MASTER OF PUBLIC HEALTH
(MPH)

in affiliation with Department of Community Medicine,
Faculty of Medical Sciences (FMS),
University of delhi

at

The National Institute of Health and Family Welfare,
Baba Gangnath Marg, Munirka,
New Delhi-110067

Course Structure
Detailed Semester Wise Break up and Teaching Learning Methods and Item Wise Hours of Instructions

The MPH course will comprise of 15 Core modules and four elective modules. **Four** elective streams comprising five modules each have been identified in addition to **15 Core** modules.

A candidate will need to pass 15 Core (compulsory) modules, and five elective modules of the chosen stream to successfully complete the program.

1. CORE MODULES (COMPULSORY FOR ALL STREAMS)

- ✓ MPHC101 Principles and Practice of Public Health
- ✓ MPHC102 Introduction to health system and policy in Developing countries
- ✓ MPHC103 Health Management: Management Principles and practices
- ✓ MPHC104 Basic Epidemiology
- ✓ MPHC105 Basic Biostatistics
- ✓ MPHC106 Demography and population sciences
- ✓ MPHC201 Introduction to health economics
- ✓ MPHC202 Health promotions approaches and methods and evaluation
- ✓ MPHC203 Introduction to financial management and budgeting.
- ✓ MPHC204 Social and behavior change, effective communication in health care
- ✓ MPHC301 Reproductive, Maternal, Neonatal, Child Health and Adolescent Health (RMNCH+A) also to include Family Planning
- ✓ MPHC302 Introduction to health programme evaluation
- ✓ MPHC303 Principles of social research methods
- ✓ MPHC304 Environment and occupational health
- ✓ MPHC305 Law and ethics in public health

Elective Streams

EPIDEMIOLOGY

- MPHE 401 Advanced Biostatistics
- MPHE402 Advanced Epidemiology
- MPHE403 Survey design and methods
- MPHE404 Infectious disease epidemiology
- MPHE405 NCD epidemiology

Note: *Modules (i) to (v) compulsory for Epidemiology Stream*

HEALTH PROGRAMME, POLICY AND PLANNING

- MPHE406 Health policy, process and planning
- MPHE407 Programme planning and evaluation of public health programmes (including current NHPs)
- MPHE408 Translating research into policy and health advocacy
- MPHE409 Current issues in Health Policy: National and global perspective
- MPHE410 Role of non-governmental organizations in health care

Note: *Modules (i) to (v) compulsory Health Programme, Policy and PlanningStream*

HEALTH SYSTEM MANAGEMENT

- MPHE411 Strategic management in health care and Health Entrepreneurship
- MPHE412 Advanced Operational research
- MPHE413 Advanced Financial management and budgeting
- MPHE414 Organizational management and services
- MPHE415 Effective advocacy and communication in Public Health

Note: *Modules (i) to (v) compulsory for Health Management Stream*

RMNCH+A

- MPHE416 Sexual and Reproductive health
- MPHE417 Maternal and child health
- MPHE418 Adolescent health
- MPHE419 Gender and health
- MPHE420 Public health nutrition

Note: *Modules (i) to (v) compulsory for RMNCH+A Stream*

Suggested calendar of activities
(*1 month ~ 100 teaching hours @ 5 hours per day* 5 days a week*) (1 credit = 35 teachinghours)
Breaks to be calculated as applicable

Semesters	Months	In/out Campus	Approximate division ofTeaching/ Practical hours	Teaching hours	Practical hours
Semester1	6 months	In campus classes	~450	150	300
Semester2	4 months	In campus classes	~300	100	200
	2 months	**Internship**	~75		75
Semester3	6 months	In campus classes	~450	150	300
Semester4	2 months	In campus classes	~150	50	100
	4 months	**Research, submission & defense of dissertation**	350		

THE SUGGESTED ORGANIZATION OF MODULES IS AS FOLLOWS:

SEMESTER 1 MODULES
MPHC101 Principles and Practices of Public Health
MPHC102 Introduction to Health System and Policy in Developing Countries
MPHC103 Health Management: Management Principles and Practices (Strategic management)
MPHC 104 Basic Epidemiology
MPHC 105 Basic Biostatistics
MPHC 106 Demography and Population Sciences
SEMESTER 2 MODULES
MPHC201 Introduction to Health Economics
MPHC202 Health Promotion Approaches and Methods
MPHC203 Introduction to Financial Management and Budgeting
MPHC204 Social and Behaviour Change, Effective Communication in Health Care
SEMESTER 3 MODULES
MPHC301 Reproductive, Maternal Health, Child Health and adolescent (RMNCH+A)
MPHC302 Introduction to Health Programs and evaluation
MPHC303 Principles of Social Research Methods
MPHC304 Environment and Occupational Health
MPHC305 Law and Ethics in Public Health
SEMESTER 4 MODULES
Elective Stream modules (5)

DETAILS OF MODULES UNDER MASTERS IN PUBLIC HEALTH

A. CORE MODULES (COMPULSORY)

MPHC101: PRINCIPLES AND PRACTICES OF PUBLIC HEALTH:

- Public Health- what it is, causation, prevention, social determinants of health, health systems and health policy
- Health equity
- Environments and health
- Public Health action

Suggested Readings:

- introduction-to-public-health; Presentation by Center for Surveillance, Epidemiology and Laboratory Services; Division of Scientific Education and Professional Development, CDC
- changing concept of disease; Paul Thagard; Philosophy Department, University of Waterloo, Waterloo, Ontario, N2L 3G1; pthagard@watarts.uwaterloo.ca; © Paul Thagard, 1997
- a-framework-for-public-health-action-the-health-impact-pyramid; Thomas R. Frieden, MD, MPH; American Journal of Public Health; April 2010, Vol 100, No. 4
- Pitt SJ and Gunn A (2024) The One Health Concept; Br J Biomed Sci 81:12366; doi: 10.3389/bjbs.2024.12366
- S Anand, St Catherine's College, Oxford OX1 3UJ, UK; J Epidemiol Community Health 2002;56:485–487
- Braveman, P., Arkin, E., Orleans, T., Proctor, D., Acker, J., & Plough, A. (2018). What is health equity? Behavioral Science & Policy, 4(1), 1–14.

MPHC102: HEALTH SYSTEM AND POLICY IN DEVELOPING COUNTRIES:

- Basic theoretical approaches and concepts used in policy analysis
- Understanding of global and national health policies, including current trends
- Analyze the political system within which policies are made
- Contextual factors that influence policy change
- Changing global health policy environment

Suggested Readings:

- A Social, Political and Public Health Analysis of Bhore Committee; Vikas Bajpai and Anoop Saraya; Social Change 2011 41: 215; DOI:10.1177/004908571104100202; Sage Publications
- Fayol's 14 principles of management then and now: A framework for managing today's organisations effectively; Carl A Rodrigues; Management Decision; 2001; 39, 10; ABI/INFORM Global; pg. 880
- Health care systems in transition III. India, Part 1. The Indian Experience; Imrana Qadeer, Journal of Public Health Medicine, Vol. 22, No. 1, pp. 25-32
- Roemer, Milton (1977); Comparative National policies on Health care, New York; Marcel Dekker Inc; Chapter 1
- GILL WALT, LUCY GILSON, Reforming the health sector in developing countries: the central role of policy analysis, Health Policy and Planning, Volume 9, Issue 4, December 1994, Pages 353–370
- Burau, Viola and Blank, Robert H. (2006) 'Comparing health policy: An assessment of typologies of health systems', Journal of Comparative Policy Analysis: Research and Practice, 8: 1, 63 — 76

MPHC103: HEALTH MANAGEMENT: MANAGEMENT PRINCIPLES AND PRACTICES:

- Basic knowledge of health care systems and the environment in which healthcare managers and providers function
- Health Programmes: planning, implementation, Monitoring and Evaluation
- Components of strategic management
- Project management
- Behavioral aspects ofgovernmental, faith based and other non –governmental organizations
- Introduction to logistics management
- Introduction to human resource management
- Quality: define quality, its importance in public health, measures tomanage and improve equality
- Introduction to Operational Research
- Risk management
- Effective management of Health Management Information Systems(HMIS) and its application
- Public Health Leadership

Suggested Readings:

- Adaptive health management information systems: concepts cases and practical applications; Joseph Tan and Fay Cobb Payton; 3rd edition; Jones and Bartlett Publishers; 2010
- Annual_Report_to_the_People_on_Health_Government of India; Ministry of Health and Family Welfare; September 2010
- "BMW_Rules_2016, Published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-section (i)]
- GOVERNMENT OF INDIA MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE; NOTIFICATION; New Delhi, the 28th March, 2016"
- Burden_of_Disease_Estimations_and_Casual_analysis; Choosing Investments in Health' prepared by Dr Ajay Mahal, Assistant Professor, Harvard School of Public Health, USA, for the National Commission on Macroeconomics and Health.; 2010
- Agarwal, A. & Garg, Shalini & Pareek, U.. (2011). Strengthening human resource practices in healthcare in India: The road ahead. Journal, Indian Academy of Clinical Medicine. 12. 38-43.
- HANDBOOK OF SUPPLY MANAGEMENT AT FIRSTLEVEL HEALTH CARE FACILITIES; 1st version for country adaptation; WHO 2006
- Saikia, Dilip. (2017). Human Resource Challenges in the Public Health Sector in Rural India. The Journal of Institute of Public Enterprise. 40. 1-30. 10.2139/ssrn.2985393.
- Kabatereine NB, Malecela M, Lado M, Zaramba S, Amiel O, et al. (2010) How to (or Not to) Integrate Vertical Programmes for the Control of Major Neglected Tropical Diseases in Sub-Saharan Africa. PLoS Negl Trop Dis 4(6): e755. doi:10.1371/journal.pntd.0000755
- Oliveira Cruz, Valeria & Kurowski, Christoph & Mills, Anne. (2003). Delivery of Priority Health Services: Searching for synergies within the vertical versus horizontal debate. Journal of International Development. 15. 67-86. 10.1002/jid.966.
- Logistics-for-SCM-in-FP-and-Health-Guide_USAID_2009; USAID; July 2009
- LFA know how; AusAID; October 2005
- Orobaton, N., & Uggowitzer, S. (2016). The case for a national health Information system architecture; a missing link to guiding national development and implementation.

www.academia.edu.

- The Nomenclature and Classification of Human Resources for Health: A Review; Binay Kumar, Kavya Sharma and Sanjay Zodpey; Journal of Health Management 2013 15: 203;
- Quality Improvement; Department of Public Health; County of Los Angeles; SEPTEMBER 2010

MPHC104: BASIC EPIDEMIOLOGY INCLUDING COMMUNICABLE AND NON-COMMUNICABLE DISEASES:

- History of Epidemiology
- Measurements in Epidemiology
- Incidence and prevalence
- Causation and association
- Measures of association
    - Outline of study designs (including cross sectional study design, casecontrol study design, cohort study design and randomised control trials)
- Introduction to confounding and bias
- Screening tests- validity and reliability methods
- Disease surveillance
- Outbreak investigation
- Communicable and non-communicable diseases

Suggested Readings:

- Kuller LH. Epidemiology: Then and Now. Am J Epidemiol. 2016 Mar 1;183(5):372-80. doi: 10.1093/aje/kwv158. Epub 2015 Oct 21. PMID: 26493266.
- k. park-park's textbook of preventive and social medicine 23rd Edition 2005
- Pearce N. Traditional epidemiology, modern epidemiology, and public health. Am J Public Health. 1996 May;86(5):678-83. doi: 10.2105/ajph.86.5.678. PMID: 8629719; PMCID: PMC1380476.

MPHC105: BASIC BIOSTATISTICS:

- Types of variables
- Scales of measurement
- Measures of central tendency
- Measures of dispersion
- Types of distribution
- Bayes theorem
- Sample/sampling and population distribution
- Central limit theorem
- Type1 and type 2 error and power calculation
- p-value and 95% confidence Interval
- Parametric and non-parametric test
- How to choose the statistical test
- Correlation
    - Basics of Regression
    - One statistical software (SPSS/Stata)

Suggested Readings:

- Mahajan's Methods in Biostatistics for Medical Students and Research Workers; Eighth Edition; Arun Bhadra, Khanal Mahajan; JAYPEE; 2016
- T.D.V. Swinscow, Statistics at Square One, 9th Edition, Revised by M.J. Campbell, University of Southampton, UK
- Naing NN. Easy way to learn standardization: direct and indirect methods. Malays J Med Sci. 2000 Jan;7(1):10-5. PMID: 22844209; PMCID: PMC3406211.
- Biostatistics for Dummies by John C. Pezzullo, PhD; John Wiley & Sons, Inc.; 2013
- Basic Tools of Research: Sampling, Measurement, Distributions, and Descriptive Statistics; Part 2
- Principles of Biostatistics; Marcello Pagano, Kimberlee Gauvreau; Harvard Medical School; 2000; Duxbury by Brooks/Cole

MPHC106: DEMOGRAPHY AND POPULATION SCIENCES:

- Factors affecting population
- Measures of fertility and mortality
- Standardization methods
- Population growth and projection
- Demographic transition
- Implication of rapid population growth
- Demographic dividend or disaster
- Life table
- Urbanization

Suggested Readings:

- Ponnapalli, R., Ponnapalli, K. M., & Subbiah, A. (2013). Aging and the Demographic Transition in India and Its States: A Comparative Perspective. International Journal of Asian Social Science, 3(1), 171–193.
- Saroha, J. & Dr.B.R.Ambedkar College, University of Delhi. (2017). Demographic transition in India. In IJRAR- International Journal of Research and Analytical Reviews (Vol. 4, Issue 4, pp. 193–194)
- Wan Ahmad, Wan Ibrahim & Astina, I Komang & Budijanto, Budijanto. (2015). Demographic Transition and Population Ageing. Mediterranean Journal of Social Sciences. 6. 10.5901/mjss.2015.v6n3s2p213.
- Griffith, Alden & Salguero-Gómez, Roberto & Merow, Cory & McMahon, Sean. (2016). Demography beyond the population. Journal of Ecology. 104. 271-280. 10.1111/1365-2745.12547.
- Palmore, James A. and Robert W. Gardner. “Measuring Mortality Fertility and Natural Increase: A Self Teaching Guide to Elementary Measures.” (1983).
- Aryal, G. R. (2020). Methods of Population Estimation and Projection. Journal of Population and Development, 1(1), 54–61.
- Poston, Dudley & Heo, Nayoung. (2023). Demography. 10.1002/9781405165518.wbeosd026.pub2.
- Sadashivam, T. & Tabassum, Shahla. (2016). TRENDS OF URBANIZATION IN INDIA: ISSUES AND CHALLENGES IN THE 21 ST CENTURY. 3. 2375-2384.
- Shaykheeva, D. & Panasyuk, M.V. & Malganova, Irina & Khairullin, I. (2016). World population estimates and projections: Data and methods. 17. 237-24

MPHC201: INTRODUCTION TO HEALTH ECONOMICS:

- Key concepts of economics, micro and macro economics
- Strategizing and prioritizing within scarce resources (decision making)
- Determinants of demand, supply and costs of production
- Concepts of efficiency, effectiveness, equity, elasticity of demand, costing,production, marginal cost analysis, and opportunity cost
- Market model, market failure, and the roles and limitations of markets inhealth care
- Universal health coverage and role of health care financinl
- Principles and application of economic evaluation in health care includingCost Benefit Analysis (CBA) and Cost Effective Analysis (CEA)

Suggested Readings:

- Principles of Microeconomics, 5th edition; N. Gregory Mankiw (Harvard University); South-Western, a part of Cengage Learning; 2008
- Deloitte and Confedration of Indian Industries (CII); July 2010
- Microeconomics; Robert S. Pindyck, Daniel L. Rubinfeld. – 8th edition; 2013
- Principles of Macroeconomics, 7th edition; N. Gregory Mankiw (Harvard University); Worth Publishers; 2010
- The economics of health and health care/Sherman Folland, Allen C. Goodman, Miron Stano.—7th edition; 2013
- Kutzin J. Health financing for universal coverage and health system performance: concepts and implications for policy. Bull World Health Organ. 2013 Aug 1;91(8):
- Arrow, K. J. & Stanford University. (1963). UNCERTAINTY AND THE WELFARE ECONOMICS OF MEDICAL CARE. In THE AMERICAN ECONOMIC REVIEW
- Zilberberg MD, Shorr AF. Understanding cost-effectiveness. Clin Microbiol Infect. 2010 Dec;16(12):1707-12. doi: 10.1111/j.1469-0691.2010.03331.x. PMID: 20673258.

MPHC202: HEALTH PROMOTION APPROACHES AND METHODS:

- Introduction to health promotion
- Foundations for health promotion
- Social determinants and health promotion
- Introduction on sociological perspectives on health
- Key concepts in sociology as applied to the study of health
- Social and cultural processes impacting health status and access to healthservice
- Overview of current national health policies, national health programs andtheir health promotion strategies
- Community needs assessment for designing an effective health promotionactivity
- Medical anthropology
- Evaluation of health promotion plans
- Substance abuse epidemic in parts of India
- Smokeless (chewable) and smoked tobacco addictions in parts of India
- Drunken driving: social and personal responsibilities and control measures
- Stigmatization of health conditions

Suggested Readings:

- Mokhtari M, Banaye Jeddi M, Majidi A, Jafari Khoinagh A, Holakoi Naeeni K. Community assessment for identification and prioritization of problems to establish health promotion operational plans. J Research Health 2013
- Carvalho, Antônio & Bodstein, Regina & Hartz, Zulmira & Matida, Alvaro. (2004). Concepts and approaches in the evaluation of health promotion. Ciencia & Saude Coletiva - CIENC SAUDE COLETIVA. 9. 10.1590/S1413-81232004000300002.
- Lupton D. Health promotion in the digital era: a critical commentary. Health Promot Int. 2015 Mar;30(1):174-83. doi: 10.1093/heapro/dau091. Epub 2014 Oct 15.
- Jackson SF, Perkins F, Khandor E, Cordwell L, Hamann S, Buasai S. Integrated health promotion strategies: a contribution to tackling current and future health challenges. Health Promot Int. 2006 Dec;21 Suppl 1:75-83. doi: 10.1093/heapro/dal054.
- White, K. (2017). Sociology of Health and Illness: An Introduction to the 3rd edition (Natalie Aguilera, Ed.; 3rd ed.). SAGE Publications Ltd.
- Nyblade L, Stockton MA, Giger K, Bond V, Ekstrand ML, Lean RM, Mitchell EMH, Nelson RE, Sapag JC, Siraprapasiri T, Turan J, Wouters E. Stigma in health facilities: why it matters and how we can change it. BMC Med. 2019 Feb 15;17(1):25.
- Stangl, A.L., Earnshaw, V.A., Logie, C.H. et al. The Health Stigma and Discrimination Framework: a global, crosscutting framework to inform research, intervention development, and policy on health-related stigmas. BMC Med 17, 31 (2019).
- Society and Health; Sociology for Health Professionals; Richard K. Thomas, Ph.D.; 2003 Kluwer Academic/Plenum Publishers
- WHO Health Promotion Glossary: new terms; BEN J. SMITH, KWOK CHO TANG1 and DON NUTBEAM; Oxford University Press; 2006
- Bhasin, Veena. (2007). Medical Anthropology: A Review. Ethnomedicine. 1. 10.1080/09735070.2007.11886296.

MPHC203: INTRODUCTION TO FINANCIAL MANAGEMENT AND BUDGETING

- Introduction to financial management
- Tools of financial analysis and planning in health care
- Cash flow, accounts and balancing budgets
- Cost and dividends for health outcomes
- Effectiveness and efficiency
- Sustainability of Health Programs

Suggested Readings:

- Preker AS, Carrin G, Dror D, Jakab M, Hsiao W, Arhin-Tenkorang D. Effectiveness of community health financing in meeting the cost of illness. Bull World Health Organ. 2002;80(2):143-50. PMID: 11953793; PMCID: PMC2567719.
- Patel P. Efficacy, Effectiveness, and Efficiency. Natl J Community Med 2021;12(2)
- Personal document from a credible expert
- Liaropoulos L, Goranitis I. Health care financing and the sustainability of health systems. Int J Equity Health. 2015 Sep 15;14:80. doi: 10.1186/s12939-015-0208-5.
- Lawson, R.A.. (2005). The use of activity based costing in the healthcare industry: 1994 vs. 2004. Research in Healthcare Financial Management. 10. 77-94.
- Perleth M, Jakubowski E, Busse R. What is 'best practice' in health care? State of the art and perspectives in improving the effectiveness and efficiency of the European health care systems. Health Policy. 2001 Jun;56(3):235-50. doi: 10.1016/s0168-8510(00)00138-x. PMID: 11399348.

MPHC204: SOCIAL AND BEHAVIOUR CHANGE, EFFECTIVE COMMUNICATION IN HEALTHCARE:

- Introduction to behaviour change theories and communication
- Health and human behaviour
- Communication strategies for health promotion
- Implementing and managing social and behaviour change communication in public health: Information Education and Communication (IEC), Inter Personal Communication (IPC), Behaviour Change Communication (BCC), Social Behaviour Change Communication (SBCC)
- Human behaviour and communication, its role in public health problemsand solutions
- Behavioral issues in children and teens: substance abuse, suicide patterns
- TV and other media as influencers of healthy/non healthy lifestyle
- Public speaking
- Verbal vs. Non-verbal communication
- Various forms of written communication
- Evidence based advocacy
- Consensus building
- Using audio visual aid in communication
- Etiquette and professionalism

Suggested Readings:

- Wayne W. LaMorte, MD, PhD, MPH; August 29, 2018; Boston University School of Public Health
- Making Health Communications Work", U.S. Department of Health & Human Services. Public Health Service. National Institutes of Health and National Cancer Institute
- Goyet. (n.d.). Community participation. In Manual (pp. 177–179). https://ec.europa.eu/echo/files/evaluation/watsan2005/annex_files/WEDC/es/ES12CD.pdf
- Ravi, P. (2021). Significance of Non-Verbal Communication in Effective Healthcare Management. www.academia.edu.
- Dominika Kwasnicka, Stephan U Dombrowski, Martin White & Falko; Sniehotta (2016) Theoretical explanations for maintenance of behaviour change: a systematic review of behaviour theories, Health Psychology Review, 10:3, 277-296, DOI: 10.1080/17437199.2016.1151372
- Welch, D. (2017). Behaviour change and theories of practice: Contributions, limitations and developments. Social Business, 7(3-4), 241-261. Article 21. https://doi.org/10.1362/204440817X15108539431488
- Rachel Davis, Rona Campbell, Zoe Hildon, Lorna Hobbs & Susan; Michie (2015) Theories of behaviour and behaviour change across the social and behavioural sciences: a scoping review, Health Psychology Review, 9:3, 323-344, DOI: 10.1080/17437199.2014.941722

MPHC301: INTRODUCTION TO RMNCH+A:

- Introduction to the RMNCH+A services – historical context, evolution,coverage and innovations
- Various components of service delivery under RMNCH+A (including GoI programs)
- Maternal, New-born and Child Health (MNCH) services in the country

- Adolescent health
- Role of gender in public health programs
- Evolution of RCH services in the country – Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs)
- Innovations in service delivery
- Framework for evaluation of services

Suggested Readings:

- Bruns, H. R., SN. (2016). Government-Led Programs to Improve Maternal and Infant Health in India: a Systematic Review of Literature. In J. Kue & The Ohio State University, *The Ohio State University* [Journal-article]
- Vellakkal, S., Gupta, A., Khan, Z., Stuckler, D., Reeves, A., Ebrahim, S., Bowling, A., & Doyle, P. (2016). Has India's national rural health mission reduced inequities in maternal health services? A pre-post repeated cross-sectional study. *Health Policy and Planning*, *32*(1), 79–90.
- Sahadevan, S., Iang, M. D., & Dureab, F. (2023). Effect of adolescent health policies on health outcomes in India. *Adolescents*, *3*(4), 613–624.
- Kaur, G., Gupta, K., & Shyam, S. (2021). Evaluation of antenatal services at Family welfare Centre under RMNCH+A Programme in Delhi. *Journal of Family Medicine and Primary Care*, *10*(10), 3869–3875.
- Wadhwa, R., Chaudhary, N., Bisht, N., Gupta, A., Behera, N., Verma, A. K., Chopra, M., Jain, M., Verma, G., Gupta, S., Taneja, G., & Gera, R. (2018). Improving adolescent health services across high priority districts in 6 states of India: Learnings from an integrated reproductive maternal newborn child and adolescent health project. *Indian Journal of Community Medicine*, *43*(5), 6.
- Das, A. K., Yadav, A., Population Council Consulting, & LEHS, WISH Foundation. (2023). A Critical Review of India's RMNCH+A Strategy (2014) to achieve UN SDG 2030 goal for Neonatal Mortality Rate [Article]. *Demography India*, 119.
- Taneja, G., Sridhar, V. S., Mohanty, J. S., Joshi, A., Bhushan, P., Jain, M., Gupta, S., Khera, A., Kumar, R., & Gera, R. (2019). India's RMNCH+A Strategy: approach, learnings and limitations. *BMJ Global Health*, *4*(3), e001162.
- Engmann, C. M., Khan, S., Moyer, C. A., Coffey, P. S., & Bhutta, Z. A. (2016). Transformative Innovations in Reproductive, Maternal, Newborn, and Child Health over the Next 20 Years. *PLoS Medicine*, *13*(3), e1001969.
- McDonald, Et. Al., World Health Organization, & Department of Gender and Women's Health. (2002). Gender analysis in health: A review of selected tools [Review]. In World Health Organization, *World Health Organization*.

MPHC302: INTRODUCTION TO DESIGN AND EVALUATION OF PUBLIC HEALTH PROGRAMS

- Concepts underlying the design of health program
- Basic approaches to the design, analysis and interpretation of healthprograms
- Communication in public health research
- Framework to evaluate the effectiveness of health programme implementation
- Case Study: how to integrate a package of care for a specific problem into a platform of healthcare delivery
- Process, outcome and impact evaluation

Suggested Readings:

- Lacouture, A., Breton, E., Guichard, A., & Ridde, V. (2015). The concept of mechanism from a realist approach: a scoping review to facilitate its operationalization in public health program evaluation. *Implementation Science*, *10*(1).
- Quasdorf, T., Clack, L., Uribe, F. L., Holle, D., Berwig, M., Purwins, D., Schultes, M., & Roes, M. (2021). Theoretical approaches to process evaluations of complex interventions in health care: a systematic scoping review protocol. *Systematic Reviews*, *10*(1).
- Brownson, R. C., Fielding, J. E., & Christopher M. Maylahn. (2009). Evidence-Based public Health: a fundamental concept for public health practice. *Annu. Rev. Public Health*, 175–201.
- Communication at the core of effective public health. *American Journal of Public Health*, *94*(12), 2051.
- Parvanta, C. F., Nelson, D. E., & Jones & Bartlett Learning. (2011). *Essentials of public health communication* (Annenberg School of Communication, University of Pennsylvania & R. N. Harner, Eds.). Jones & Bartlett Learning.

MPHC303: PRINCIPLES OF RESEARCH METHODS:

- Objectives of research
- Research design
- Ethical issues in research
- Tools and Measurements in research
- Sample size and sampling
- Understanding and analysis of
    - Qualitative data and research
    - Quantitative data and research
    - Mixed methods
- Public health surveillance and research

Suggested Readings:

- The Practice of Social Research; Earl Babbie, 13th edition
- University of Guelph. (2004). PLAGIARISM AND ACADEMIC INTEGRITY. In *Learning Commons Fastfacts Series*.
- What Is Qualitative Health Research; Norman K Denzin; Yvonna S Lincoln; Sage Publications; 2011
- Beyond qualitative and quantitative: Qualitative and quantitative methods in evaluation research; Sage Publications; 1979; Chapter 24
- The meanings of Methodology Newman_w.l
- Choi, B. C. K., K. & Hindawi Publishing Corporation. (2012). The past, present, and future of public health surveillance. *Scientifica*, *2012*, 26.
- Omair, A. (2014). Sample size estimation and sampling techniques for selecting a representative sample. *Deleted Journal*, *2*(4), 142.

MPHC304: ENVIRONMENT AND OCCUPATIONAL HEALTH:

- Theories and history of environmental health
- Environmental health policy and legal mechanisms in a national andinternational context
- Ecosystems in various settings (linking the built environment, transport,housing and

green space to human health)

- Environmental pollution, waste disposal and treatment
- Lifestyle and dietary effects on health, food safety and sanitation
- Occupational Health: Hazards at workplace and work safety; Preventionof occupational hazards; Laws related to occupational health; Various government and other schemes for working population in India
- Climate Change & Health
- Biomedical Waste Management
- Management of environmental hazards, natural disasters
- Central Pollution Control Board (CPCB) guidelines
- Environmental health impact assessment

Suggested Readings:

- Converging Paradigms for Environmental Health Theory and Practice Margot Parkes, Ruth Panelli, and Philip Weinstein
- Berridge, Virginia & Gorsky, Martin. (2011). Introduction: Environment, health and history. Environment, Health and History. 1-22. 10.1057/9780230347557.
- Unit-3 Environment Health; IGNOU
- Parliament of India. (1986). THE ENVIRONMENT (PROTECTION) ACT, 1986. In *THE ENVIRONMENT (PROTECTION) ACT, 1986* (pp. 267–270).
- Salmond, J. A., Tadaki, M., Vardoulakis, S., Arbuthnott, K., Coutts, A., Demuzere, M., Dirks, K. N., Heaviside, C., Lim, S., Macintyre, H., McInnes, R. N., & Wheeler, B. W. (2016). Health and climate related ecosystem services provided by street trees in the urban environment. *Environmental Health*, *15*(S1).
- Campbell-Lendrum, D., Neville, T., Schweizer, C. *et al.* Climate change and health: three grand challenges. *Nat Med* **29**, 1631–1638 (2023).
- Kotcher, J., Maibach, E., Miller, J., Campbell, E., Alqodmani, L., Maiero, M., Wyns, A., Center for Climate Change Communication, George Mason University, Fairfax, VA, USA, The Global Climate & Health Alliance, Berkeley, CA, USA, World Medical Association, Ferney-Voltaire, France, & Department of Public Health, Environmental and Social Determinants of Health, World Health Organization, Geneva, Switzerland. (2021). Views of health professionals on climate change and health: a multinational survey study. *The Lancet Planetary Health*, *5*, e316–e323.
- Pires, S. M., Thomsen, S. T., Nauta, M., Poulsen, M., & Jakobsen, L. S. (2020). Food safety implications of transitions toward sustainable healthy diets. *Food and Nutrition Bulletin*, *41*(2_suppl), 104S-124S.
- Saha, R. K. (2018). Occupational health in India. Annals of Global Health, 84(3), 330–333.
- Datta P, Mohi GK, Chander J. Biomedical waste management in India: Critical appraisal. J Lab Physicians 2018;10:6-14.
- Gupta, P. P., Bankar, N. J., Mishra, V. H., Sanghavi, S., & Badge, A. K. (2023). The Efficient Disposal of Biomedical Waste Is Critical to Public Health: Insights from the Central Pollution Control Board Guidelines in India. *Cureus*.
- Briggs, D. J. (2008). A framework for integrated environmental health impact assessment of systemic risks. *Environmental Health*, *7*(1).

MPHC305 LAW AND ETHICS IN PUBLIC HEALTH

- Public Health laws and ethics
- Human rights in public health
- Role of governments in managing health of people
- Public health regulations in Indian context

- Public health information and privacy
- Research ethics in public health
- Regulations during emergencies and outbreaks
- Addressing newer challenges: Bioterrorism, conflicts and emerginginfectious diseases
- Public Health laws in global economy
- Global health hazards and security
- Different forms of power, influential to policy making
- Concept of governance and institutions
- Different theories useful in policy analysis
- Political nature of evidence for policy making in health
- Written and verbal competence in communicating evidence to inform policy

Suggested Readings:

- Pereira, P., & Bairy, K. (2012). Accreditation of human research protection program: An Indian perspective. *Perspectives in Clinical Research*, *3*(2), 80.
- Garg, P., & Nagpal, J. (2014). A review of literature to understand the complexity of equity, ethics and management for achieving public health goals in India. *JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH*.
- Lakshminarayanan, S. (2011). Role of government in public health: Current scenario in India and future scope. *Journal of Family and Community Medicine*, *18*(1), 26.
- Myers, J., Frieden, T. R., Bherwani, K. M., & Henning, K. J. (2008). Ethics in public health research. *American Journal of Public Health*, *98*(5), 793–801.
- Widjaja, G. (2024). Legal aspects in handling outbreaks and pandemics. In The International Tax Journal, *The International Tax Journal* (Vol. 51, Issue 6, pp. 223–230).
- Arthur, R. R., Leduc, J. W., & Hughes, J. M. (2003). Surveillance for emerging infectious diseases and bioterrorism threats. In *Elsevier*.
- Gill Walt, Jeremy Shiffman, Helen Schneider, Susan F Murray, Ruairi Brugha, Lucy Gilson, 'Doing' health policy analysis: methodological and conceptual reflections and challenges, *Health Policy and Planning*, Volume 23, Issue 5, September 2008
- Kluge, H., Martín-Moreno, J. M., Emiroglu, N., Rodier, G., Kelley, E., Vujnovic, M., & Permanand, G. (2018). Strengthening global health security by embedding the International Health Regulations requirements into national health systems. *BMJ Global Health*, *3*(Suppl 1), e000656.
- Liverani, M., Hawkins, B., & Parkhurst, J. O. (2013). Political and institutional influences on the use of evidence in public health policy. A systematic review. *PLoS ONE*, *8*(10), e77404.

B.ELECTIVE MODULES

STREAM B1: EPIDEMIOLOGY

MPHE401: ADVANCED BIOSTATISTICS:

- Principles of regression
- Methods of regression
- Linear regression
- Logistic regression
- Poisson regression
- Cox proportional hazards regression
- Regression diagnostics
- Introduction to multilevel modeling

- Introduction to data imputation
- Choosing the best models
- Longitudinal data analysis
- Survival analysis
- Time lag regression (ARIMA models)

Suggested Readings:

- Mahajan's Methods in Biostatistics for Medical Students and Research Workers; Eighth Edition; Arun Bhadra, Khanal Mahajan; JAYPEE; 2016
- T.D.V. Swinscow, Statistics at Square One, 9th Edition, Revised by M.J. Campbell, University of Southampton, UK
- Naing NN. Easy way to learn standardization: direct and indirect methods. Malays J Med Sci. 2000 Jan;7(1):10-5. PMID: 22844209; PMCID: PMC3406211.
- Biostatistics for Dummies by John C. Pezzullo, PhD; John Wiley & Sons, Inc.; 2013
- Basic Tools of Research: Sampling, Measurement, Distributions, and Descriptive Statistics; Part 2
- Principles of Biostatistics; Marcello Pagano, Kimberlee Gauvreau; Harvard Medical School; 2000; Duxbury by Brooks/Cole

MPHE402: ADVANCED EPIDEMIOLOGY:

- Directed acyclic graphs and conceptual framework
- Confounding bias and methods to reduce confounding
- Selection bias
- Information bias
- Measures of validity and reliability
- Nested study designs
- Advanced designs in clinical trials
- Systematic reviews and meta-analysis overview
- Epidemiology and management of Vector Borne Diseases
- Health measures following disasters
- Various public data sources: CRS, SRS, Census, NFHS, DLHS, HMIS,MCTS, etc.

Suggested Readings:

- Kuller LH. Epidemiology: Then and Now. Am J Epidemiol. 2016 Mar 1;183(5):372-80. doi: 10.1093/aje/kwv158. Epub 2015 Oct 21. PMID: 26493266.
- k. park-park's textbook of preventive and social medicine 23rd Edition 2005
- Pearce N. Traditional epidemiology, modern epidemiology, and public health. Am J Public Health. 1996 May;86(5):678-83. doi: 10.2105/ajph.86.5.678. PMID: 8629719; PMCID: PMC1380476.
- Essential Epidemiology: An Introduction for Students and Health Professionals by Penny Webb and Chris Bain

MPHE403: SURVEY DESIGN AND METHODS:

- Pre survey formative research
- Sampling and sample size calculations
- Ethical issues in surveys
- Tool development
- Conduct of surveys
- Quality control and assurance in surveys

- Survey data analysis
- Identify appropriate research designs for a range of questions in health
- Describe the steps involved in planning and conducting a research project
- Evaluate the strengths and weaknesses of various data collection methods

Suggested Readings:

- Formative Research Guidance Introducing Multiple Micronutrient Supplements (MMS), UNICEF 2022
- Das S, Mitra K, Mandal M. Sample size calculation: Basic principles. Indian J Anaesth. 2016 Sep;60(9)
- Sirwan Khalid Ahmed: How to choose a sampling technique and determine sample size for research: A simplified guide for researchers, Oral Oncology Reports, Volume 12, 2024
- Ethical Surveys: A guide to Responsible research. (n.d.). Survey Sparrow. https://surveysparrow.com/blog/ethical-surveys/
- Adley, M., Alderson, H., Jackson, K., McGovern, W., Spencer, L., Addison, M., & O'Donnell, A. (2023). Ethical and practical considerations for including marginalised groups in quantitative survey research. *International Journal of Social Research Methodology*, *27*(5), 559–574.
- Quality Assurance and Quality Control in Surveys_Harvard; Lars Larys
- Petcu C, Boukhelif I, Davis V, Shamsi H, Al-Assi M, Miladi A, Khaled SM. Design and Implementation of Survey Quality Control System for Qatar's First National Mental Health Survey: Case Study. JMIR Form Res. 2023 Nov 27
- Ponto J. Understanding and Evaluating Survey Research. J Adv Pract Oncol. 2015 Mar-Apr;6(2):168-71
- Taherdoost, H. (2021). Data collection Methods and Tools for Research; A Step-by-Step Guide to choose data collection technique for academic and business research projects. In International Journal of Academic Research in Management (IJARM)

MPHE404: COMMUNICABLE DISEASE EPIDEMIOLOGY:

- Recognize the burden of communicable diseases (CD) affectingthe population
- Examine factors contributing to the persistence of infectious diseases
- Understand reasons for emergence and re-emergence of infectious diseases
- Key concepts covered are:
    - Incubation periods
    - Epidemic patterns
    - Modes of transmission
    - Transmission dynamics
    - Measures of infectiousness
    - Secondary attack rates
- Analyze the transmission dynamics of diseases and design appropriatecontrol measures
- Apply basic infectious diseases epidemiological skills to addressmajor emerging and re-emerging communicable diseases
- Surveillance: Case in point: Integrated Disease Surveillance Program (IDSP)
- Epidemiology of common communicable diseases like TB, Malaria, Leprosy, Polio, STIs, AIDS, Meningococcal meningitis, Hepatitis B, and Measles (mathematical models of infection dynamics, outbreak investigation and surveillance, schedules, adverse reactions,contraindications, vaccine efficacy, impact assessment)

- Live outbreak investigation
- Adverse Event Following Immunization (AEFI) investigation

Suggested Readings:

- Cassini A, Colzani E, Pini A, Mangen MJ, Plass D, McDonald SA, Maringhini G, van Lier A, Haagsma JA, Havelaar AH, Kramarz P, Kretzschmar ME; BCoDE consortium. Impact of infectious diseases on population health using incidence-based disability-adjusted life years (DALYs): results from the Burden of Communicable Diseases in Europe study, European Union and European Economic Area countries, 2009 to 2013. Euro Surveill. 2018 Apr;23(16):17-00454.
- Upadhyay RP. An overview of the burden of non-communicable diseases in India. Iran J Public Health. 2012;41(3):1-8. Epub 2012 Mar 31. PMID: 23113144; PMCID: PMC3481705.
- Epidemiology and Economic Burden of Continuing Challenge of Infectious Diseases in India: Analysis of Socio-Demographic Differentials; Ram Bhed, Thakur Ramna; Frontiers in Public Health; 2022
- Webber, R. (2005). Communicable Disease Epidemiology and Control: A Global perspective (2nd Edition).
- Elsevier Inc. (2014). The new public health [Learning Objectives]. https://doi.org/10.1016/B978-0-12-415766-8.00004-5
- Raut, D. K., & Bhola, A. K. (2014). Integrated Disease surveillance in India: Way forward. GLOBAL JOURNAL OF MEDICINE AND PUBLIC HEALTH, 4–4, 1–3. https://www.researchgate.net/publication/387854928
- Govindakarnavar Arunkumar, Radhakrishnan Chandni, Devendra T Mourya, Sujeet K Singh, Rajeev Sadanandan, Preeti Sudan, Balram Bhargava, Nipah Investigators People and Health Study Group , Outbreak Investigation of Nipah Virus Disease in Kerala, India, 2018, The Journal of Infectious Diseases, Volume 219, Issue 12, 15 June 2019, Pages 1867–1878
- Joshi, J., Das, M.K., Polpakara, D. *et al.* Vaccine Safety and Surveillance for Adverse Events Following Immunization (AEFI) in India. *Indian J Pediatr* **85**, 139–148 (2018).

MPHE405: NON-COMMUNICABLE DISEASES (NCD) EPIDEMIOLOGY:

- Describe and understand the epidemiology of NCDC
    - Cardiovascular diseases
    - Hypertension
    - Diabetes mellitus
    - Cancers
    - Mental health
    - Stroke
    - Burns/trauma/ accidents etc.
- Comprehend the upstream and downstream determinants of NCDs
- Understand the Individual approaches/or high-risk approaches andpopulation based/ or public health approaches to prevent NCDs
- Recognize the risk factor approach to prevent non-communicable diseases
- Comprehend the Population based/public health approaches to prevention of common NCD risk factors (physical inactivity, tobacco and unhealthy diet)
- Familiarize with the current projects on targeting the prevention of NCDs,including, innovations in prevention
- How prevention of NCDs interlinks with Communicable diseases. How women and child health, health of the girl child links to prevention of NCDs
- Recognize Economic burden of NCDs and benefits of prevention

- Comprehend how sustainable development and prevention of NCDs gohand in hand
- Comprehend the power of policy and role of environment in theprevention of NCDC
- Population-based screening
- Surveillance of cancers including cancer registry

Suggested Readings:

- Jørn Olsen, Roberto Bertollini, Cesar Victora, Rodolfo Saracci, Global response to non-communicable diseases—the role of epidemiologists, International Journal of Epidemiology, Volume 41, Issue 5, October 2012, Pages 1219–1220
- Yadav, A. K., Paltasingh, K. R., & Jena, P. K. (2020). Incidence of Communicable and Non-communicable Diseases in India: Trends, Distributional Pattern and Determinants. *The Indian Economic Journal*, *68*(4), 593-609
- Nethan S, Sinha D, Mehrotra R. Non Communicable Disease Risk Factors and their Trends in India. Asian Pac J Cancer Prev. 2017 Jul 27;18(7):2005-2010. doi: 10.22034/APJCP.2017.18.7.2005. PMID: 28749643; PMCID: PMC5648412.
- Rajeev Gupta, Denis Xavier, Hypertension: The most important non communicable disease risk factor in India, Indian Heart Journal, Volume 70, Issue 4, 2018, Pages 565-572, ISSN 0019-4832
- Leanne Riley, Regina Guthold, Melanie Cowan, Stefan Savin, Lubna Bhatti, Timothy Armstrong, Ruth Bonita, "The World Health Organization STEPwise Approach to Noncommunicable Disease Risk-Factor Surveillance: Methods, Challenges, and Opportunities", American Journal of Public Health 106, no. 1 (January 1, 2016): pp. 74-78.
- Geetha R. Menon, Jeetendra Yadav, Denny John: Burden of non-communicable diseases and its associated economic costs in India, Social Sciences & Humanities Open, Volume 5, Issue 1, 2022, 100256, ISSN 2590-2911
- Mohanty S, Venkatarao E, Yasobant S. Non- communicable disease care and physical activity promotion in India: analysis of recent policies, guidelines and workplans. Fam Med Com Health 2020;8:e000206. doi:10.1136/ fmch-2019-000206
- Christe, D. M., Vijaya, S., & Tharangini, K. (2020). Screening for non-communicable diseases. International Journal of Reproduction Contraception Obstetrics and Gynecology, 9(3), 1092. https://doi.org/10.18203/2320-1770.ijrcog20200881
- Mishra, U. S., Sebastian, I. R., Joe, W., & Mehdi, A. (2016). Surveillance of chronic diseases: Challenges and strategies for India. https://www.econstor.eu/handle/10419/176349

STREAM B2: HEALTH PROGRAMME, POLICY AND PLANNING

MPHE406: HEALTH POLICY, PROCESS AND PLANNING:

- Policy making key components
- Policy framework
- Stakeholders in policy making
- Effects of different interest and advocacy groups in influencing health policy
- Translating research in policy making
- Effects of national and international affairs on health policy
- Introduction to different national population, disease control, tobaccocontrol, nutrition, maternal and child health policies
- Short-term versus long-term policies
- Resources allocation to optimize health
- Using research and data to drive good policy making

Suggested Readings:

- Roemer, Milton (1977); Comparative National policies on Health care, New York; Marcel Dekker Inc; Chapter 1
- GILL WALT, LUCY GILSON, Reforming the health sector in developing countries: the central role of policy analysis, Health Policy and Planning, Volume 9, Issue 4, December 1994, Pages 353–370
- Burau, Viola and Blank, Robert H. (2006) 'Comparing health policy: An assessment of typologies of health systems', Journal of Comparative Policy Analysis: Research and Practice, 8: 1, 63 — 76
- Bomhof-Roordink H, Gärtner FR, Stiggelbout AM, et alKey components of shared decision-making models: a systematic review BMJ Open 2019;9:e031763. doi: 10.1136/bmjopen-2019-031763
- Kilbourne AM, Garrido MM, Brown AF. Translating research into policy and action. Health Serv Res. 2022 Jun;57 Suppl 1(Suppl 1):5-8. doi: 10.1111/1475-6773.13980. Epub 2022 Apr 27. PMID: 35362119; PMCID: PMC9108221.
- The complexity of resource allocation for health; Dieleman, Joseph L et al.; The Lancet Global Health, Volume 3, Issue 1, e8 - e9
- Anne Veenstra, Bas Kotterink. Data-Driven Policy Making: The Policy Lab Approach. 9th International Conference on Electronic Participation (ePart), Sep 2017, St. Petersburg, Russia.

MPHE407: DESIGN AND EVALUATION OF PUBLIC HEALTH PROGRAMS (INCLUDING CURRENT NHPs):

- Concepts underlying the design of health program
- Basic approaches to the design in health programmes, with a focus on lowresource settings
- Analysis and interpretation of studies/programs
- Communication in conducting public health research
- National health programmes in India (including goals, objectives, purposes, organization, manpower, sources, activities, roles and responsibilities)

Suggested Readings:

- The concept of mechanism from a realist approach; Lacouture et al. Implementation Science (2015) 10:153 DOI 10.1186/s13012-015-0345-7
- Brownson, R. C., Fielding, J. E., & Maylahn, C. M. (2009). Evidence-Based public Health: a fundamental concept for public health practice. Annual Review of Public Health, 30(1)
- Ramaswamy, R., Shidhaye, R. & Nanda, S. Making complex interventions work in low resource settings: developing and applying a design focused implementation approach to deliver mental health through primary care in India. *Int J Ment Health Syst* **12**, 5 (2018)
- Aranda Jan, C., Jagtap, S., & Moultrie, J. (2016). *Towards A Framework for Holistic Contextual Design for Low-Resource Settings*. https://doi.org/10.17863/CAM.7254
- J P Habicht, C G Victora, J P Vaughan, Evaluation designs for adequacy, plausibility and probability of public health programme performance and impact., *International Journal of Epidemiology*, Volume 28, Issue 1, Feb 1999, Pages 10–18
- Akash Sagar, Himanshi Arora & Meerambika Mahapatro (2024). Evaluation of National Health Programmes of India: An Analysis, Journal of South Asian Research, 2: 2, pp. 177-185

MPHE408: TRANSLATING RESEARCH FOR HEALTH POLICY AND ADVOCACY:

- Different forms of power are influential to policy making
- Concepts of Governance and Institutions
- Different theories useful in policy analysis
- Political nature of evidence for policy making in health
- Written and verbal competence in communicating evidence to inform policy
- Critical appraisal of issues in health policy and financing

Suggested Readings:

- Radhika Gore & Richard Parker (2019) Analysing power and politics in health policies and systems, Global Public Health
- Lee, K., Kamradt-Scott, A. The multiple meanings of global health governance: a call for conceptual clarity. *Global Health* **10**, 28 (2014).
- Gill Walt, Jeremy Shiffman, Helen Schneider, Susan F Murray, Ruairi Brugha, Lucy Gilson, 'Doing' health policy analysis: methodological and conceptual reflections and challenges, *Health Policy and Planning*, Volume 23, Issue 5, September 2008, Pages 308–317
- Embrett, M. G., & Randall, G. (2014). Social determinants of health and health equity policy research: Exploring the use, misuse, and nonuse of policy analysis theory. Social Science & Medicine, 108, 147–155.
- Liverani M, Hawkins B, Parkhurst JO (2013) Political and Institutional Influences on the Use of Evidence in Public Health Policy. A Systematic Review. PLoS ONE8(10):e77404.doi:10.1371/journal.pone.0077404
- Kutzin, J. & World Health Organization. (2008). Health financing policy: a guide for decision-makers. In Health Financing Policy Paper [Article].

MPHE409: CURRENT ISSUES IN HEALTH POLICY: NATIONAL AND GLOBAL PERSPECTIVE:

- Theory explaining public health action, its evolution and application inhealth policy
- Methods of assessing the health impact of different types of policy;national and global perspective
- Assessing health impacts of different policies across sectors
- Impact of health threats and interventions to counter health threatsincluding crisis management

Suggested Readings:

- Frieden, T. R. (2010). A framework for public health action: the Health Impact Pyramid. *American Journal of Public Health*, *100*(4), 590–595.
- Cole, B. L., & Fielding, J. E. (2006). Health Impact Assessment: A tool to help policy makers understand health beyond health care. Annual Review of Public Health, 28(1), 393–412.
- An assessment of interactions between global health initiatives and country health systems, The Lancet, Volume 373, Issue 9681, 2009, Pages 2137-2169, ISSN 0140-6736
- Brownson RC, Seiler R, Eyler AA. Measuring the impact of public health policy. Prev Chronic Dis. 2010 Jul;7(4):A77. Epub 2010 Jun 15. PMID: 20550835; PMCID: PMC2901575.

MPHE410: ROLE OF NON-GOVERNMENTAL ORGANIZATIONS (NGOS) IN HEALTH CARE:

- Health service delivery and program Implementation
- Research and evidence generation
- Training and education
- Inter-sectoral coordination in health including Public Private Partnership
- Advocacy and planning in health care

Suggested Readings:

- Bajpai, N., Sachs, J. D., & Dholakia, R. H. (2009). Improving access, service delivery and efficiency of the public health system in rural India. Columbia University Libraries.
- Sodani, Prahlad Rai; Sharma, Kalpa. Strengthening Primary Level Health Service Delivery: Lessons from a State in India. Journal of Family Medicine and Primary Care 1(2):p 127-131, Jul–Dec 2012.
- Mathur, P., Srivastava, S., Lalchandani, A., & Mehta, J. L. (2017). Evolving role of telemedicine in health care delivery in India. Primary Health Care Open Access, 07(01).
- Orton, L., Lloyd-Williams, F., Taylor-Robinson, D., O'Flaherty, M., & Capewell, S. (2011). The Use of research evidence in Public health decision making Processes: Systematic review. PLoS ONE, 6(7), e21704.
- Heather Tallis, Katharine Kreis, Lydia Olander, Claudia Ringler; Aligning evidence generation and use across health, development, and environment, Current Opinion in Environmental Sustainability, Science Direct, Volume 39, 2019, Pages 81-93, ISSN 1877-3435,
- Zodpey, S. P., Negandhi, H., & Yeravdekar, R. (2014). Future directions for public health education reforms in India. Frontiers in Public Health
- Negandhi, Himanshu1; Sharma, Kavya2; Zodpey, Sanjay P.3,. History and Evolution of Public Health Education in India. Indian Journal of Public Health 56(1):p 12-16, Jan–Mar 2012
- Singh, S., Miller, E. & Closser, S. Nurturing transformative local structures of multisectoral collaboration for primary health care: qualitative insights from select states in India. *BMC Health Serv Res* **24**, 634 (2024).
- Delisle, H., Hatcher Roberts, J., Munro, M., Jones, L., Gyorkos, T. W., & BioMed Central. (2005). The role of NGOs in global health research for development [Journal-article]. Health Research Policy and Systems. https://doi.org/10.1186/1478-4505-3-3
- The World Bank. (n.d.). Does Involvement of Local NGOs Enhance Public Service Delivery? Cautionary Evidence from a Malaria-Prevention Evaluation in India. https://fid4sa-repository.ub.uni-heidelberg.de/3811/

STREAM B3: HEALTH SYSTEM MANAGEMENT

MPHE411: STRATEGIC MANAGEMENT, INNOVATIONS AND ENTREPRENEURSHIP IN HEALTHCARE

- Strategy: various definitions
- Major concepts and frameworks in strategic management: SWOT, experience curve, portfolio theory, value chain
- Strategic thinking and decision making
- Strategic planning: Environmental, scenario, implementation and evaluation
- Sustainability
- Various sources for financing a new venture: finalize your target audience
- Preparing a business speech, elevator pitch

- Innovations in public health
- Health informatics, e-Health
- Telemedicine, m-Health
- Conflicts management and negotiations in business world
- Business modeling: preparing your own business model
- Peer review of individual business model

Suggested Readings:

- Kash, B. A., Spaulding, A., Gamm, L. D., & Johnson, C. E. (2014). Healthcare strategic management and the resource based view. *Journal of Strategy and Management*, *7*(3), 251–264.
- Andrieiev, I., Trehub, D., Khatsko, K., Sokolovska, I., & Ganzhiy, I. (2024). Strategic management in healthcare: the impact of strategic decisions on achieving organizational goals and improving the quality of healthcare services. *Multidisciplinary Science Journal*, *6*, 2024ss0217.
- Flessa, S., & Huebner, C. (2021). Innovations in Health Care—A Conceptual Framework. *International Journal of Environmental Research and Public Health*, *18*(19), 10026
- Harrison, J. P. (2010). Essentials of strategic planning in healthcare. In *Health Administration Press*. SWOT Analysis
- Fagefors, C., & Lantz, B. (2021). Application of Portfolio Theory to Healthcare Capacity Management. *International Journal of Environmental Research and Public Health*, *18*(2), 659.
- Imhoff, M., Webb, A., & Esicm, A. G. O. B. O. T. (2000). Health informatics. Intensive Care Medicine, 27(1), 179–186.
- Wicks, P., Stamford, J., Grootenhuis, M. A., Haverman, L., & Ahmed, S. (2013). Innovations in e-health. Quality of Life Research, 23(1), 195–203.
- Krupinski, E.A.; Weinstein, R.S. Telemedicine, Telehealth and m-Health: New Frontiers in Medical Practice. *Healthcare* **2014**, *2*, 250-252.
- Qiu, Q., & Cameron, G. T. (2007). Public Relations Perspective to Manage Conflict in a public health Crisis, a. In Journal of Dispute Resolution (Vol. 2007, Issue 1, p. Article 15).
- Angeli, F., & Jaiswal, A. K. (2016). Business Model Innovation for Inclusive Health Care Delivery at the Bottom of the Pyramid. Organization & Environment, 29(4), 486-507.

MPHE412: ADVANCED OPERATIONS RESEARCH

- History of operation research and seven stages of OR
- Safety, Acceptability, Feasibility and Effectiveness (SAFE) in designing Public Health Interventions
- Field interventions and field trials
- Stage 1: Formulate/define organizational problem
- Stage 2: Observe the system
- Stage 3: Create a mathematical model of the problem
- Stage 4: Model validation and application to the problem
- Stage 5: Identification of a suitable alternative
- Stage 6: Results discussion and conclusion
- Stage 7: Implementation and evaluation of the recommendation

Suggested Readings:

- Hillier, F. S., J., & Lieberman, G. J. (2010). *Introduction to Operations research*. McGraw-Hill. https://www.mhhe.com
- Shetaban, S., Seyyed Esfahani, M. M., Saghaei, A., & Ahmadi, A. (2020). Operations research and health systems: A literature review. In Journal of Industrial Engineering and Management Studies, Journal of Industrial Engineering and Management Studies (Vol. 7,

Issue 2, pp. 240–260). https://doi.org/10.22116/JIEMS.2020.231406.1360
- Flagle, C. D. (2002). Some origins of operations research in the health services. Operations Research, 50(1), 52–60. https://doi.org/10.1287/opre.50.1.52.17805
- Xie, X., & Lawley, M. A. (2015). Operations research in healthcare. International Journal of Production Research, 53(24), 7173–7176. https://doi.org/10.1080/00207543.2015.1102356
- Grieco, L., Utley, M., & Crowe, S. (2020). Operational research applied to decisions in home health care: A systematic literature review. *Journal of the Operational Research Society*, *72*(9), 1960–1991. https://doi.org/10.1080/01605682.2020.1750311

MPHE413: ADVANCED FINANCIAL MANAGEMENT AND BUDGETING

- Introduction to financial management
- Tools of financial analysis and planning in healthcare
- Cash flow, accounts and balancing budget
- Cost and dividend for health outcomes
- Effectiveness and efficiency
- Sustainability of health programs

Suggested Readings:

- Preker AS, Carrin G, Dror D, Jakab M, Hsiao W, Arhin-Tenkorang D. Effectiveness of community health financing in meeting the cost of illness. Bull World Health Organ. 2002;80(2):143-50. PMID: 11953793; PMCID: PMC2567719.
- Patel P. Efficacy, Effectiveness, and Efficiency. Natl J Community Med 2021;12(2)
- Personal document from a credible expert
- Liaropoulos L, Goranitis I. Health care financing and the sustainability of health systems. Int J Equity Health. 2015 Sep 15;14:80. doi: 10.1186/s12939-015-0208-5.
- Lawson, R.A.. (2005). The use of activity based costing in the healthcare industry: 1994 vs. 2004. Research in Healthcare Financial Management. 10. 77-94.
- Perleth M, Jakubowski E, Busse R. What is 'best practice' in health care? State of the art and perspectives in improving the effectiveness and efficiency of the European health care systems. Health Policy. 2001 Jun;56(3):235-50. doi: 10.1016/s0168-8510(00)00138-x. PMID: 11399348.

MPHE414: ORGANIZATIONAL MANAGEMENT AND SERVICES

- Components of organization: Purpose, Coordination, Division of labor and Hierarchy
- Project Management Lifecycle
- Setting common goals and objectives
- Analytical thinking
- Risk identification and control
- Leadership
- Priority setting and resource allocation
- Why organizations fail? Learn from case stories

Suggested Readings:

- Marengo, Luigi; Dosi, Giovanni (2003) : Division of labor, organizational coordination and markt mechanism in collective problem-solving, LEM Working Paper Series, No. 2003/04, Scuola Superiore Sant'Anna, Laboratory of Economics and Management (LEM), Pisa
- Ahmady, G. A., Mehrpour, M., Nikooravesh, A., & The Authors. (n.d.). Organizational structure. In Ardabil Industrial Management Institute, Procedia - Social and Behavioral Sciences (Vol. 230, pp. 455–462).
- Radević, I., Dimovski, V., Lojpur, A., & Colnar, S. (2021). Quality of Healthcare Services in Focus: The Role of Knowledge Transfer, Hierarchical Organizational Structure and Trust. *Knowledge Management Research & Practice*, *21*(3), 525–536. https://doi.org/10.1080/14778238.2021.1932623
- Mısırlıoğlu, A., & Murt, E. (2024). PROJECT MANAGEMENT APPROACH IN HEALTHCARE SERVICES. Journal of Law and Sustainable Development, 12(7), e3798. https://doi.org/10.55908/sdgs.v12i7.3798
- Tóth, K., Helmeczi, G., Paulikné Varga, B., Takács, P., Levente Varga, László Lorenzovici, & Enikő Kovácsné Orosz. (2023). Project management in healthcare. https://healall.eu/home/wp-content/uploads/2023/11/J09_Project-management-in-Healthcare_EN-10.30.pdf
- Mitton, C., & Donaldson, C. (2004). Health care priority setting: principles, practice and challenges. Cost Effectiveness and Resource Allocation, 2(1), 3. https://doi.org/10.1186/1478-7547-2-3
- Angelis, A., Kanavos, P., & Montibeller, G. (2016). Resource allocation and priority setting in health care: a multi-criteria decision analysis problem of value? Global Policy, 8(S2), 76–83. https://doi.org/10.1111/1758-5899.12387
- Seixas, B.V., Dionne, F. & Mitton, C. Practices of decision making in priority setting and resource allocation: a scoping review and narrative synthesis of existing frameworks. Health Econ Rev 11, 2 (2021). https://doi.org/10.1186/s13561-020-00300-0

MPHE415: EFFECTIVE COMMUNICATION IN PUBLIC HEALTH:

- Public speaking
- Effective Communication: Verbal versus Non – verbal communication
- Various forms of written communication
- Evidence based advocacy
- Consensus building
- Using audio-visual aid in communication
- Etiquettes and professionalism

Suggested Readings:

- Wayne W. LaMorte, MD, PhD, MPH; August 29, 2018; Boston University School of Public Health
- Making Health Communications Work", U.S. Department of Health & Human Services. Public Health Service. National Institutes of Health and National Cancer Institute
- Goyet. (n.d.). Community participation. In Manual (pp. 177–179). https://ec.europa.eu/echo/files/evaluation/watsan2005/annex_files/WEDC/es/ES12CD.pdf
- Bhasin, Veena. (2007). Medical Anthropology: A Review. Ethnomedicine. 1. 10.1080/09735070.2007.11886296.
- Ravi, P. (2021). Significance of Non-Verbal Communication in Effective Healthcare Management. www.academia.edu.
- Dominika Kwasnicka, Stephan U Dombrowski, Martin White & Falko; Sniehotta (2016)

Theoretical explanations for maintenance of behaviour change: a systematic review of behaviour theories, Health Psychology Review, 10:3, 277-296, DOI: 10.1080/17437199.2016.1151372

- Welch, D. (2017). Behaviour change and theories of practice: Contributions, limitations and developments. Social Business, 7(3-4), 241-261. Article 21. https://doi.org/10.1362/204440817X15108539431488
- Rachel Davis, Rona Campbell, Zoe Hildon, Lorna Hobbs & Susan; Michie (2015) Theories of behaviour and behaviour change across the social and behavioural sciences: a scoping review, Health Psychology Review, 9:3, 323-344, DOI: 10.1080/17437199.2014.941722

STREAM B4: RMNCH+A

MPHE416: REPRODUCTIVE AND SEXUAL HEALTH

- Fundamentals of reproductive biology
- Adolescent Sexual and Reproductive Health
- Understanding Reproductive Health Policy
- Family Welfare and Reproductive Health measures
- Reproductive Health programs in India

Suggested Readings:

- https://books.google.co.in/books?hl=en&lr=&id=ZKZFDwAAQBAJ&oi=fnd&pg=PR8&dq=Fundamentals+of+human+reproduction+open&ots=MGGwkdbKGL&sig=9_jeZaGXg_aa17QpWJHWqfQAFWY&redir_esc=y#v=onepage&q&f=false
- Mehta, B. (2013). Adolescent reproductive and sexual health in India: the need to focus. Journal of Young Medical Researchers, 1(1). https://doi.org/10.7869/jymr.7
- Jejeebhoy, S. J., & Santhya, K. G. (2011). Sexual and reproductive health of young people in India: A review of policies, laws and programmes (By Population Council). Population Council.
- Santhya, K., & Jejeebhoy, S. J. (n.d.). Young people's sexual and reproductive health in India: Policies, programmes and realities. Knowledge Commons. https://knowledgecommons.popcouncil.org/departments_sbsr-rh/529/
- Sanneving, L., Trygg, N., Saxena, D., Mavalankar, D., & Thomsen, S. (2013). Inequity in India: the case of maternal and reproductive health. Global Health Action, 6(1). https://doi.org/10.3402/gha.v6i0.19145
- Tripathi, N. (2021). Does family life education influence attitudes towards sexual and reproductive health matters among unmarried young women in India? PLoS ONE, 16(1), e0245883. https://doi.org/10.1371/journal.pone.0245883
- Bruns, H. R., SN. (2016). Government-Led Programs to Improve Maternal and Infant Health in India: a Systematic Review of Literature. In J. Kue & The Ohio State University, *The Ohio State University* [Journal-article]

MPHE417: MATERNAL, NEWBORN AND CHILD HEALTH (MNCH):

- Introduction to maternal, new-born and child health programs and their behavioral basis
- Historical developments in MCH in India
- Reproductive & Perinatal Epidemiology
- Prenatal and Infant Growth and Development
- Issues in the Reduction of Maternal and Neonatal Mortality
- Preventing peri-natal and infant mortality

- Infectious Disease and Child Survival
- Nutrition and Growth in Maternal and Child Health
- Legislations and programs in MCH

Suggested Readings:

- Vellakkal, S., Gupta, A., Khan, Z., Stuckler, D., Reeves, A., Ebrahim, S., Bowling, A., & Doyle, P. (2016). Has India's national rural health mission reduced inequities in maternal health services? A pre-post repeated cross-sectional study. *Health Policy and Planning*, *32*(1), 79–90.
- Kaur, G., Gupta, K., & Shyam, S. (2021). Evaluation of antenatal services at Family welfare Centre under RMNCH+A Programme in Delhi. *Journal of Family Medicine and Primary Care*, *10*(10), 3869–3875.
- Das, A. K., Yadav, A., Population Council Consulting, & LEHS, WISH Foundation. (2023). A Critical Review of India's RMNCH+A Strategy (2014) to achieve UN SDG 2030 goal for Neonatal Mortality Rate [Article]. *Demography India*, 119.
- Taneja, G., Sridhar, V. S., Mohanty, J. S., Joshi, A., Bhushan, P., Jain, M., Gupta, S., Khera, A., Kumar, R., & Gera, R. (2019). India's RMNCH+A Strategy: approach, learnings and limitations. *BMJ Global Health*, *4*(3), e001162.
- Engmann, C. M., Khan, S., Moyer, C. A., Coffey, P. S., & Bhutta, Z. A. (2016). Transformative Innovations in Reproductive, Maternal, Newborn, and Child Health over the Next 20 Years. *PLoS Medicine*, *13*(3), e1001969.
- Victora, C. G., Barros, F. C., & Post-Graduate Course in Epidemiology, Universidade Federal de Pelotas, Rio Grande do Sul, Brazil and PAHO/WHO Latin American Center for Perinatology, Montevideo, Uruguay. (2001). Infant mortality due to perinatal causes in Brazil: trends, regional patterns and possible interventions. São Paulo Medical Journal - Revista Paulista De Medicina, 119–1, 33–42.
- Morris, S. K., Bassani, D. G., Awasthi, S., Kumar, R., Shet, A., Suraweera, W., & Jha, P. (2011). Diarrhea, pneumonia, and infectious disease mortality in children aged 5 to 14 years in India. PLoS ONE, 6(5), e20119. https://doi.org/10.1371/journal.pone.0020119
- Khandelwal, S., Dayal, R., Bhalla, S., Public Health Foundation of India, Population Council New Delhi, & Visva-Bharati University. (2014). A review of government programmes for women and Children in India: Implications for nutrition during the thousand-day period. In The Indian Journal of Nutrition and Dietetics.

MPHE418: ADOLESCENT HEALTH:

- Overview of population health approaches for adolescents
- Adolescent Health and Development
- The Social Context of Adolescent Health and Development
- International Adolescent Health
- Adolescent Health status in India
- Adolescent Health Development - policy and systems
- Health issues specific to adolescents: anemia, teenage pregnancy, menstrualhygiene, obesity, mental health promotion and illness prevention, substance useprevention, violence, media etc.

Suggested Readings:

- Wadhwa, R., Chaudhary, N., Bisht, N., Gupta, A., Behera, N., Verma, A. K., Chopra, M., Jain, M., Verma, G., Gupta, S., Taneja, G., & Gera, R. (2018). Improving adolescent health services across high priority districts in 6 states of India: Learnings from an integrated reproductive maternal newborn child and adolescent health project. *Indian Journal of Community Medicine*, *43*(5), 6.

- Sahadevan, S., Iang, M. D., & Dureab, F. (2023). Effect of adolescent health policies on health outcomes in India. *Adolescents*, *3*(4), 613–624.
- Taghizadeh Moghaddam, H., 1, Shahinfar, S., 2, Bahreini, A., 3, Ajilian Abbasi, M., Fazli, F., & Saeidi, M. (2016). Adolescence Health: the Needs, Problems and Attention. In Int J Pediatr (Vols. 4–4, pp. 1423–1438). http://ijp.mums.ac.ir
- Health risks and developmental transitions during adolescence. (n.d.). Google Books.
- Chu-Ko, F., Chong, M., Chung, C., Chang, C., Liu, H., & Huang, L. (2021). Exploring the factors related to adolescent health literacy, health-promoting lifestyle profile, and health status. BMC Public Health, 21(1), 2196. https://doi.org/10.1186/s12889-021-12239-w
- Review of the India Adolescent Health Strategy in the context of disease burden among adolescents, Dandona, Rakhi et al. The Lancet Regional Health - Southeast Asia, Volume 20, 100283
- Jain N, Bahl D, Mehta R, et alProgress and challenges in implementing adolescent and school health programmes in India: a rapid reviewBMJ Open 2022;12:e047435. doi: 10.1136/bmjopen-2020-047435

MPHE419: GENDER AND HEALTH:

- Define concepts - Gender, vulnerable populations, gender equality and equity and emerging issues
- Understand the difference between equity and equality
- Understand different forms of social exclusion
- Explain the difference between sex and gender and how these variables, combined with other forms of social exclusion impacts on health
- To increase understanding of the importance, benefits and urgency to identify and reduce barriers and address the needs of women and socially excluded groups, and promote their agency in the context of accessing healthcare and related information
- To increase understanding of the inter- sectionalism between gender and other types of social exclusion/inclusion and patients' experiences in accessingand utilizing health services and the impacts on uptake and utilization of services
- To increase understanding of the realities of discrimination from the grassroot perspective
- To identify good practices in Gender and Social Inclusion (GSI) within India
- To become familiar with toolkits for including GSI in public health research, programs, policies and advocacy

Suggested Readings:

- Agarwal, Disha & Bhuvanasri, Polasa & tetarwal, preeti & Pandey, Anjali & Tripathi, Somdutt. (2025). Gender Equality and Equity: Concepts, Challenges and Progress.
- Yuxi Wang, Aleksandra Torbica, Investigating the relationship between health and gender equality: What role do maternal, reproductive, and sexual health services play?, Health Policy, Volume 149, 2024, 105171, ISSN 0168-8510, https://doi.org/10.1016/j.healthpol.2024.105171
- McDonald, Et. Al., World Health Organization, & Department of Gender and Women's Health. (2002). Gender analysis in health: A review of selected tools [Review]. In World Health Organization, *World Health Organization*.
- Cuesta, J., López-Noval, B., & Niño-Zarazúa, M. (2024). Social exclusion concepts, measurement, and a global estimate. PLoS ONE, 19(2), e0298085. https://doi.org/10.1371/journal.pone.0298085
- Greaves, L.; Ritz, S.A. Sex, Gender and Health: Mapping the Landscape of Research and Policy. Int. J. Environ. Res. Public Health 2022, 19, 2563. https://doi.org/10.3390/ijerph19052563
- Ziegler, S., Srivastava, S., Parmar, D. et al. A step closer towards achieving universal health

coverage: the role of gender in enrolment in health insurance in India. BMC Health Serv Res 24, 141 (2024). https://doi.org/10.1186/s12913-023-10473-z
- View of The need for age-inclusive and gender-sensitive social policies for India's longevity society. (n.d.). http://www.aging-longevity.org.ua/index.php/journal-description/article/view/168/161
- Mott, J., Kilsby, D., & Eller, E. (2025, April 29). Gender Equality, Disability and Social Inclusion Self-Assessment Tool. Figshare. https://opendocs.ids.ac.uk/articles/report/Gender_Equality_Disability_and_Social_Inclusion_Self-Assessment_Tool/29097977/1?file=54638972
- IRC. (n.d.). Towards Gender Equity and Social Inclusion (GESI) responsive WASH Systems Strengthening. https://researchonline.lshtm.ac.uk/id/eprint/4675052/

MPHE420: PUBLIC HEALTH NUTRITION

- Appreciate the basic concepts and principles of foods and nutrition relevant to human health
- Summarize population based dietary and nutritional recommendations
- Define the concept, purpose and scope of Public Health Nutrition
- Understand the definition, utility and applications of epidemiology in nutritional sciences
- Recognize the role of community nutrition in improving human health
- Utilize suitable data and assessment methodologies to conduct communityneeds assessment
- Recognize the pillars of a healthy community
- Identify the most relevant nutrition concerns in the community at present and enlist strategies for their prevention and management (Adolescent, Women,Maternal and child under-nutrition, nutrition transition, over-nutrition and chronic diseases)
- Demonstrate an understanding of principles of nutrition education and enlistthe steps of developing nutrition education programs
- Demonstrate an understanding of project planning and management in nutrition programmes
- Appreciate inter-sectoral nature of nutrition and food policy
- Enlist the features of various ongoing nutrition programs
- Under/over nutrition

Suggested Readings:

- Mann, J., & Truswell, A. S. (Eds.). (2002). Essentials of human nutrition (Second Edition). Oxford University Press. httpslibrary.knu.edu.afopactemp15992.pdf
- Alt, K.W.; Al-Ahmad, A.; Woelber, J.P. Nutrition and Health in Human Evolution–Past to Present. Nutrients 2022, 14, 3594. https://doi.org/10.3390/nu14173594
- Caraher M, Coveney J. Public health nutrition and food policy. Public Health Nutrition. 2004;7(5):591-598. doi:10.1079/PHN2003575
- Mankar, A., Kawalkar, U., Syed, Z. Q., & Gaidhane, A. (2025). Nutrition literacy: a key factor in public health improvement in India. Frontiers in Nutrition, 12, 1643629. https://doi.org/10.3389/fnut.2025.1643629
- Shankar, B., Agrawal, S., Beaudreault, A. R., Avula, L., Martorell, R., Osendarp, S., Prabhakaran, D., & Mclean, M. S. (2017). Dietary and nutritional change in India: implications for strategies, policies, and interventions. Annals of the New York Academy of Sciences, 1395(1), 49–59.

https://doi.org/10.1111/nyas.13324

- Sreedevi, A. & Department of Community Medicine, Amrita Institute of Medical Sciences, Ponnekara PO, Amrita Vishwa Vidyapeetham, Kochi, Kerala, India. (2015). An overview of the development and status of national nutritional programs in India. In Journal of Medical Nutrition and Nutraceuticals (Vol. 4, Issue 1, pp. 5–6).
- Khandelwal, S., Dayal, R., Bhalla, S., Paul, T., Public Health Foundation of India, Population Council New Delhi, & Visva-Bharati University. (2014). A review of government programmes for women and Children in India: Implications for nutrition during the thousand day period. In The Indian Journal of Nutrition and Dietetics.