years lived with disability, and trends of anaemia and its underlying causes in 204 countries and territories.

Methods: We estimated population-level distributions of haemoglobin concentration by age and sex for each location from 1990 to 2021. We then calculated anaemia burden by severity and associated years lived with disability (YLDs). With data on prevalence of the causes of anaemia and associated cause-specific shifts in haemoglobin concentrations, we modelled the proportion of anaemia attributed to 37 underlying causes for all locations, years, and demographics in the Global Burden of Disease Study 2021.

Findings: In 2021, the global prevalence of anaemia across all ages was 24·3% (95% uncertainty interval [UI] 23·9-24·7), corresponding to 1·92 billion (1·89-1·95) prevalent cases, compared with a prevalence of 28·2% (27·8-28·5) and 1·50 billion (1·48-1·52) prevalent cases in 1990. Large variations were observed in anaemia burden by age, sex, and geography, with children younger than 5 years, women, and countries in sub-Saharan Africa and south Asia being particularly affected. Anaemia caused 52·0 million (35·1-75·1) YLDs in 2021, and the YLD rate due to anaemia declined with increasing Socio-demographic Index. The most common causes of anaemia YLDs in 2021 were dietary iron deficiency (cause-specific anaemia YLD rate per 100 000 population: 422·4 [95% UI 286·1-612·9]), haemoglobinopathies and haemolytic anaemias (89·0 [58·2-123·7]), and other neglected tropical diseases (36·3 [24·4-52·8]), collectively accounting for 84·7% (84·1-85·2) of anaemia YLDs.

Interpretation: Anaemia remains a substantial global health challenge, with persistent disparities according to age, sex, and geography. Estimates of cause-specific anaemia burden can be used to design locally relevant health interventions aimed at improving anaemia management and prevention.

Coffee Consumption and Risk of Hypertension in Adults: Systematic Review and Meta-Analysis

Fahimeh Haghighatdoost [1], Parisa Hajihashemi [2], Amanda Maria de Sousa Romeiro [3], Noushin Mohammadifard [4], Nizal Sarrafzadegan [1 5], Cesar de Oliveira [6], Erika Aparecida Silveira [3]

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- PMID: 37447390
- PMCID: PMC10347253
- DOI: 10.3390/nu15133060

Objectives: The association between coffee intake and hypertension (HTN) risk is controversial. Therefore, this systematic review and meta-analysis aimed at summarizing the current evidence on the association of coffee with hypertension risk in observational studies.

Methods: PubMed/Medline and Web of Science were searched for observational studies up to February 2023. Observational studies which assessed the risk of HTN in the highest category of coffee consumption in comparison with the lowest intake were included in the current meta-analysis (registration number: CRD42022371494). The pooled effect of coffee on HTN was evaluated using a random-effects model.

Results: Twenty-five studies i.e., thirteen cross-sectional studies and twelve cohorts were identified to be eligible. Combining 13 extracted effect sizes from cohort studies showed that higher coffee

consumption was associated with 7% reduction in the risk of HTN (95% CI: 0.88, 0.97; I^2: 22.3%), whereas combining 16 effect sizes from cross-sectional studies illustrated a greater reduction in HTN risk (RR = 0.79, 95% CI: 0.72, 0.87; I^2 = 63.2%). These results varied by studies characteristics, such as the region of study, participants' sex, study quality, and sample size.

Conclusions: An inverse association was found between coffee consumption and hypertension risk in both cross-sectional and cohort studies. However, this association was dependent on studies characteristics. Further studies considering such factors are required to confirm the results of this study.

Keywords: blood pressure; coffee; hypertension; meta-analysis.

Guidelines and Recommendations for Laboratory Analysis in the Diagnosis and Management of Diabetes Mellitus

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Affiliations Expand

- PMID: 37471273
- PMCID: PMC10516260
- DOI: 10.2337/dci23-0036

Background: Numerous laboratory tests are used in the diagnosis and management of diabetes mellitus. The quality of the scientific evidence supporting the use of these assays varies substantially.

Approach: An expert committee compiled evidence-based recommendations for laboratory analysis in screening, diagnosis, or monitoring of diabetes. The overall quality of the evidence and the strength of the recommendations were evaluated. The draft consensus recommendations were evaluated by invited reviewers and presented for public comment. Suggestions were incorporated as deemed appropriate by the authors (see Acknowledgments). The guidelines were reviewed by the Evidence Based Laboratory Medicine Committee and the Board of Directors of the American Association for Clinical Chemistry and by the Professional Practice Committee of the American Diabetes Association.

Content: Diabetes can be diagnosed by demonstrating increased concentrations of glucose in venous plasma or increased hemoglobin A1c (HbA1c) in the blood. Glycemic control is monitored by the people with diabetes measuring their own blood glucose with meters and/or with continuous interstitial glucose monitoring (CGM) devices and also by laboratory analysis of HbA1c. The potential roles of noninvasive glucose monitoring, genetic testing, and measurement of ketones, autoantibodies, urine albumin, insulin, proinsulin, and C-peptide are addressed.

Summary: The guidelines provide specific recommendations based on published data or derived from expert consensus. Several analytes are found to have minimal clinical value at the present time, and measurement of them is not recommended.

Effects of reduced-risk nicotine-delivery products on smoking prevalence and cigarette sales: an observational study

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Affiliations Expand

- PMID: 37795840
- DOI: 10.3310/RPDN7327

Background: It is not currently clear what impact alternative nicotine-delivery products (electronic cigarettes, heated tobacco products and snus) have on smoking rates and cigarette sales.

Objective: To assess whether access to these products promotes smoking in the population.

Design and data sources: We examined associations of alternative nicotine product use and sales with smoking rates and cigarette sales overall, and in different age and socioeconomic groups, and compared smoking prevalence over time in countries with contrasting regulations of these products. For electronic cigarettes, we examined data from countries with historically similar smoking trajectories but differing current electronic cigarette regulations (United Kingdom and United States of

America vs. Australia, where sales of nicotine-containing electronic cigarettes are banned); for heated tobacco, we used data from countries with state tobacco monopolies, where cigarette and heated tobacco sales data are available (Japan, South Korea), and for snus we used data from Sweden.

Analysis methods: We pre-specified dynamic time series analyses to explore associations between use and sales of alternative nicotine-delivery products and smoking prevalence and cigarette sales, and time series analyses to compare trends of smoking prevalence in countries with different nicotine product policies.

Results: Because of data and analysis limitations (see below), results are only tentative and need to be interpreted with caution. Only a few findings reached statistical significance and for most results the Bayes factor indicated inconclusive evidence. We did not find an association between rates of smoking and rates of the use of alternative nicotine products. The increase in heated tobacco product sales in Japan was accompanied by a decrease in cigarette sales. The decline in smoking prevalence seems to have been slower in Australia than in the United Kingdom overall, and slower than in both the United Kingdom and the United States of America among young people and also in lower socioeconomic groups. The decline in cigarette sales has also accelerated faster in the United Kingdom than in Australia.

Limitations: Most of the available data had insufficient data points for robust time series analyses. The assumption of our statistical approach that causal interactions are more likely to be detected when longer-term changes are screened out may not apply for short time series and in product interaction scenarios, where short-term fluctuations can be caused by, for example, fluctuations in prosperity or product supplies. In addition, due to dual use, prevalence figures for smoking and alternative product use overlap. The ecological study design limits the causal inferences that can be made. Longer time periods are needed for any effects of exclusive use of the new products on smoking prevalence to emerge.

Conclusions: We detected some indications that alternative nicotine products are competing with cigarettes rather than promoting smoking and that regulations that allow their sales are associated with a reduction rather than an increase of smoking, but the findings are inconclusive because of insufficient data points and issues with the assumptions of the pre-specified statistical analyses.

Keywords: E-CIGARETTES; HARM REDUCTION; HEATED TOBACCO PRODUCT; PREVALENCE; SALES; SMOKING; SNUS.

ERS/ESICM/ESCMID/ALAT guidelines for the management of severe community-acquired pneumonia

Ignacio Martin-Loeches [# 1 2 3 4], Antoni Torres [# 5 6], Blin Nagavci [7], Stefano Aliberti [8 9], Massimo Antonelli [10], Matteo Bassetti [11], Lieuwe D Bos [12], James D Chalmers [13], Lennie Derde [14], Jan de Waele [15], Jose Garnacho-Montero [16], Marin Kollef [17], Carlos M Luna [18], Rosario Menendez [19], Michael S Niederman [19], Dmitry Ponomarev [20 21], Marcos I Restrepo [22], David Rigau [23], Marcus J Schultz [12 24 25], Emmanuel Weiss [26], Tobias Welte [27], Richard Wunderink [28]

Affiliations Expand

- PMID: 37012484
- PMCID: PMC10069946
- DOI: 10.1007/s00134-023-07033-8

Erratum in

- Correction: ERS/ESICM/ESCMID/ALAT guidelines for the management of severe community-acquired pneumonia.

Martin-Loeches I, Torres A, Nagavci B, Aliberti S, Antonelli M, Bassetti M, Bos LD, Chalmers JD, Derde L, De Waele J, Garnacho-Montero J, Kollef M, Luna CM, Menendez R, Niederman MS, Ponomarev D, Restrepo MI, Rigau D, Schultz MJ, Weiss E, Welte T, Wunderink R.Intensive Care Med. 2023 Aug;49(8):1040-1041. doi: 10.1007/s00134-023-07082-z.PMID: 37195462 **Free PMC article.** No abstract available.

Abstract

Purpose: Severe community-acquired pneumonia (sCAP) is associated with high morbidity and mortality, and whilst European and non-European guidelines are available for community-acquired pneumonia, there are no specific guidelines for sCAP.

Methods: The European Respiratory Society (ERS), European Society of Intensive Care Medicine (ESICM), European Society of Clinical Microbiology and Infectious Diseases (ESCMID), and Latin American Thoracic Association (ALAT) launched a task force to develop the first international guidelines for sCAP. The panel comprised a total of 18 European and four non-European experts, as well as two methodologists. Eight clinical questions for sCAP diagnosis and treatment were chosen to be addressed. Systematic literature searches were performed in several databases. Meta-analyses were performed for evidence synthesis, whenever possible. The quality of evidence was assessed with GRADE (Grading of Recommendations, Assessment, Development and Evaluation). Evidence to Decision frameworks were used to decide on the direction and strength of recommendations.

Results: Recommendations issued were related to diagnosis, antibiotics, organ support, biomarkers and co-adjuvant therapy. After considering the confidence in effect estimates, the importance of outcomes studied, desirable and undesirable consequences of treatment, cost, feasibility, acceptability of the intervention and implications to health equity, recommendations were made for or against specific treatment interventions.

Conclusions: In these international guidelines, ERS, ESICM, ESCMID, and ALAT provide evidence-based clinical practice recommendations for diagnosis, empirical treatment, and antibiotic therapy for sCAP, following the GRADE approach. Furthermore, current knowledge gaps have been highlighted and recommendations for future research have been made.

Notes & News

(MH Samorita Med Coll J 2024; 7(1): 54-55)

CME Presentations
(July-December 2023)

No.	Date	Department	Presenter	Topic
1.	12.07.2023	Microbiology	Dr. Oni Yasmin Dr. Sifat Rabbani Lecturer	Helicobacter pylori; Impact on human health
2.	09.08.2023	ENT & Head Neck Surgery	Dr. Sinthia Jannat Mou Assistant Registrar	Recent update in classification, diagnosis, investigation and treatment of Rhinosinusitis
3.	31.08.2023	Community Medicine	Dr. Taslima Akter Sumi Associate Professor	Global Warming, Climate Crisis and Bangladesh
4.	09.09.2023	Medicine	Dr. Nusrat Moon Dr. Md. Wahiduzzaman Dr. Ashfaq Mahmud Shivly Intern	An Update on Dengue Fever
5.	20.09.2023	Dermatology & Venereology	Dr. Md. Haroon Ur Rashid Consultant	Recalcitrant Scabies
6.	26.09.2023	Pharmacology and Therapeutics	Dr. Mahbuba Akter Lecturer	Anti diabetic drugs battling a silent killer
7.	10.10.2023	Physiology	Dr. Nahid Nazneen Lecturer Dr. Umme Summaiya Lecturer	Blood group & Transfusion of blood
8.	26.10.2023	Gynecology & Obstetrics	01. Dr. Sadiul Islam 02. Dr. Maisha Tasmim 03. Dr. Afsa Mirane Interns	Pelvic Inflammatory Disease – It's Impact on Female Reproductive Health.
9.	15.11.2023	Pathology	Dr. Tanushree Paul Senior Lecturer	Classification and Grading of Gastritis: The Updated Sydney System.
10.	21.11.2023	Pediatric Dentistry and Dental Public Health.	Dr. Saki Alam Urmi Assistant Professor & Head	Basic Dental Awareness for Children
11	29.11.2023	Orthopaedics.	Dr. Asif Ahmed Assistant Registrar	Management of Open Fracture.
12	13.12.2023	Intensive Care Unit	Dr. Md. Forkan Al Amin Senior Medical Officer	A patient with fever and shortness of breath
13	20.12.2023	Medicine	Dr. Sadia Afrin Dr. Umme Salma Nirjona Dr. Tarikul Islam Chowdhury Dr. Asma Akter Liza Interns	Diagnostic Challenges in the Arena of Clinical Medicine

Following students obtained honors in respective subjects against his/her name:

Name	Course	Type of Exam	Year of Exam	Subject
Promit Ishtehaar Dibyo	MBBS	1st Prof	2023	Anatomy
Radia Akter Zebu	MBBS	1st Prof	2023	Anatomy
Mehnaz Munira Mim	MBBS	2nd Prof	2023	Forensic Medicine
Farzana Sadia Keya	MBBS	2nd Prof	2023	Community Medicine
Monjur Mahamud Rakib	MBBS	2nd Prof	2023	Community Medicine
Nazifa Aysha Saiyara Khan	BDS	1st Prof	2023	General Anatomy
Rushnita Khan Rusha	BDS	1st Prof	2023	General Anatomy
Tazdia Alam Tajri	BDS	1st Prof	2023	Dental Anatomy
Ishtiaq Ahmmed	BDS	1st Prof	2023	General Anatomy