

REPORT ON
VIRTUAL WORKSHOP ON RESEARCH METHODOLOGY & BIOSTATISTICS
FOR
UNDERGRADUATE MEDICAL STUDENTS- 26-07-2024



ORGANIZED BY
DEPARTMENT OF EPIDEMIOLOGY
THE TAMIL NADU Dr.M.G.R. MEDICAL UNIVERSITY

Introduction:

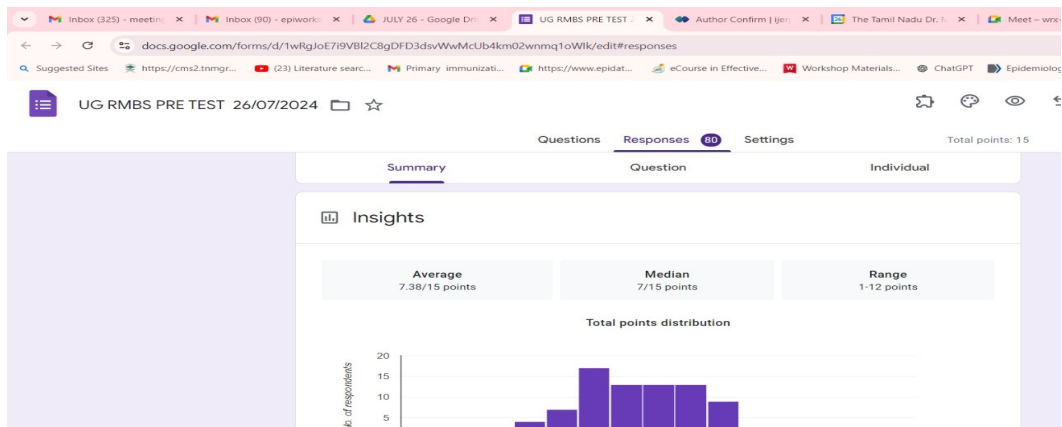
A series of one-day online workshops has been organized for third-year MBBS Part-I Undergraduate Medical students affiliated with The Tamil Nadu Dr. M.G.R. Medical University. The primary purpose of the workshop is to enhance the understanding and skills of participants in the various aspects of conducting research. This workshop aimed to provide a comprehensive overview of the research process, from the initial stages of formulating research ideas to the final stages of data analysis and interpretation. The main objective is to introduce participants to the fundamental concepts and principles of research methodology.

The workshop conducted on July 26, 2024, with 80 students from Government Medical College, Thiruppur in attendance. Sessions were held in the lecture halls on their campus, utilizing LCD screens for PowerPoint presentations. A nodal coordinator from the community medicine department was appointed by the institution to oversee the workshop.

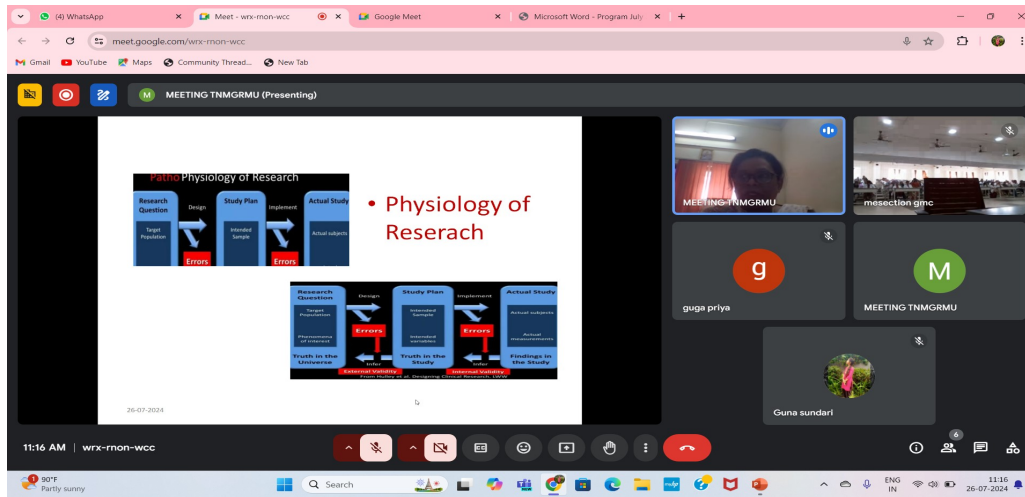




The workshop followed a well-organized agenda, starting off with a pre-test on Research Methodology and Biostatistics, accessible via QR code. The pre-test helps to assess the baseline knowledge of participants. The pretest result was explained to participants.



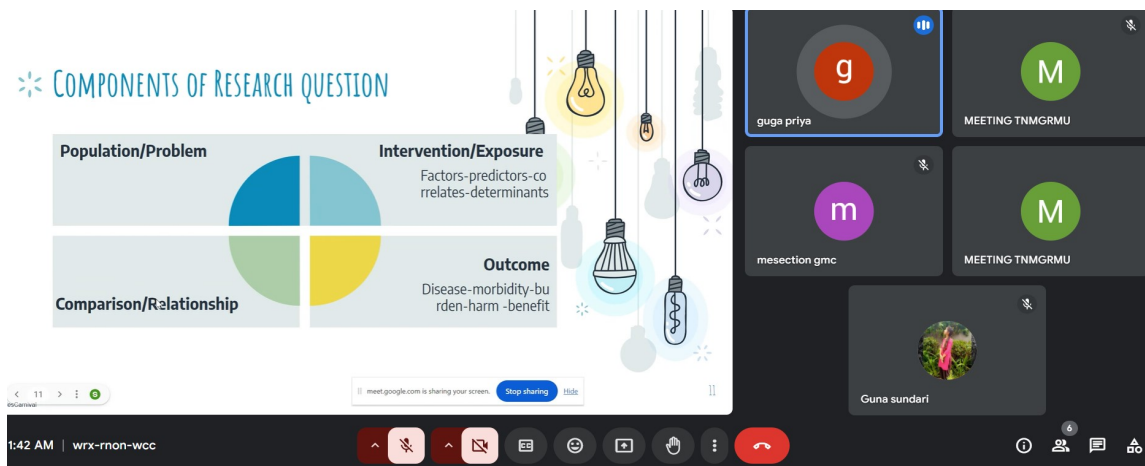
The introductory session of the research methodology workshop was presented by Dr. Jasmine S. Sundar, Senior Assistant Professor in the Department of Epidemiology. Dr. Jasmine began by explaining the importance and history of research, emphasizing its role in advancing knowledge and improving public health outcomes. She then outlined the key ideas and objectives of the workshop, which is designed to equip participants with essential research skills. The workshop is structured around five main skill sessions:



Session: Research Ideas /Questions & Objective

Speaker: Dr.Guga Priya, Prof. Dept of Anatomy, AIIMS,Nagpur

The first session of the research methodology workshop was dedicated to developing research ideas, formulating research questions, and setting clear objectives. The session aimed to equip participants with the necessary skills to identify relevant research topics and translate them into specific, actionable questions and objectives.



Active participation of students

The image shows a Slido poll titled "In your opinion, what is the most important aspect to focus on while you think about doing research?". The poll results are displayed as a word cloud with the following categories and their relative importance:

- Identify the problems and proper data collection
- Reliability and information
- Safety
- Data collection
- Information
- Content
- Reliability
- Interesting
- Future outcome
- Utilisation of resources
- Reliable
- Needy
- Interpretation
- Surveillance
- What does it solve
- Different information
- Relevant data
- Idea
- Scientific research
- Unknown facts
- Record maintenance
- Do better
- Transparency
- Proper screening protocols
- Objectives
- Death
- Important
- Evidence
- Need of people
- Outcome
- Work
- Determine
- Design
- Findings
- Sample size
- Exploring

Below the poll, there is a QR code and the text: "Join at slido.com #4108 603". To the right, a Zoom meeting interface is visible with participants: guga priya, MEETING TNMGRMU, mesection gmc, MEETING TNMGRMU, and Guna sundari.

Session 2: Searching and organizing literature

Speaker: Dr. Kathirvel, Associate Professor, Department of Community Medicine, School of Public Health, PGIMER, Chandigarh

In this session, Dr. Kathirvel, Associate Professor, explained how to use PUBMED for searching and organizing research articles. He included a live demonstration of MEDLINE and PUBMED, as well as a tutorial on citing references in Word documents.

The image shows a presentation slide titled "MEDLINE and PubMed". The slide content is as follows:

MEDLINE and PubMed

The U.S. NLM bibliographic database of journal articles (1964)-Public access since 1996

Systematically indexed using subject headings (MeSH)

PubMed: A search engine for MEDLINE

Over 37 million records

~82% is MEDLINE

Create Account

PubMed Central® (PMC, 8m)

Principles of Literature Search using PubMed

- Don't do Phrase Search: Automatic term mapping
- Do MeSH search: MeSH Database [MeSH]
- Do Field Search: Synonym terms [Ti, Taab, Jour, An]
- Use Boolean Operators to combine MeSH and Field search [AND, OR, NOT]

Developed by National Center for Biotechnology Information (NCBI) at NLM

Over 26 million records

90% is MEDLINE (has citations not yet indexed)

70% with an abstract

Free Full-text links (33% articles in last five years)

5200 journals and 40 languages

PubMed Central® (PMC) is a free full-text archive of biomedical and life sciences journal literature at the U.S. National Institutes of Health's National Library of Medicine (NIH/NLM). In keeping with NLM's legislative mandate to collect and preserve the biomedical literature, PMC serves as a digital counterpart to NLM's extensive print journal collection.

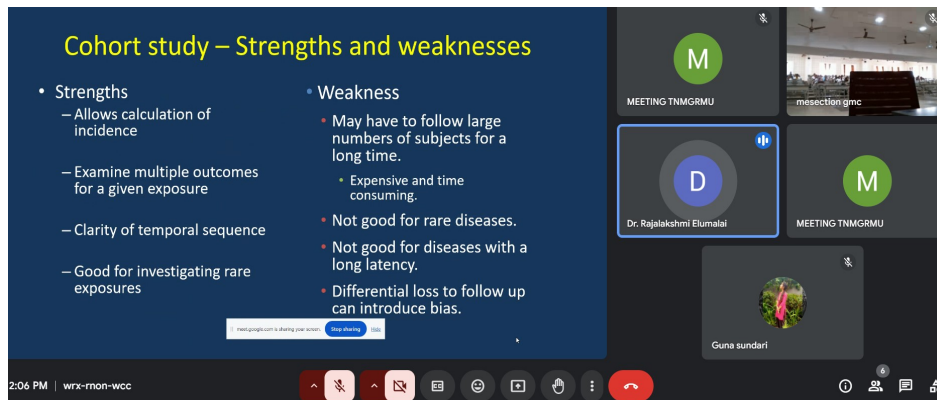
MEDICAL Literature Analysis and Retrieval System (MEDLARS)

Below the slide, a Zoom meeting interface is visible with participants: selv kathir, MEETING TNMGRMU, mesection gmc, MEETING TNMGRMU, and Guna sundari.

Session 3 : Research Design

Speaker: Dr. E. Rajalakshmi, Research Consultant, TANCAM

This session emphasized the significance of methodically planning and structuring research studies. Participants explored various research designs, including experimental, observational, and qualitative approaches, and learned how to select the most suitable design for their research questions.



The screenshot shows a Zoom meeting interface. On the left, a slide titled "Cohort study – Strengths and weaknesses" is displayed. The slide content is as follows:

- Strengths**
 - Allows calculation of incidence
 - Examine multiple outcomes for a given exposure
 - Clarity of temporal sequence
 - Good for investigating rare exposures
- Weakness**
 - May have to follow large numbers of subjects for a long time.
 - Expensive and time consuming.
 - Not good for rare diseases.
 - Not good for diseases with a long latency.
 - Differential loss to follow up can introduce bias.

On the right side of the screen, there is a grid of video thumbnails for participants. The thumbnails include:

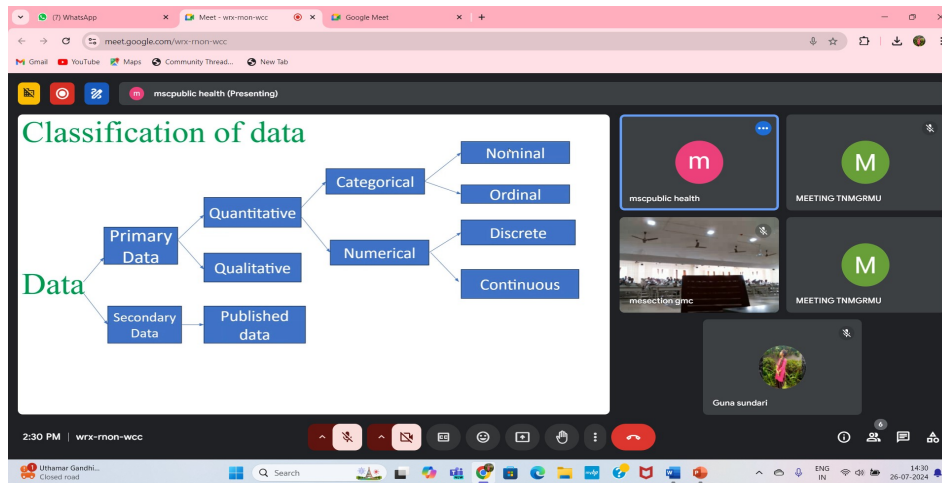
- A green circle with the letter 'M' (MEETING TNMGRMU).
- A thumbnail for 'miesection gmc' showing a room.
- A blue circle with the letter 'D' (Dr. Rajalakshmi Elumalai).
- A green circle with the letter 'M' (MEETING TNMGRMU).
- A thumbnail for 'Guna sundari' showing a person in a field.

The bottom of the screen shows the Zoom control bar with icons for mute, video, chat, and other functions. The time is 2:06 PM and the meeting ID is wxr-rnon-wcc.

Session 4 : Basics Bio- statistics in Health research

Speaker: Dr. Paridayal, Assistant professor, Department of statistics, Madras Christian College

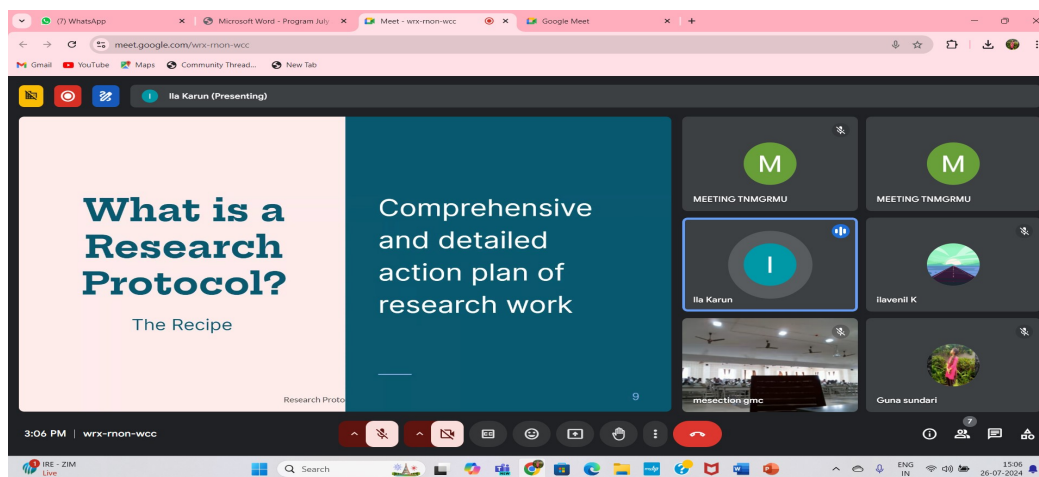
Dr. Paridayal taught statistics in health research during the session. Participants were introduced to key statistical concepts including mean, median, mode, standard deviation, and variance. The session also highlighted the importance of hypothesis testing, p-values, and confidence intervals in interpreting research results.



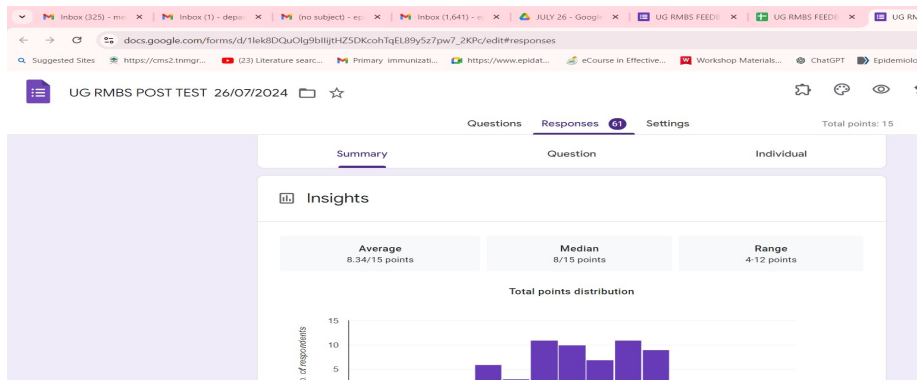
Session 5 : Research protocol

Speaker: Dr. Ilavenil, Assistant professor, Karpagam Faculty of Medical Sciences and Research

Dr. Ilavenil covered detailed steps for designing a research protocol, including selecting appropriate methodologies, defining inclusion and exclusion criteria, and establishing data collection procedures. Ethical considerations and obtaining necessary approvals were also highlighted as critical components of a robust research protocol.



At the end of session post- test were conducted and results were explained to participants.



Dr. Jasmine S. Sundar, Senior Assistant Professor, concluded the research methodology workshop. Feedback was collected from participants using a QR code, and students also provided live feedback, sharing how they gained knowledge and found the workshop useful.