

DISSERTATION SYNOPSIS

1. Title:

Cost-Effectiveness of Screening Endoscopy in Preventing Gastrointestinal Cancers: A Review of Global Evidence

2. Introduction:

Gastrointestinal (GI) cancers, including esophageal, gastric, and colorectal cancers, represent a significant burden globally, particularly due to their late-stage detection and poor survival rates. Endoscopy, both upper GI and colonoscopy, plays a vital role in early detection of pre-malignant lesions, leading to timely intervention and better outcomes. However, the cost of screening and resource constraints often limit its widespread use, especially in low- and middle-income countries like India.

Evaluating the cost-effectiveness of endoscopic screening can aid in policy-making by balancing clinical benefits with economic sustainability. This study aims to systematically review global literature to assess whether screening endoscopy offers a cost-effective solution for GI cancer prevention.

3. Research Question:

Is screening endoscopy a cost-effective strategy for the early detection and prevention of gastrointestinal cancers across different healthcare settings?

4. Objectives:

- To review the role of screening endoscopy in the early detection of gastrointestinal cancers.
- To assess the cost-effectiveness of screening endoscopy using economic indicators such as QALY, DALY, and ICER.
- To compare cost-effectiveness outcomes across different countries and healthcare systems.
- To suggest recommendations for policy and practice, particularly in resource-limited settings.

5. Hypothesis:

Screening endoscopy is a cost-effective strategy for the early detection and prevention of gastrointestinal cancers, especially when targeted at high-risk populations.

6. Material and Methods:

Study Design:

Secondary research using a narrative or systematic literature review approach.

Setting:

This study will be conducted as part of the MBA dissertation at IIHMR and will not involve direct patient interaction.

Study Population:

Studies included in the review will focus on adult populations who underwent screening endoscopy (upper GI or colonoscopy) for cancer prevention.

Inclusion Criteria:

- Peer-reviewed articles published between 2010 and 2024
- Studies analyzing cost-effectiveness or economic evaluation of screening endoscopy
- Studies reporting QALY, DALY, ICER, or cost-saving benefits
- Articles in English

Exclusion Criteria:

- Non-English publications
- Studies unrelated to endoscopic screening or those focusing on non-cancer conditions

Study Tools:

Literature databases: PubMed, Cochrane Library, WHO reports, and Google Scholar.

Duration of Study:

March 18 – June 6, 2025

Sample Size:

A total of 15–20 relevant articles will be reviewed in-depth, based on inclusion criteria.

Sampling Technique:

Purposive sampling of articles that meet the defined criteria.

Data Collection Procedure:

- Search databases using keywords: “cost-effectiveness,” “screening endoscopy,” “GI cancer,” “QALY,” “ICER,” and “economic evaluation.”
- Screen titles and abstracts, followed by full-text reviews.
- Extract key data on study design, population, type of screening, cost metrics, and outcomes.

Operational Definitions:

- Screening Endoscopy: Use of endoscopy in asymptomatic individuals for early detection.
- Cost-Effectiveness: Economic evaluation that compares the cost and health outcomes of an intervention.
- QALY (Quality-Adjusted Life Years): A measure combining quantity and quality of life.

- ICER (Incremental Cost-Effectiveness Ratio): Ratio comparing cost difference to effectiveness difference.

7. Data Analysis Plan:

Data will be presented using descriptive statistics (e.g., summary tables, comparison charts). Where possible, cost-effectiveness outcomes such as QALY gained and ICER values will be tabulated and compared across countries. No statistical testing will be applied, as this is a literature review. Microsoft Excel or NVivo may be used for thematic analysis.

8. Ethical Considerations:

This is a secondary research study and does not involve human participants or patient data. However, all articles used will be properly cited. There will be no plagiarism, and intellectual property rights will be respected.

9. Implications of Research:

The findings of this study will be useful in informing healthcare decision-makers, especially in India, about the potential benefits of implementing cost-effective screening programs. It will also aid hospital administrators in understanding the long-term economic value of investing in endoscopy services for cancer prevention.

10. References:

1. Zauber AG, Lansdorp-Vogelaar I, et al. Cost-effectiveness of colonoscopy screening for colorectal cancer. *Gastroenterology*. 2011.
2. Inadomi JM, et al. Screening colonoscopy: Cost-effectiveness and policy implications. *JAMA*. 2012.
3. Sung JJ, et al. Screening for gastric cancer in high-risk populations: Asia-Pacific consensus. *Lancet Oncol*. 2014.