

# INDIAN ASSOCIATION FOR SOCIAL SCIENCES AND HEALTH

**21<sup>st</sup> Annual Conference**

**February 11- 13, 2026**

**University of Rajasthan, Jaipur**

**Towards Viksit Bharat: Wellness for All**  
*Integrating Social Science in Health Policy and Practice*



In collaboration with:

**RA Podar Institute of Management**  
**University of Rajasthan, Jaipur**

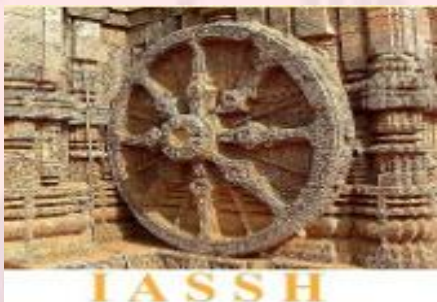
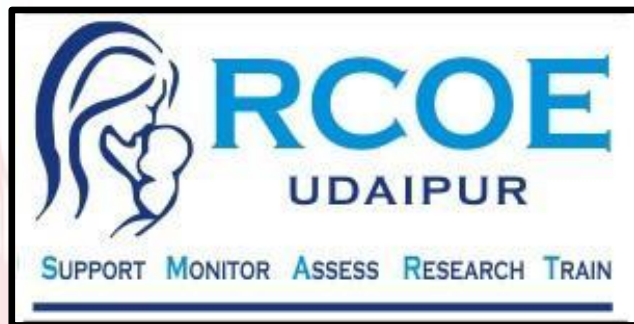
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**Souvenir &**

**Abstracts**

Conference Supported by



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**21<sup>st</sup> IASSH National Conference jointly with  
University of Rajasthan**

THEME:

**Towards Viksit Bharat: Wellness for All**  
*Integrating Social Science in Health Policy and Practice*

11<sup>th</sup> – 13<sup>th</sup> February 2026

**Programme Schedule**

**DAY-1**

**11<sup>th</sup> February 2026 (Wednesday)**

09:00-10:00 hrs.	<b>Registration:</b> RA Podar Auditorium
10:00-11:30 hrs.	<p><b>Inaugural Session</b></p> <p><b>Welcome Address Dr. Kshipra Jain</b>, Conference Convener, University of Rajasthan</p> <p><b>Address by the Director of the Conference: Prof. Anurag Sharma</b>, University of Rajasthan</p> <p><b>About the Conference: Dr. V. Selvaraju</b>, General Secretary, IASSH</p> <p><b>President’s Address: Prof. R. Nagarajan</b>, President, IASSH</p> <p><b>Address by Chairperson: Prof. Alpna Kateja</b>, Vice-Chancellor, University of Rajasthan</p> <p><b>Address by Chief Guest: Shri Naresh Kumar Goyal</b>, Commissioner, Medical Education Department, Directorate of Medical Education, Jaipur</p> <p><b>Address by Guest of Honor: Dr. Anil Agarwal</b>, UNICEF, Rajasthan</p> <p><b>Address by Guest by Honor: Prof. F. Ram</b>, Former Director, IIPS, Mumbai</p> <p><b>Release of Conference Souvenir &amp; Abstracts</b></p> <p><b>Announcement of Best Publication Awards: Prof. T.V. Sekhar</b>, Former President, IASSH</p> <p><b>Presentation of Best Publication Awards by Chief Guest</b></p> <p><b>Vote of Thanks: Dr. Bheem Singh Shekhawat</b>, Organizing Secretary, University of Rajasthan</p> <p><b>Venue:</b> R.A. Podar Auditorium</p>
11:30-12:00 hrs.	<b>High Tea</b>
12:00-13:00 hrs.	<p><b>Ninth Prof. John Caldwell Memorial Lecture</b></p> <p><b>Welcome: Prof. R. Nagarajan</b>, President, IASSH</p> <p><b>Chair / Co-Chair: Prof. KNM Raju</b>, Former Director, PRC, ISEC Bangalore</p> <p><b>Prof. T.V. Sekher</b>, Former President, IASSH</p> <p><b>Speaker: Dr. Ravi Verma</b>, Regional Director, International Center for Research on Women, Asia Regional Office, New Delhi</p> <p><b>Topic: Fertility Transition to Gender Justice: Revisiting Caldwell’s Theory of Social Change</b></p> <p><b>Vote of Thanks: Dr. Manas Pradhan</b>, Treasurer, IASSH</p> <p><b>Venue:</b> R.A. Podar Auditorium</p>
13:00-14:00 hrs.	<b>Lunch Break</b>

13:00-14:30 hrs.	<b>Poster Presentation: Session-A</b>	
	<b>Evaluators:</b> Prof. C. Aruna, Dr. Harihar Sahoo, Dr. Juel Rana	
	<b>Session Coordinators:</b> Dr. Madhu, Dr. Anita Meena, Kaavya, Gyan	
	Understanding Insomnia in Rural Older Women: Insights from Longitudinal Aging Study in India	Anshika Singh
	Socio-Economic Determinants and Housing Arrangement Disparities in Depression among the Elderly: A Cross-Sectional Comparative Study	Anil Kumar Pal
	Ageing, Living Arrangements and Self-Reported Health: Evidences from Four Rounds of the National Sample Survey.	Sanjeev Bakshi
	Community Based Awareness Pathways and Rural Health Insurance Enrolment: A Social and Behavioural Study Towards Wellness of All	Vivek Kumar
	Prevalence and Risk Factors of Abnormal Pulse Rate Patterns among Indian Adults Aged 45 Years and Above: Evidence from the Longitudinal Ageing Study in India (2017-18)	Sumit Kumar Das
	Undiagnosed and Uninformed: Hypertension and Information Asymmetry among Older Adults in India	Sumit Saurav
	Bio-Social Factors and Neonatal Mortality among Vulnerable Tribe of India	Sonali Panda
	Home Was Not a Place of Comfort": A Narrative Inquiry into Childhood Exposure to Intimate Partner Violence Among Young Badaga Men	Swethashri M
	Child Health Inequalities in India: Exploring the Road Travelled Over Decades Using Bibliometric Analysis	Kavita Bangarwa
	Trends in Avoidable Mortality Over the Life Course in India, 1990-2020	Devikrishna N B
	Measuring Multidimensional Energy Poverty in India: New Insights from NFHS-4 and NFHS-5	Tapas Bera
	Exploring the Role of BMI and Secondary Infertility among Indian Women	Asha Priyavasini Das
	Association Between Minimum Dietary Diversity and Anthropometric Failure among Children Aged 6–23 Months in Odisha	Kalyan Dash
	Mapping Digital Determinants of Student Well-Being: Development and Validation of the Combined Impact Scale (CIS)	Anandi Shukla
	Powering Primary Care: Solarisation as a Catalyst for Strengthened Health Systems in Rural Aspirational Districts of India	Veeresh Tadahal
	Multimorbidity and Socioeconomic Status and Healthcare Utilization among Older Adults in India	Dr. Sathya T
	Socioeconomic Disparities and Healthcare Access in Kathautia's Coal Mining Belt, Palamu, Jharkhand	Nirmal Singh
	Understanding Healthcare Expenditure Dynamics Across the Lifecycle in India: Evidence from the National Transfer Accounts Framework	Javed Alam
	Promoting healthy eating through food-label-based nudges: integrating behavioural insights into India's wellness agenda Using global evidence.	Anushka Agrawal

14:30-16:00 hrs.	<b>Technical Session 1: Ageing and Health</b> <b>Venue:</b> R.A. Podar Auditorium <b>Chair / Co-Chair:</b> Prof. Vinod Kumar / Dr. Illias K Sheikh <b>Session Coordinators:</b> Dr. Chitra Chowdhary, Suhani, Parmeshwar	
	Healthcare Interventions for Ageing Populations: A Systematic Review	Dr. Asharaf Abdul Salam
	Gender Disparity in Awareness of Social Security Schemes Among the Indian Elders	Dr. Prasanna Kumar Mudi
	Exploring Reasons for Non-Utilization of Healthcare Services among the Elderly with Non-Communicable Diseases in India: Evidence from LASI Wave 1	Mr. Jitender Prasad
	Does 'Where They Live' Matter? Exploring the Link Between Living Arrangements and Quality of Life Among the Elderly in India	Mr. Abishek Paul
	Cumulative Social Disadvantage and Mental Health Among Older Adults in India: Evidence from LASI Wave-I	Dr. Sneha Shrivastava
14:30-16:00 hrs.	<b>Technical Session 2: Morbidity</b> <b>Venue:</b> Class Room 1 <b>Chair / Co-Chair:</b> Prof. Arindam Das/ Dr. Suresh Jungari <b>Session Coordinators:</b> Dr. Manish Yadav, Abhishek ola, Ifra	
	Prevalence and Predictors of Multi-Morbidity Among Elderly in A Rural Setting of Andhra Pradesh	Prof. N. Audinarayana
	Disparities in Cervical Cancer Screening among Indian Women Aged 45 Years and Above	Dr. Aditya Singh
	Gender Disparities in Breast Cancer Outcomes in India	Dr. Shubham Ranjan
	Integrating Social Science for Wellness for All: Cross-Sectoral Pathways Towards Viksit Bharat	Dr. Tulsee Giri Goswami
	Availability, Accessibility & Quality of Healthcare Services for Sickle Cell Disorder Patients in Wardha, Maharashtra	Mr. Badal Santoshrao
14:30-16:00 hrs.	<b>Technical Session 3: Maternal and Child Health</b> <b>Venue:</b> Class Room 2 <b>Chair / Co-Chair:</b> Prof. Usha Ram/ Dr. Piyusha Majumdar <b>Session Coordinators:</b> Dr. Shilpi, Gaurav, Sakshi	
	Probabilistic Estimate of Non-Compliance to IFA Consumption Among Indian Pregnant Women: Evidences From NFHS-5 Data (2019-21)	Dr. Angan Sengupta
	Solar-Powered Cold Chain for Resilient Immunisation: Strengthening Vaccine Integrity and Child Health Outcomes in Rural North Karnataka	Dr. Rinshu Dwivedi
	Usage, Switching, and Discontinuation of Injectables Among Indian Women	Dr. Harihar Sahoo
	Who Gets Sterilized and When? Timing Of Post Caesarean Postpartum Tubectomy in India, NFHS 5 (2019–21)	Dr. Vidya Yadav
	Understanding Health Outcomes in Women After Hysterectomy: Insights from the Lambani Community of Karnataka	Dr. Roopashree Vadageri
16:00-16:15 hrs.	<b>Tea Break</b>	

16:15-17:45 hrs.	<b>Technical Session 4: Cultural Dimensions of Health</b> <b>Venue:</b> R.A. Podar Auditorium <b>Chair / Co-Chair:</b> Prof. N. Audinarayana / Dr. Manas Pradhan <b>Session Coordinators:</b> Dr. Rashmi Bundel, Aatmik, Khushi Chodhary	
	Building a Heart-Healthy Generation: Behavioural Determinants and Preventive Cardiology Awareness among Adolescents	Prof. Lalita Vatta
	Cultural Food Practices and Their Influence on Nutritional Health Outcomes Among Diverse Communities in Mumbai	Dr. Rajesh Bhoite
	Transition in family structure in Indias during 1992-2020: a decomposition analysis	Dr. Dipti Govil
	Dual Risk Behaviours: The Role of Alcohol Use in Tobacco Cessation Attempts among Indian Adults	Dr. Mohai Menul Biswas
	Cultural Determinants of Neonatal Health: A Checklist-Based Assessment of Traditional Care Practices in Tribal Block of Odisha	Rakesh Ranjan Nanda
16:15-17:45 hrs.	<b>Technical Session 5: Reproductive Health</b> <b>Venue:</b> Class Room 1 <b>Chair / Co-Chair:</b> Prof. Mamta Chauhan / Prof. C. Aruna <b>Session Coordinators:</b> Dr Shiva, Bhumika, Darshan	
	Assessing the Burden and Determinants of Menstrual Disorders among Young Adult Women in India: An epidemiological approach	Dr. Suresh Jungari
	Exploring the Nexus Between Sexual Violence and Eclampsia Vulnerability in the Indian Context	Dr. Illias K Sheikh
	Policy and institutional framework for menstrual hygiene management in India: national landscape and lessons from Rajasthan	Dr. Avantika Singh
	Digital Inclusion and Reproductive Health: Exploring the Influence of Digital Technology on Menstrual Practices among Indian Women: Evidence from National Family Health Survey (NFHS-5) 2019-2021	Sarika Rai
16:15-17:45 hrs.	<b>Technical Session 6: Education &amp; Health</b> <b>Venue:</b> Class Room 2 <b>Chair / Co-Chair:</b> Prof. Sampath Srinivasan / Prof. Manju Singh <b>Session Coordinators:</b> Dr. Swapnil, Lakshita, Vardhman	
	Declining Enrolment Pattern and its Reflection on Per student Public Expenditures on Elementary Education across Southern and Central States	Prof. Geetha Rani Prakasam
	SDG-3 and Health Care in India- A Sociological Study	Prof. Thamilarasam M
	Cultural Change, Gender Roles, and Health Vulnerabilities of Tribal Women in Tea Gardens	Dr. Archana Kujur
	Impact of community-based empowerment program on transforming gender role attitudes & self-efficacy among young girls	Dr. Neelanjana Pandey
	Health as Human Capital: A Core Pathway to Viksit Bharat @2047: - An Econometric Analysis	Dr. Santosh R
18:30-20:00 hrs.	<b>Cultural Programme</b> (Venue: R.A. Podar Auditorium)	
20:00-21:00 hrs.	<b>Dinner</b>	

<b>DAY-2</b> <b>12<sup>th</sup> February 2026 (Thursday)</b>	
10:00-11:00 hrs.	<p><b>Eleventh Prof. K.E. Vaidyanathan Memorial Lecture</b></p> <p><b>Welcome: Prof. R. Nagarajan</b>, President, IASSH</p> <p><b>Chair / Co-Chair: Prof. C.P. Prakasam</b>, Former President, IASSH</p> <p><b>Dr. V. Selvaraju</b>, General Secretary, IASSH</p> <p><b>Speaker: Dr. Pavitra Mohan</b>, Director &amp; Co-Founder, Basic Health-Care Services, Udaipur</p> <p><b>Topic: Health and Well-being of Labour-Migrants in India</b></p> <p><b>Vote of Thanks: Dr. Pragya Tiwari Gupta</b>, Joint Secretary, IASSH</p> <p><b>Venue:</b> R.A. Podar Auditorium</p>
11:00-11:15 hrs.	<b>Tea Break</b>
11:15-13:00 hrs.	<p><b>Plenary Session: Healthy Diet (Sponsored by UNICEF)</b></p> <p><b>Chairperson: Dr. Reshma Boolchandani</b>, Professor, Department of Home Science, University of Rajasthan, Jaipur</p> <p><b>Plenary Topics and Speakers</b></p> <ul style="list-style-type: none"> <li>• <b>Conceptualising healthy diet in the Indian socio-cultural context</b> <b>Dr. Pradeep Chaudhary</b>, Project Director Child Health, Govt of Rajasthan</li> <li>• <b>Life-course approach to nutrition: From infancy to old age</b> <b>Dr. Mukta Agarwal</b>, Subject Expert, RCOE, Udaipur</li> <li>• <b>Double burden of malnutrition and dietary transitions in India</b> <b>Dr. Akash Porwal</b>, Associate Director, Monitoring, Evaluation &amp; Learning, IPE Global, Delhi</li> <li>• <b>Role of food systems, agriculture, and markets in shaping diets</b> <b>Dr. Preetu</b>, Nutrition Specialist, UNICEF India Country Office, New Delhi</li> <li>• <b>Nutrition policies, programmes, and inter-sectoral convergence</b> <b>Prof. Jalandhar Pradhan</b>, Professor and Head, Humanities and Social Sciences, NIT Rourkela</li> <li>• <b>Community-based and state-level innovations for promoting healthy diets</b> <b>Dr. R.L. Suman</b>, Professor &amp; Head, Department of Paediatrics, MB Hospital, Udaipur</li> <li>• <b>Equity, gender, and social determinants of dietary practices</b> <b>Mukta Arora</b>, State Coordinator, UN Women</li> <li>• <b>Climate change and nutrition and its impact on healthy diet</b> <b>Mr. Nanak Kumar Santdasani</b>, WASH Officer, UNICEF, Rajasthan Office</li> </ul> <p><b>Venue:</b> R.A. Podar Auditorium</p>
13:00-14:00 hrs.	<b>Lunch Break</b>

13:00-14:30 hrs.	<b>Poster Presentation: Session-B</b>	
	<b>Evaluators:</b> Dr. Pragya Tiwari Gupta, Dr. Benson Thomas M, Dr. Manas Pradhan	
	<b>Session Coordinators:</b> Dr. Ummed Singh, Dr. GL Meena, Kaavya, Ajay	
	Passive Euthanasia and Autonomy at the End of Life - A Qualitative Enquiry	Bharathi K
	Lived in experience of fathers as caregivers of Autistic adolescents' girls in Kerala.	Reshma P
	Socioeconomic Disparities in Depression Diagnosis: Comparing Self-Reports and Standard Tests in Elderly Indians (50+	Neha Shri
	An Application of Machine Learning Technique in Predicting Hypertension in India	Vikas Kamble
	Portability and Plate: Make-shift Nutrition Behaviour among Migrant Families	Megha Paul
	Who Suffers More When Ageing Alone? Exploring Gendered Aspects of Health, and Quality of Life of Older Adults in India	Abhishek Anand
	Assessment of Multidimensional Vulnerability Index among Paudi Bhuiyan Tribe of Sundergarh district, Odisha	Bangshi Raj Mahata
	A study of the prevalence of depression among students studying in the science stream	Yash Dipeshbhai Joshi
	Health Inequities Among the Urban Homeless: A Cross-Sectional Analysis of Morbidity and Mortality Patterns in Mumbai, India	Komal Gajbhiye
	The Shifting Trend of Women's Age at First Birth in India: Evidence from NFHS-1 to NFHS-5- A 30-Year Perspective	Mohammad Hamza
	Understanding Undernourishment in South Asia: The Role of Political Stability	Soumyanayani Mahali
	Intersecting Determinant of Child Mortality: The Role of Health Financing and Government Effectiveness in Developing Countries	Tapan Swain
	Benchmarking the Indian Pharmaceutical Industry: A DEA-Tobit Analysis of Performance and Policy Implications	Veni Priya Tudu
	Climate change and mental health issues in South Asia: A systematic review	Abhishek Rajak
	Men's Involvement in Birth Preparedness and Postnatal Care: A Study Among Young Married Men in Tamil Nadu	Saravanan. R
	Climate Shocks and Child Health: The Impact of Drought on Undernutrition in Rural India	Utkarsh Jain
	Migration in later life and its association with cognitive impairment among middle-aged and older adults in India	Vikesh Kumar
	Occupational History and the Burden of Non-Communicable Diseases in Later Life: Evidence from Older Adults in India	Abin Dev P K

14:30-16:00 hrs.	<b>Technical Session 7: Mental Health</b> <b>Venue:</b> R.A. Podar Auditorium <b>Chair / Co-Chair:</b> Prof. S.S. Somra / Dr. Aditya Singh <b>Session Coordinators:</b> Dr. Suman, Irfan, Suhani	
	Psychological Problems of Infertile Women Attending Tertiary Care Hospital of Varanasi, Uttar Pradesh	Prof. Dr. T.B. Singh
	Disparities in Mental Health Services Utilisation across Caste and Gender: A Retrospective Study from Tertiary Care Facility of Eastern India	Dr. Hariom Pachori
	Evolution of Mental Health Policy Priorities in India Over the Decade: A Topic Modelling Approach	Dr. Tina Dutta
	Silent Suffering: Estimating Postpartum Depression Risk Using NFHS-5 Through a Social Science Lens	Mr. Amit Kumar Raja
14:30-16:00 hrs.	<b>Technical Session 8: Non-Communicable Diseases</b> <b>Venue:</b> Class Room 1 <b>Chair / Co-Chair:</b> Dr. Ramna Thakur / Dr. Nesar Ahmed <b>Session Coordinators:</b> Dr. Madhu, Gaurav, Sakshi	
	Age-Period-Cohort Model for estimating the Incident Rate of Diabetes Among elderly: LASI Data Analysis	Prof. C. P. Prakasam
	Estimating Prevalence and Burden of Hidden Diabetes in India	Dr. Md. Juel Rana
	Exploring Socio-Demographic, Lifestyle, and Clinical factors associated with Hypertension among 60+ years population in India: A Multivariable Predictive Study Using LASI Data	Dr Jang Bahadur Prasad
	Geographical differentials in Hypertension and Diabetes among Male in India - A Regional analysis at District Level	Dr. Rajan Kumar Gupt
	Mapping the Burden, Risks, and Intervention Strategies of Non-Communicable Diseases among Tribal Youth in South Asia: A Scoping Review	Praveen Suthar
14:30-16:00 hrs.	<b>Technical Session 9: Social Determinants of Health</b> <b>Venue:</b> Class Room 2 <b>Chair / Co-Chair:</b> Prof. Arun Acharya / Dr. Dipti Govil <b>Session Coordinators:</b> Dr. Manish Yadav, Abhishek Ola, Yogita	
	Social Support of Visually Challenged Women Residing in Rural Districts of Tamil Nadu, India	Prof. Sampath Kumar Srinivasan
	Life-Course Socioeconomic Status and Tobacco Use among Older Adults in India: Exploring Age pattern and Gender Variations	Dr. Y Selvamani
	Spatial Hotspots and Determinants of Cardiometabolic Risk among Adults in India: Evidence from the National Family Health Survey-5 (2019–21)	Mr. Manabindra Barman
	Spatial Heterogeneity in Malnutrition Indicators Among Under-Five Children in Gujarat: Evidences from NFHS-4 and NFHS-5	Ms. Swati Chourasia
	Unravelling the Contextual Determinants of Obesity in Young Adult Women in India	Ms. Monika Lakhotia
16:00-16:15 hrs.	<b>Tea Break</b>	

16:15-18:00 hrs.	<b>Technical Session 10: Digital Health &amp; Equity</b> <b>Venue:</b> R.A. Podar Auditorium <b>Chair / Co-Chair:</b> Prof. C.P. Prakasam / Prof. Jalandhar Pradhan <b>Session Coordinators:</b> Dr. Ummed Singh, Khushi, Aatmik	
	Bridging the Digital Divide: How eHealth Literacy Shapes Health behaviour among Indian Youths	Prof. Manushi Srivastava
	Digital Literacy in India: What we know?	Prof. D.P. Singh
	Exploring the factors that affect urban residents' access to and use of online healthcare services and referral systems during the COVID-19 pandemic: Implications for digital health and equity	Dr. Maria Sabastin Sagayam
	Designing Accessible Digital Health Tools for Visually Impaired Persons: A Speech-Based Approach	Muhammed Shafi M
	Improving Rural Health Access Through Telemedicine in South 24 Parganas	Satadal Mallik,
16:15-18:00 hrs.	<b>Technical Session 11: Urbanisation, Migration &amp; Health</b> <b>Venue:</b> Class Room 1 <b>Chair / Co-Chair:</b> Dr. Benson Thomas M / Dr. Juel Rana <b>Session Coordinators:</b> Dr Manish Sinsinwar, Lakshita, Vardman	
	A Statistical Analysis of Socio-demographic and Economic characteristics in Metropolitan and Non-metropolitan Class I cities of different regions of India	Prof. M. N. Megeri
	Interlinkages of History of Migration, Social Network, And Well-Being: A Study Through the Lens of Life-Course	Dr. Harchand Ram
	Adequacy of Public Health Infrastructure in Growing Cities : Case of Bangalore	Dr. Apurva K H
	Environmental Pollution and its Impact on Public Health in India: Systematic Literature Review	Dr. Ramesh Athe
	Occupational Health Challenges: Insights from Loco-Pilots of Eastern Railways, India	Dr. Ushnish Guha
16:15-18:00 hrs.	<b>Technical Session 12: Environmental Health</b> <b>Venue:</b> Class Room 2 <b>Chair / Co-Chair:</b> Prof. K.N.M. Raju / Prof. Angan Sengupta <b>Session Coordinators:</b> Dr. G L Meena, Bhumika, Darshan	
	Statistical Analysis of Ambient Air Pollution in selected Areas of Bengaluru City	Dr. Keerthi Astagimath
	"Sustainable Water Management using Rainfall Runoff Modelling: A Geospatial Approach of Udaipur, Rajasthan	Dr. Harish Samaria
	Climate Resilience and Community Wellness: Integrating Traditional and Modern Health Systems to Address Climate Change Vulnerabilities in Coastal Livelihoods	Dr. Anjali Sathyan
	The Rise of Modern Apprenticeships: Mapping the advanced healthcare apprenticeships in clinical settings across nations	Dr. Shruti Bhardwaj
	Addressing Air Pollution and Climate Change for Wellness in Viksit Bharat: A Social Science Approach to Health Policy and Practice	F. Lauren Jeshu
18:30-19.30 hrs.	<b>General Body Meeting (Members Only)</b> <b>Venue:</b> Class Room 1	
20:00-21:00 hrs.	<b>Dinner</b>	

<b>DAY-3</b> <b>13<sup>th</sup> February 2025 (Friday)</b>		
09.30-11.45 hrs.	<b>Technical Session 13:</b> <b>Competition for Youth Best Paper Award Presentations (A)</b> <b>Venue:</b> Class Room 1 <b>Evaluators:</b> Prof. C. P. Prakasam, Prof Audinarayana, Prof. Jalandhar Pradhan <b>Session Coordinators:</b> Dr. Madhu Sankhwal, Dr. Mandakini Meena, Shristi, Arjun	
	Voluntary Bonds: Investigating the Association between Fictive Kin and Well-Being among Older Adults in Late Life through a Multigroup Intersectional Perspective	Shreyantika Nandi
	Clinical Constructions of “Unattended Bodies”: Medical Gatekeeping and Healthcare Inequities Experienced by Intersex Individuals	Silpa G Nair
	The Paradox of Progress: Nuclear Family Transition and the Dual Impact on Young Women’s Autonomy and Maternal Health in India	Prateek Singh
	Are Children a Source of Old-Age Security? The Role of Parity in Elderly Food Insecurity in India	Ankita Roy
	Research Based Insights into Social Determinants of Ultra-Processed Food Intake and Related Health Risks From 2000–2025	Harsha Jain
	Diabetes among Older Adults in India: Prevalence, Risk Factors, and Rural-Urban Disparities	Ranjan Singha
	Role of Frontline Health Workers in Improving the Continuum of Care and Maternal and Child Health Outcomes in India: An Analysis of the PMMVY (Maternity Benefit Scheme)	Shabnam
	Mapping the Inequalities in Epidemiological Transition across States of India: Insights for Achieving Health Equity	Rahul Mondal
	Does Employment Protect Mental Health in Later Life? Gendered and State-Level Insights from LASI	Sefali Verma
09.30-11.45 hrs.	<b>Technical Session 14:</b> <b>Competition for Youth Best Paper Award Presentations (B)</b> <b>Venue:</b> Class Room 2 <b>Evaluators:</b> Prof. K.N.M. Raju, Prof. T. V Sekher, Dr. V. Selvaraju <b>Session Coordinators:</b> Dr. Chitra Chowdhary, Dr. Swati Batra, Kavya, Gauri	
	Do Supportive Environments Compensate for Low Intrinsic Capacity? Insights from the Longitudinal Ageing Study in India	Shivani Kumaria
	Morbidity-Mortality Paradox in India: An Analysis of Sex-Gap in Health of Older Adults through Disability Free Life Expectancy by Rural-Urban Location and Geographical Region	Sadanand Karun
	Disenchanted Enchantment: The Symbolic Construction of Tranquillity and Mental Wellbeing through Visuo-Spiritual Symbols in Kerala Temple	Riniga Ramakrishnan
	Explaining Age at Initiation of Childbearing: A Decomposition Analysis in South and Southeast Asia	Raza Mohammad
	Trends in Prevalence and factors influencing Angina Pectoris among elderly in India: SAGE Data analysis	Manish Lekhwani
	Residential Conditions, Depression, and Life Satisfaction among Urban Older Adults in India: Evidence from LASI Wave 1	Sumit Dwivedi
	A Study of Resilience and Life Satisfaction among Youth in Kachchh District	Siju Bhaveshvari
	Impact of Physical Activity on NCDs among Indian older Adults	Saurabh Singh
11:45-12:00 hrs.	<b>Tea Break</b>	

<p>12:00-13.15 hrs.</p>	<p><b>Valedictory Session</b></p> <p><b>Welcome Address: Dr. Bheem Singh Shekhawat</b>, University of Rajasthan</p> <p><b>Brief review of the conference: Dr. V. Selvaraju</b>, General Secretary, IASSH</p> <p><b>President's Remarks: Prof. R. Nagarajan</b>, President, IASSH</p> <p><b>Chairperson: Prof. Alpana Kateja</b>, Vice-Chancellor, University of Rajasthan</p> <p><b>Chief Guest's Address: Dr. Ravi Prakash Sharma</b>, Director, Public Health, Medical &amp; Health Service Department, Jaipur</p> <p><b>Address by Guest of Honor: Prof. Sanjay Lodha</b>, Director, IDS</p> <p style="text-align: center;"><b>Dr. P. R Sodani</b>, President, IIHMR, Jaipur</p> <p><b>Presentation of Best Youth Paper and Poster Awards by Chief Guest</b></p> <p><b>Vote of Thanks: Dr. Kshipra Jain</b>, University of Rajasthan</p>
<p>13.15-14.15 hrs.</p>	<p style="text-align: center;"><b>Lunch</b></p>
<p>13:15-15:00 hrs.</p>	<p><b>Distribution of Certificates and Travel Grants</b></p> <p><b>IASSH Secretariat</b></p>
	<p style="text-align: center;"><b>End of Day-3</b></p>

## Message from the Vice Chancellor, University of Rajasthan, Jaipur

**Prof. Alpana Kateja**  
**Vice-Chancellor**  
University of Rajasthan, Jaipur  
Accredited with 'A+' Grade by NAAC



January 28, 2026

### Message

It is with immense pleasure that I welcome you to the 21st Annual Conference of the Indian Association for Social Sciences and Health (IASSH), graciously hosted by the University of Rajasthan. As we gather under the inspiring theme "Towards Viksit Bharat: Wellness for All," we embark on a transformative journey that positions health and wellness at the very heart of India's developmental aspirations.

Health, as we understand it today, cannot be separated from the social determinants that shape our communities. The challenges of inequality, poverty, gender disparities, and educational barriers directly influence the wellness of our population. It is here that social sciences become indispensable, offering critical insights that help us design interventions that are not only medically sound but also culturally sensitive and socially equitable.

This conference represents a unique convergence of scholars, policymakers, practitioners, and civil society leaders united in our shared commitment to evidence-based solutions. The University of Rajasthan takes great pride in facilitating this important dialogue. Our institution has long been committed to fostering interdisciplinary research and promoting academic excellence that serves societal needs. By hosting this conference, we reaffirm our dedication to creating platforms where knowledge translates into meaningful action.

May this conference inspire actionable solutions that transform communities and advance our nation's journey toward comprehensive development.

  
(Prof. Alpana Kateja)

## Message from the President, IASSH



The Indian Association for Social Sciences and Health (IASSH) is a dynamic professional body with over 1,300 life members, bringing together social scientists engaged in social determinants of health and development. Over the years, IASSH has played a crucial role in fostering dialogue among researchers, policymakers, and practitioners through its annual conferences, workshops and publications. These initiatives have significantly contributed to advancing knowledge and strengthening the research-policy-practice nexus.

As social scientists, it is imperative for us to engage in discussions and debates that explore innovative mechanisms to bridge research, practice, and policy. This conference serves as a vital platform for researchers to exchange ideas and insights, thereby deepening our understanding of the intricate relationships between health, gender, well-being, and socio-economic development. One of IASSH's key objectives is to encourage youth participation in knowledge generation and dissemination in the field of social sciences and health research. We are delighted to witness a strong representation of young researchers and PhD scholars at this conference, reflecting the growing engagement of the next generation in shaping the future of social science research. For the last four years, we have introduced the best publication awards for young researchers. We express our sincere gratitude to University of Rajasthan for hosting this year's conference and for their generous support in making this event a success. I extend my warmest greetings to all IASSH members and conference participants and wish you fruitful discussions and meaningful collaborations.

**Prof. R. Nagarajan**

President, Indian Association for Social Sciences and Health (IASSH)

Professor & Head, Department of Population and Development

International Institute for Population Sciences (IIPS), Mumbai, India – 400088

Mail: [nagarajan@iipsindia.ac.in](mailto:nagarajan@iipsindia.ac.in)

## Message from the Convenor



I am happy to welcome you all to the 21st Annual Conference of the Indian Association for Social Sciences and Health (IASSH), hosted by the University of Rajasthan in Jaipur from February 11–13, 2026. The theme of the conference “Towards Viksit Bharat: Wellness for All” invites us to reflect on how a truly developed India must be grounded in the holistic well-being of its people along with its economic growth. The University of Rajasthan is the oldest institution of higher learning in the state of Rajasthan. Over the years, it has maintained an impressive record in quality evaluation, being accredited by the National Assessment and Accreditation Council (NAAC) with an A+ grade and first state university to achieve three ISO certifications. Health is both a societal aspiration and a shared responsibility. Advancing wellness for all requires us to look beyond clinical care and engage with the social, cultural, and economic contexts that shape health outcomes. By bringing together policymakers, researchers, practitioners, and civil society, this conference provides a platform to integrate insights from the social sciences into health policy and practice. It will engage with pressing questions around the social determinants of health: poverty and inequality, gender and education, migration and urbanization, and the ways these forces influence access, quality, and outcomes. The conference also explores cross-cutting domains such as mental health and well-being, community participation, digital health innovations, and the health implications of climate and environmental change. The program brings together these perspectives and experiences through technical sessions and thought-provoking engagements, including plenary session and memorial lectures.

This conference is the result of collective dedication. I extend my heartfelt thanks to our collaborators and funding partners. I am equally grateful to our speakers and participants for contributing their time, expertise, and commitment to equity in health.

As hosts, we also invite you to experience Jaipur through its majestic forts and vibrant markets.

Warm regards,

**Dr. Kshipra Jain**

Convenor, IASSH 2026

Assistant Professor, Department of Economics

University of Rajasthan, Jaipur

## Message from the Organising Secretary



Health and wellness, by shaping their state of mind affect social and economic lives of individuals. These are vital inputs in the process of creating human capital, a significant determinant of development. Good health, therefore, for the associated externalities it has, is essential not only for personal wellbeing but also for the wellbeing of the society and the progress of the nation as a whole. A ‘Viksit Bharat’ would be an illusion without the attainment of good health and wellness for all. Social sciences and health have deep inter-connections; some are more obvious and are much studied and researched while others require a micro-level analysis. Understanding these linkages is central to the realization of the dream of ‘Viksit Bharat’. For a developing nation like India with a considerable section of the society being marginalized and vulnerable in different ways, ‘health for all’ is a formidable challenge and is certainly unattainable without the involvement of the state. However, due to the socio-economic dynamics and the existence of evils like corruption there is a perpetual need for the evaluation of the existing health mechanisms and interventions. Continuous evaluation enables identification of gaps and helps in reshaping the existing interventions and designing new interventions for obtaining better results. It is in this sense that research and pooling of the findings of research to create knowledge becomes important. The 21st Annual Conference of the Indian Association for Social Sciences and Health (IASSH), hosted by the University of Rajasthan in Jaipur from February 11–13, 2026 on the theme “Towards Viksit Bharat: Wellness for All” aims to provide a platform where researchers, academicians and policymakers will come together to discuss their views and ideas, present and debate the research findings of numerous research studies, evaluate the effectiveness of the ongoing interventions, identify gaps and ponder over the suggestions that are likely to emerge from detailed discussions. With this intention and purpose in mind, I welcome you all to the IASSH, 2026 conference.

Regards,

**Dr. Bheem Singh Shekhawat**  
Organizing Secretary IASSH 2026  
Assistant Professor, Department of Economics  
University of Rajasthan, Jaipur

**Towards Viksit Bharat: Wellness for All*****Integrating Social Science in Health Policy and Practice*****Background**

India's vision of Viksit Bharat (Developed India) by 2047 emphasises inclusive growth and human well-being as the foundation of national progress. It recognizes health and wellness as the cornerstone of sustainable development. The pursuit of wellness goes beyond curative healthcare; it encompasses preventive, promotive, and holistic well-being for all sections of society. Achieving this ambitious goal requires a multidimensional approach that integrates medical sciences with the insights of social sciences. Health outcomes and well-being are not only shaped by medical care but also deeply influenced by social, economic, cultural, and environmental contexts. Issues such as poverty, gender inequality, education, migration, environmental changes, and social determinants of health significantly impact access to care and health equity. Especially, inequalities in education, income and gender coupled with urbanization, climate change, and migration significantly affect health outcomes. While India has made significant progress in public health infrastructure, programmes and policies, there remains a pressing need to embed social science perspectives into health policy and practice to ensure inclusivity, accessibility, and sustainability. Therefore, to achieve the goal of Wellness for All, it is vital to integrate social science perspectives into health policy and practice. Medical interventions alone cannot address the complex health challenges of today. Social science research provides a nuanced understanding of community behaviours, health-seeking practices, and the social determinants of health. Integrating these perspectives into health policies ensures that interventions are culturally relevant, context-specific, and socially just. A comprehensive approach that synergises the advances in medical sciences with social science insights can enhance health system responsiveness, foster community participation, and promote wellness for all and also ensures inclusivity, equity and sustainability. This conference intends to generate a dialogue that connects evidence-based research with policy priorities, thereby contributing to India's broader development goals. It seeks to provide an interdisciplinary platform for scholars, policymakers, practitioners, and civil society to deliberate on how social sciences can strengthen health systems and ensure equity in the journey towards a Viksit Bharat.

## Conference Objectives

- To examine the role of social sciences in shaping inclusive health policies for developed India.
  - To deliberate on the integration of social determinants of health into health programmes and interventions.
  - To identify pathways for advancing *Wellness for All* through cross-sectoral collaboration.
  - To share best practices and evidence-based research that highlight the interface between social sciences and health.
  - To generate actionable recommendations for policy and practice in the context of *Viksit Bharat with health equity and wellness*.
- 

## Sub-Themes

**S1:** *Social Determinants of Health*

**S2:** *Health Policy and Governance*

**S3:** *Community Participation and Empowerment*

**S4:** *Traditional Knowledge and Modern Health Systems*

**S5:** *Behavioural and Cultural Dimensions of Health*

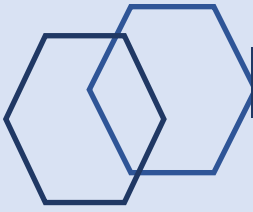
**S6:** *Digital Health and Equity*

**S7:** *Urbanization, Migration, and Health*

**S8:** *Mental Health and Wellbeing.*

**S9:** *Climate Change, Environment, and Health*

**S10:** *Pathways to Viksit Bharat*



**IASSH**

**President**

Prof. R. Nagarajan

International Institute for Population Sciences, Mumbai

**General Secretary, IASSH**

Dr. V. Selvaraju

**Vice-President, IASSH**

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**IASSH Secretariat**

International Institute for Population Sciences, Mumbai-400088

Web: <http://iassh.org> Email: [iassh2004@gmail.com](mailto:iassh2004@gmail.com)

**Convenors**

**Kshipra Jain**  
Assistant Professor of Economics  
University of Rajasthan, Jaipur

**Dr. V. Selvaraju**  
General Secretary, IASSH

**Organizing Secretaries**

**Dr. Bheem Singh Shekhawat**  
Assistant Professor of Economics  
University of Rajasthan, Jaipur

**Dr. Pragya Tiwari Gupta**  
Joint Secretary, IASSH

**University of Rajasthan, Jaipur**

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## IASSSH

Indian Association for Social Sciences and Health (IASSSH) is a vibrant professional association with more than 1300 life members. It has played an important role in bringing together social scientists working in the field of health and development. Through annual conferences, workshops and publications, IASSH reaches out to large number of scholars, researchers, NGOs and health practitioners in India and abroad.

One of the goals of IASSH is to encourage youth participation in knowledge transfer in social sciences and health research. IASSH is an independent professional association to meet the felt need of having an exclusive forum for social scientists from various disciplines who are working on health and related issues to meet periodically and share the research findings. By highlighting the implications of the research findings among different stakeholders, it is hoped to bring about concerted action to address the emerging issues in health and development sectors. Association tries to enable scholars in health social sciences to enlarge their career opportunities and fulfil their professional commitment.

Web: [www.iasssh.org](http://www.iasssh.org)

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## University of Rajasthan

The University of Rajasthan, established on 8th January 1947 as Rajputana University, is the oldest institution of higher learning in the state of Rajasthan. Situated in Jaipur, the Central Campus spreads across 338.14 acres in an urban setting, while the satellite campus, comprising Constituent Colleges, covers an additional 138.21 acres. Initially, the University had jurisdiction over the entire state of Rajasthan, but its territorial reach is now focused on Jaipur and Dausa districts, with a strong network of more than 630 affiliated colleges. The University boasts a rich academic structure with 9 Faculties, 35 Departments, 7 Constituent Colleges, and 19 Research Centres, offering a wide spectrum of disciplines.

Over the years, the University has maintained an impressive record in quality evaluation, being accredited by the National Assessment and Accreditation Council (NAAC) with an A+ grade and first state university to achieve three ISO certifications. This institution has continuously expanded its curricular range in keeping with the emergent academic needs of the region. Along with this, the university also provides Doctoral and Post-doctoral degree courses in various subjects of Science, Arts and Humanities. The University has produced many outstanding scholars spread across the globe. The University has many prominent alumni and they have occupied key positions in India and abroad. The university campus exhibits a diverse cultural background to share, interact and learn from each other.

Web: <https://www.uniraj.ac.in/>



## IASSH Office Bearers (2025-2027)

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**Prof. P. M. Sandhya Rani** (Vice President)

**Dr. V. Selvaraju** (General Secretary)

**Dr. Pragya Tiwari Gupta** (Joint Secretary)

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9<sup>th</sup> Prof. John Caldwell Memorial Lecture

by

Dr. Ravi Verma

on

Fertility Transition to Gender Justice: Revisiting Caldwell’s Theory of Social Change

11<sup>th</sup> February 2026 at 12.00 noon

RA Podar Auditorium, Rajasthan University, Jaipur



**Dr. Ravi Verma** is a senior social scientist and public health expert, currently serving as Regional Director of the International Center for Research on Women (ICRW) Asia, New Delhi. He has over three decades of experience in interdisciplinary research spanning gender studies, population health, masculinities, violence against women, sexual and reproductive health, and adolescent development. At ICRW Asia, Dr. Verma has provided intellectual and strategic leadership to large-scale empirical studies and policy-oriented research across South Asia, with a strong emphasis on gender-transformative approaches and evidence-based advocacy. His work has made significant contributions to understanding the social and structural determinants of gender inequality and health outcomes, particularly through innovative interventions engaging men and boys. Dr. Verma has an extensive publication record in peer-reviewed journals and policy reports and has advised national governments, multilateral agencies, and international development organizations. His scholarship has played an important role in shaping gender-responsive policies and programs in

India and the region. Prior to joining ICRW in 2007, Dr. Verma was a program associate with Population Council/Horizons, where he collaborated with partners to design, implement and evaluate innovative operations research projects on gender and HIV. For more than 20 years, he was a professor in the department of population policies and programs at the International Institute for Population Sciences in Mumbai, India. The Indian Association for the Social Sciences and Health (IASSH) is honoured to host Dr. Ravi Verma as the **Caldwell Memorial Lecturer** at its **21st Annual Conference**.

**Professor John Caldwell’s** seminal work includes documentation of the role of mother’s education in fertility limitation and child mortality decline, and the role of circumcision in inhibiting the spread of HIV/AIDS in Africa. He is known for his “wealth flows” theory, which relates demographic transition theory to changes in intergenerational transfers within the family. A 2009 survey of nearly 1000 demographers worldwide named John Caldwell the most influential researcher of all time in the field of demography. In 1985, the Population Association of America (PAA) presented him with its highest prize, the Irene B. Taeuber Award for excellence in demographic research. In 1994, he began an elected four-year term as President of the International Union for the Scientific Study of Population (IUSSP), and, in 2004, he was presented with the prestigious United Nations Population Award. These are the three highest international honours in the field of demography and no other person has won all three of these awards. Dr. Caldwell’s anthropological demographic work on south India, particularly on marriage and fertility, received lot of research attention. He encouraged and mentored many scholars from India, and good number of them received their Ph.D. from Department of Demography at Australian National University (ANU) under his able guidance. He passed away on 12th March 2016 in Canberra at the age of 87. Upon request from his students, colleagues and friends, Indian Association for Social Sciences and Health (IASSH) instituted an annual memorial lecture in honour of Dr. Caldwell in 2016.



## 11<sup>th</sup> Dr. K.E. Vaidyanathan Memorial Lecture

by  
**Dr. Pavitra Mohan**

on  
**Health and Well-being of Labour-Migrants in India**

12<sup>th</sup> February 2026 at 10.00 a.m.  
RA Podar Auditorium, Rajasthan University, Jaipur



**Dr. Pavitra Mohan** is a distinguished community health physician, paediatrician, and public health practitioner with over two decades of experience in strengthening health systems and advancing equitable healthcare in India. He is the Co-Founder and Director of Basic HealthCare Services (BHS), an organization committed to delivering accessible, high-quality primary healthcare in underserved communities. Dr. Mohan also serves as Director of Health Services at Aajeevika Bureau, where he leads initiatives addressing the health and social protection needs of migrant and informal workers. Previously, Dr. Mohan worked as a Senior Health Specialist at UNICEF's India Country Office, contributing to national policy dialogue and program design in maternal, newborn, and child health. His academic engagement includes teaching at RNT Medical College, Udaipur, where he helped train future medical professionals with a strong grounding in

community-oriented care. He has also worked with Action Research and Training for Health (ARTH), a leading public health NGO known for innovative models of rural healthcare delivery. Dr. Mohan is a Fellow of the National Neonatology Forum of India and an Ashoka Fellow, recognizing his leadership and social innovation in public health. He holds a Master's degree in Public Health from the University of North Carolina, USA. Dr. Mohan's work bridges clinical practice, public health systems, and social determinants of health, making him a fitting speaker for the K.E. Vaidyanathan Lecture at the 21st Annual Conference of the Indian Association for the Social Sciences and Health (IASSH).

**Dr. K.E. Vaidyanathan**, a distinguished demographer and former President of IASSH served the United Nations in various capacities. He was a faculty at the International Institute for Population Sciences, Mumbai, during 1968–1971. In 1971, he joined the Institute of Rural Health and Family Planning, Gandhigram, as Head of the Department of Population Studies and also served as its Acting Director for some time. Later he joined the UN system as a Demographer in Cairo Demographic Centre, which is the regional centre for Africa and the Middle-East. In 1976 he moved to Syria as a UN Adviser to help establish the Centre for Population Studies and Research and to advice the Planning Commission of Syria. This was followed by a posting in Kampala, Uganda to serve as a faculty in the Institute of Statistics and Applied Economics in Makerere University, Kampala. In 1979 he became the UNESCO Regional Adviser for Population Education in the Arab region, and in 1982 he moved to ILO as the Regional Expert for Household Surveys under the National Household Survey Capability Program (NHSCP) in the Arab region. He later served during 1992-96 as the Chief Technical Adviser for the Sudan Population Census of 1993, which was acclaimed as the most successful census ever held in that vast and complex country. In 2001 he helped plan and implement the Living Standards Measurement Survey (LSMS) in Bosnia- Herzegovina. Dr. Vaidyanathan passed away in 2014 at Bangalore.





## Plenary Session on Healthy Diet Supported by UNICEF & IPE Global

A healthy diet is essential for maintaining optimal physical, mental, and social well-being. It provides adequate energy, macro- and micronutrients required for growth, development, and daily functioning. Healthy dietary practices contribute to: prevention of undernutrition, anaemia, vitamin and mineral deficiencies; reduction in the risk of obesity, diabetes, cardiovascular diseases, hypertension, and certain cancers; improved immunity, cognitive functioning, learning outcomes, and work productivity; and promotion of healthy ageing and reduction in disability and healthcare costs. In the Indian context, unhealthy diets characterised by excessive intake of salt, sugar, and fats, along with inadequate consumption of fruits, vegetables, pulses, and animal-source foods, are emerging as major public health concerns. Addressing dietary quality is therefore central to improving population health outcomes. Dietary patterns are undergoing rapid transformation in India due to urbanisation, changing lifestyles, economic transitions, and food system changes. While undernutrition, micronutrient deficiencies, and food insecurity continue to affect large sections of the Indian population, the country is simultaneously witnessing a sharp rise in overweight, obesity, non-communicable diseases (NCDs), and diet-related metabolic disorders. This “double burden of malnutrition” poses serious challenges to population health, human development, and sustainable development goals. Healthy diet is a foundational determinant of health across the life course, influencing physical growth, cognitive development, productivity, disease prevention, and healthy ageing. Recognising this, the Indian Association for Social Sciences and Health (IASSH) proposes to organise a dedicated **Plenary Session on “Healthy Diet”** during its 20th Annual Conference. The session will bring together leading experts, researchers, policymakers, and development practitioners to discuss evidence, policies, and programme experiences related to healthy diets in the Indian context, with a special focus on vulnerable population groups.

**Chairperson: Dr. Reshma Boolchandani**, Professor, Department of Home Science, University of Rajasthan

### Plenary Topics and Speakers

- Conceptualising healthy diet in the Indian socio-cultural context  
**Dr. Pradeep Chaudhary**, Project Director Child Health, Govt of Rajasthan
- Life-course approach to nutrition: From infancy to old age  
**Dr. Kanika / Dr. Mukta Agarwal**, Retired Professor, Home Science University of Rajasthan
- Double burden of malnutrition and dietary transitions in India  
**Dr. Akash Porwal**, Associate Director, Monitoring, Evaluation & Learning, IPE Global, Jaipur
- Role of food systems, agriculture, and markets in shaping diets  
**Dr. Preetu**, Nutrition Specialist, UNICEF India Country Office, New Delhi
- Nutrition policies, programmes, and inter-sectoral convergence  
**Prof. Jalandhar Pradhan**, Prof. and Head, Humanities and Social Sciences, NIT Rourkela, Odisha
- Community-based and state-level innovations for promoting healthy diets  
**Dr. R.L. Suman**, Professor & Head, Department of Paediatrics, MB Hospital, New Delhi.
- Equity, gender, and social determinants of dietary practices  
**Smt. Manjri Pant / Mukta Arora**, SBC Specialist/State Coordinator, UN Women
- Climate change and nutrition and its impact on healthy diet  
**Mr. Nanak Kumar Santdasani**, WASH Officer, UNICEF Rajasthan Office

**Venue: RA Podar Auditorium**

## Best Publication Awards for Young Researchers - 2025

To encourage academic scholarship and quality scientific publications in social sciences and health studies, IASSH invited applications from young researchers to submit their recent journal publications for the consideration of Best Publication Award. Based on our announcement in September 2025 for the best publication award, we received 42 applications. A screening committee first scrutinized the applications for the eligibility criteria like age (below 35 years), year of publication (2024), single / first author of the paper, etc. and shortlisted 23 applications/papers for the assessment of the Selection Committee. The Selection Committee consisting of five experts reviewed the shortlisted papers and recommended two young researchers for the award, though it was a difficult choice to select two from many high-quality publications in reputed journals. The winners will receive a Certificate and cash prize of Rs. 25,000 each at the next annual conference of IASSH.

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### The winners are:

- **Shubham Ranjan**, Indian Institute of Technology Mandi, for the paper “**The effect of socioeconomic status, depression, and diabetes symptoms severity on diabetes patient’s life satisfaction in India**”, *Scientific Reports* (2024), 14:12210 <https://doi.org/10.1038/s41598-024-62814-5>
- **Sumit Kumar Das**, All India Institute of Medical Sciences, for the paper “**Longitudinal analysis of growth and nutritional disparities across socio demographics from early childhood to adolescence: Findings from the Indian cohort of the Young Lives Survey**”, *Tropical Medicine and International Health* (2024), 1–13. <https://doi.org/10.1111/tmi.14050>



## Prof. K. Mahadevan Award for Best Publications - 2025

To encourage field-based research, academic scholarship, and scientific publications in social sciences and health studies, IASSH invited young researchers to submit their published journal articles for the consideration of award. Following the June 2025 announcement for the Prof. K. Mahadevan Award for Best Publications, we received 23 applications. A screening committee first scrutinized the applications for eligibility criteria such as age (below 35 years), year of publication (2024), focus on field-based research, and single / first author of the paper. 14 papers were shortlisted for final evaluation by a Selection Committee. The Selection Committee, comprising of five experts reviewed the shortlisted papers and recommended one papers for the award. The winner will receive a certificate and a cash prize of Rs. 25,000 at the next annual conference of IASSH.

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### The winner is:

- **Sandeep Kaur**, Public Health Foundation of India, for her paper “**Effectiveness of a school-based behavioural change intervention in reducing chronic disease risk factors in Chandigarh, India: A cluster-randomised controlled trial**”. *The Lancet Regional Health – Southeast Asia* (2024), 21:100353, Published Online 24 January 2024. <https://doi.org/10.1016/j.lansea.2024.100353>

## Papers for ORAL Presentation

### Healthcare Interventions for Ageing Populations: A Systematic Review

**Asharaf Abdul Salam & Mini Thekkechangampatt**

Independent Consultant, AS Consultants, Thiruvananthapuram

Email: [asharaf\\_a@hotmail.com](mailto:asharaf_a@hotmail.com)

The ageing population, the scenario of the decade, has critical implications on health and healthcare, not only for the medical fraternities but also for the social and behavioural scientists, with geographies, especially for the developing world. In this context, this systematic review of the health of the ageing population has been carried out with special interest in the Indian situation. The health concerns, health problems, health status, and health-seeking behaviour are the core aspects aimed to be reviewed. For the purpose, literature available from 1990 to date on Research Gate, Web of Science, Science Direct, The Lancet, and PubMed was accessed during November-December 2025 online. There is a dearth of literature on these topics, revealing major concerns (health anxiety) and problems (diseases under treatment); however, there were not many studies on health status, and health-seeking behaviour was not many. It reveals that concerns are many, but that they go beyond the reality of diseases. Those are classified by disease and symptoms, affected systems, and severity, in addition to clinical manifestations, diagnoses, and symptomatology. Demographic and socioeconomic factors play their roles in perceived health status and health-seeking behaviours. Thus, with the increasing trend of population ageing, efforts and policies are essential to integrate healthcare of the ageing population in line with a multidisciplinary geriatric care team at various levels of health, especially at the implementation level.

### Gender Disparity in Awareness of Social Security Schemes among the Indian Elders

**Prasanna Kumar Mudi & Venkata Raja Malla**

International Institute for Population Sciences

Email: [prasannamudi@gmail.com](mailto:prasannamudi@gmail.com)

India's rapidly aging population underscores the growing importance of comprehensive social security measures for older adults. The social security system for the elderly includes various central and state government initiatives such as the Indira Gandhi National Old Age Pension Scheme (IGNOAPS), Atal Pension Yojana (APY), and the National Social Assistance Programme (NSAP). This study examines the levels of awareness and utilization of these schemes among older adults in India using data from the Longitudinal Ageing Study in India (LASI-Wave 1), conducted between 2017 and 2018. LASI is a nationally representative survey encompassing 72,250 individuals aged 45 years and above, employing a multistage stratified cluster-sampling design. The survey collects data on health, healthcare use, insurance, work, retirement, and overall well-being. Descriptive statistics, binary logistic regression, and Fairlie decomposition were applied using appropriate sampling weights using STATA software. Findings reveal that the majority of India's elderly belong to the younger-old age groups, with 31.2% aged 60-64 and 29.3% aged 65-69, while only 10.7% are aged 80 years or above. Awareness and utilization of IGNOAPS remain limited: 55.4% of elderly women are aware of the scheme, but only 28.7% receive benefits, compared to 62.5% awareness and 30.5% utilization among men. Health perception is moderate, with nearly half of the elderly rating their health as average, and 26.6% reporting poor health status. Functional limitations also play a role those with Activities of Daily Living (ADL) difficulties exhibit lower awareness (54.8%) compared to those without (59.5%), whereas Instrumental ADL (IADL) limitations slightly enhance awareness (59.9%). The study highlights pronounced disparities across gender, caste, and tribal affiliations, with Scheduled Tribes and Castes facing greater barriers due to geographic isolation and limited education. Strengthening outreach, improving access, and ensuring equitable inclusion in social protection programs are vital for supporting India's aging and increasingly feminized elderly population.



## Exploring Reasons for Non-Utilization of Healthcare Services among the Elderly with Non-Communicable Diseases in India: Evidence from LASI Wave 1

**Jitender Prasad**

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**Background:** Noncommunicable diseases (NCDs) are the leading cause of morbidity and mortality among India's elderly, accounting for over two-thirds of the national disease burden. Despite increased access to healthcare, disparities in utilisation and treatment-seeking behaviour remain. This study examines healthcare utilisation patterns and reasons for non-utilization of healthcare among elderly individuals suffering from NCDs. **Methods:** Data were drawn from Wave 1 of the Longitudinal Ageing Study in India (2017–18). Descriptive statistics and Multinomial logistic regression were used for the analysis. **Results:** The most cited reasons for not seeking care were illness not serious (41.3%), followed by having medicine at home (32.3%), and financial and work constraints (13.7). Regression results revealed that the elderly with cancer (RRR 47.54), stroke (RRR 8.28), arthritis (RRR 3.46), and lung disease (RRR 2.37) were more likely to report low treatment effectiveness, while psychological issues were more frequently reported reasons due to financial/work constraints (RRR 3.03), and family/other constraints (RRR 4.29) significantly. **Conclusion:** The findings highlight the reliance on private facilities and the non-utilization of disease-specific healthcare among the elderly. Policies should prioritize financial protection, decentralized chronic care, and targeted interventions to address socioeconomic inequalities, thereby advancing universal health coverage for India's ageing population.

## Does 'Where They Live' Matter? Exploring the Link between Living Arrangements and Quality of Life Among the Elderly in India

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**Rationale of the study:** The quality of life (QoL) of the elderly is a growing concern in social, medical, and policy research. Living arrangements, defined by household structure and type of residence, are found to be strongly associated with the well-being of the elderly in different contexts. **Objective:** We investigate the association between the living arrangements and QoL of the elderly (60 years and above) in India. Here, we hypothesise that the satisfaction with living arrangements with spouse and children is positively associated with better QoL compared to living alone. **Methods:** This study utilised data from Wave I (2017–2018) of the Longitudinal Ageing Study in India (LASI). The analysis focused on elderly individuals aged 60 years and above, totalling 31,902 respondents—of whom 15,340 (48.08%) were men and 16,562 (51.92%) were women. To measure Quality of Life (QoL), a composite index was constructed using Principal Component Analysis (PCA), based on 27 questions across five domains: physical health, psychological well-being, social interaction, environmental factors, and an additional domain. **Results:** The overall mean Quality of Life (QoL) score among the elderly in India is 66.81 on a 100-point scale. The study highlighted that key elements which influence older individuals' QoL include social support, marital status, education, economic security, and health issues. On the other hand, QoL is adversely linked to advanced age, feminine gender, poor health, depression, and multimorbidity. **Conclusion:** Living arrangements are not only crucial in the physical settings of the elderly in India but also associated with psychological and social environments that are linked with the QoL. A balanced strategy is essential for policies and maintaining a familial care tradition for the improvement of health care, happiness, and better QoL of India's elderly population.



## Cumulative Social Disadvantage and Mental Health among Older Adults in India: Evidence from LASI Wave-I

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**Background:** Population ageing in India occurs within deep social and economic inequalities. Older adults experience multiple disadvantages across socioeconomic, structural, environmental, and social domains, yet limited research has examined how these cumulative disadvantages affect mental wellbeing. This study investigates how different dimensions of social disadvantage influence depression among older Indians. **Objectives:** To construct a multi-domain Cumulative Social Disadvantage Index (CSDI) and assess its association with presence of depression. Additionally, to quantify the relative contribution of each disadvantage domain using Shapley value decomposition. **Methods:** We analysed LASI Wave-1 (2017–18) data among adults aged  $\geq 45$  years ( $n \approx 65,562$ ). Twelve disadvantage indicators across four domains—structural (caste, residence), socioeconomic (education, wealth, work history), household/environmental (toilet facility, water source, housing quality, cooking fuel), and social (living alone, social participation, absence of close friends)—were binarized into domain scores. The CSDI was computed from domain z-scores. Depressive symptoms were measured using CES-D 10 scale. Survey-weighted logistic regressions were estimated with demographic, health, and functional status covariates. Shapley value decomposition partitioned explained variance into domain-specific contributions. **Results:** Higher cumulative disadvantage strongly correlated with poorer mental health. A one standard deviation increase in CSDI was linked to higher CES-D scores ( $\beta \approx 1.1$ ;  $p < 0.001$ ) and 35–45% higher odds of probable depression ( $OR \approx 1.40$ ;  $p < 0.001$ ). Shapley decomposition showed social disadvantage contributed the largest share ( $\approx 34\%$ ) to explained variance in depressive symptoms, followed by household/environmental ( $\approx 28\%$ ), socioeconomic ( $\approx 22\%$ ), and structural disadvantage ( $\approx 16\%$ ). These findings indicate psychosocial connectedness and living conditions explain more mental health disparities than socioeconomic markers. **Conclusion:** Cumulative social disadvantage significantly influences depressive symptoms in older Indians. Policies for "wellness for all" must address social isolation, living environments, and support systems beyond income-based interventions. This study's quantification of disadvantage domains provides insights for integrated social and health policy design.


## Prevalence and Predictors of Multi-morbidity among Elderly in a Rural Setting of Andhra Pradesh

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The prevalence of multi-morbidity (i.e., the presence of two or more non-communicable diseases) has become a growing concern in India and the concerned rates vary across the regions of the world. A number of factors, viz., socio-demographic, economic, and lifestyle behaviours, are likely to influence the increasing burden of multi-morbidity. Against this backdrop, the researcher(s) aimed to evaluate the prevalence and predictors of multi-morbidity among elderly in a rural setting of Andhra Pradesh. A sample of 380 elderly persons (60+ years) has been selected from 20 revenue villages/hamlets of Kurnool district, adopting systematic random sampling and the required data has been collected with a structured interview schedule. The data has been analysed with frequency tables (background characteristics of elderly persons and the details of chronic morbidity conditions), followed by cross-tabulations with Chi-square test (to examine the factors associated with multi-morbidity) and multiple logistic regression analysis is employed (to identify the principal factors that determine the multi-morbidity). The findings showed that the prevalence of multi-morbidity is 70 percent, and diabetes and hypertension are reported as the major ones in the elderly sample. Cross-tabular analysis highlighted that the prevalence of multi-morbidity



has been varied, mostly on the expected lines, across the socio-demographic, economic and lifestyle factors of the sample elderly under study. Binary logistic regression results reiterated that the extent of assistance needed for physical functioning in disability conditions and substance use ( $p < 0.01$  for both), besides advancing age ( $p < 0.05$ ) are the prime risk factors of multi-morbidity. In contrast, education beyond upper primary school ( $p < 0.001$ ), belonging to families of higher income ( $p < 0.002$ ), higher extent of participation in physical activities ( $p < 0.01$ ), owning of property by self ( $p < 0.05$ ), and female gender ( $p < 0.05$ ) have emerged as prime factors in lessening the prevalence of multi-morbidity. Appropriate policy implications have been suggested.

## Disparities in Cervical Cancer Screening Among Indian Women Aged 45 Years and Above

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**Background:** Cervical cancer is preventable, yet India accounts for a disproportionate share of global deaths. National evidence on screening coverage and the factors associated with screening uptake among older women, who face the highest risk, is limited. **Methods:** Cross-sectional analysis of 35,481 women aged  $\geq 45$  years from the Longitudinal Ageing Study in India (LASI) Wave-1 (2017–18). Recent Pap smear testing (past 2 years) was examined using survey-weighted prevalence and Firth logistic regression to identify independent determinants across demographic, socioeconomic, healthcare, health status, behavioural, and geographic domains. **Results:** Only 1.31% (95% CI: 1.19–1.43) of women reported Pap smear testing in the past two years. Prevalence declined with age (1.72% in 45–54 years to 0.51% in  $\geq 75$  years) and was lower among widows (0.72% vs. 1.60% married), rural residents (0.86% vs. 2.05% urban), and those with no/low education (0.98% vs. 3.53% graduates). Three-quarters (75.7%) had recent healthcare contact, yet screening remained rare even among them (1.50%). In fully adjusted models, health system contact (AOR 1.87, 95% CI 1.42–2.48),  $\geq 2$  chronic diseases (2.22, 1.74–2.83), urban residence (1.81, 1.47–2.24), and higher education (graduate 1.96, 1.33–2.88) were strongest predictors. Screening was highest in southern states (1.99%) and lowest in high-burden northern/central states ( $< 1\%$ ), revealing a stark inverse care pattern. **Conclusion:** Cervical screening coverage in older Indian women is extremely low, nearly 50-fold below the WHO 70% elimination target, despite widespread healthcare contact. Failure lies not in access but in systematic non delivery of preventive services. Urgent transition from opportunistic to organized, equity-focused screening is essential to avert preventable deaths from cervical cancer.

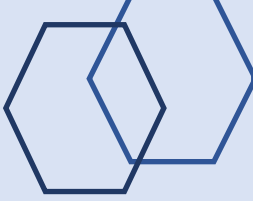
## Gender Disparities in Breast Cancer Outcomes in India

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Breast cancer is overwhelmingly associated with women, yet men; though forming a small proportion of cases, face distinct clinical and psychological challenges. In India, evidence on how breast cancer differs across genders remains limited, even as gender plays an important role in diagnosis, symptom burden, and emotional well-being. Men often face low awareness and stigma, while women experience cultural and financial barriers influencing care-seeking and symptom management. This study examines gender-specific differences in symptom severity, depression, cancer stage, reporting delay, age at diagnosis, risk exposure, and out-of-pocket (OOP) expenditures. A cross-sectional survey was conducted among 355 breast cancer patients (31 men, 324 women) at two major cancer centres in Punjab. Data were collected using a structured questionnaire, and due to skewed distributions and unequal group sizes, the Mann-Whitney U test was used for comparisons. Symptom severity was significantly higher in women ( $7.26 \pm 3.24$ ) compared to men ( $4.52 \pm 1.93$ ),  $p < 0.001$ . In contrast, men recorded higher depression scores ( $6.68 \pm 3.34$ ) than women ( $4.51 \pm 4.11$ ),  $p = 0.001$ . Men were also diagnosed at a more advanced



cancer stage ( $2.87 \pm 0.81$ ) than women ( $2.53 \pm 0.92$ ),  $p = 0.043$ . Age at diagnosis was higher for men ( $53.46 \pm 10.84$  years) compared to women ( $49.03 \pm 11.38$  years),  $p = 0.046$ . Women had significantly greater exposure to breast cancer risk factors ( $p = 0.006$ ). No meaningful gender differences were found in delay in formal reporting (4.23 vs. 4.64 months;  $p = 0.119$ ) or OOP expenditures (₹11,130 vs. ₹11,619;  $p = 0.749$ ), indicating that structural barriers and financial strain affect both genders similarly. These findings call for gender-responsive cancer care. Men require improved awareness and psychological support, while women need stronger early detection and symptom management. Reducing treatment-related financial burden remains essential for all patients.

### **Availability, Accessibility and Quality of Healthcare Services for Sickle Cell Disorder Patients in Wardha, Maharashtra**

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Sickle Cell Disorder (SCD), a genetic disorder characterised by vaso-occlusive crises and chronic anaemia, has emerged as a major public health challenge in India. It can cause long-term complications and costly health problems. Although advances in diagnosis and treatment have transformed SCD from a fatal childhood illness into a chronic condition, patients still require lifelong supportive care and continue to face barriers in timely diagnosis, accessibility, and quality of treatment. This study assesses the availability, accessibility, and quality of medical treatment services for SCD patients in Wardha district, Maharashtra. A cross-sectional primary survey was conducted in selected villages of Wardha district using a multistage sampling design. Four blocks were selected through simple random sampling, villages were chosen using probability proportional to size, and a patient list was obtained from ASHA workers and taluka health authorities. A total of 340 respondents were interviewed, including 101 individuals with Sickle Cell Anaemia and 239 with the sickle cell trait. Data were collected using a structured questionnaire covering availability, accessibility, and quality-of-care indicators. Descriptive statistics were used for analysis. About 67.35% of patients had an SCD identification card. Screening occurred primarily at government facilities (52.65%). Availability of essential services was highest at inpatient facilities, where all respondents reported access to manpower, medicines, diagnostics, and counselling. At PHCs, availability varied across components. Accessibility was generally good, with over 83% reporting easy access to PHC services and over 92% to inpatient facilities. Satisfaction levels were high (>93% at PHCs; >95% at inpatient facilities). Only 42.6% had received genetic counselling, and ambulance availability at PHCs remained low. The findings underscore the need to strengthen village-level screening, expand diagnostic and counselling services, deploy social workers, and improve facility readiness to support India's Sickle Cell Anaemia Elimination Mission (2023).


### **Probabilistic Estimate of Non-compliance to IFA Consumption among Indian Pregnant Women: Evidences from NFHS-5 Data (2019-21)**

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Iron and Folic Acid (IFA) supplementation is one highly recommended strategy to tackle anaemia. Under the backdrop of high anemia prevalence, this study examines the level of non-compliance with IFA supplementation among pregnant women in India. The analysis involved a sample of 151171 women, who bought or received IFA tablets/syrup during pregnancy, and was surveyed during the National Family Health Survey-5 (2019-21). Descriptive statistics and conditional probabilities are calculated to examine the initiation and attainment of different levels of IFA consumption across selected background variables. Binary logistic regressions are employed to understand the influence of socio-economic factors on non-compliance of IFA supplementation for minimum



100 days and 180 days. While the probability of initiation of IFA tablets is fairly high among pregnant Indian women, the probability of consuming at least 100 tablets declines drastically for pregnant women irrespective of their socio-economic profile. The chances of not taking IFA for at least 100 days and at least 180 days are lesser by 21% and 15% for urban with respect to rural women. Age is not a significant parameter. When compared to the richest, the poorest face 1.6 times higher odds for not consuming IFA for at least 100 days, and 1.96 times higher in case of non-compliance for minimum 180 days. Women with no education shows 1.73 and 1.46-times higher likelihood of being non-compliant with both criteria as compared to those with higher education. Those who have received less than four ANCs are at least two times more likely to be non-compliant. Risk of non-compliance is lesser among women with lower birth order as compared to pregnancies of third and higher birth order. Involvement of community health workers in awareness generation and close monitoring of IFA consumption behaviour ensuring compliance for a minimum of 180 days, might improve the scenario.

### **Solar-Powered Cold Chain for Resilient Immunisation: Strengthening Vaccine Integrity and Child Health Outcomes in Rural North Karnataka**

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**Background:** Vaccination is one of the most effective public health interventions, yet its efficacy depends critically on maintaining strict cold-chain temperatures between 2–8°C. Rural and remote regions of India, including North Karnataka, experience chronic power outages that jeopardise vaccine integrity, delay immunisation schedules, and increase the risk of preventable diseases in new-borns and children. Solar-powered cold chain systems have emerged as a promising strategy to address these infrastructure gaps. This study examines the impact of solarisation on vaccine storage, immunisation delivery, and child health outcomes from the perspective of healthcare providers. **Methods:** A qualitative study was conducted in Primary Health Centres (PHCs) with solar interventions in Dharwad district. Ten in-depth interviews were carried out with medical officers, staff nurses, community health officers, and ASHAs using semi-structured guides. All interviews were recorded, translated, and analysed through content analysis, allowing identification of meaning units, categories, and emergent themes relating to vaccine management and service delivery. **Results:** Solar-powered cold chain systems enhanced vaccine storage reliability by ensuring uninterrupted energy supply and stable temperature maintenance. Providers reported elimination of vaccine spoilage, reduced dependence on grid electricity, and significant decreases in electricity expenditure. Solarisation eliminated the need for transporting vaccines to other PHCs during outages, improving timeliness of immunisation at both facility and sub-centre levels. Improved ice-pack preparation enabled efficient outreach services and higher community coverage. The intervention increased community trust, reduced missed vaccination opportunities, and strengthened overall quality of child preventive care. **Conclusions:** Solarisation of vaccine cold chain systems is a transformative enabler for resilient and equitable immunisation services in rural India. By safeguarding vaccine potency, reducing operational vulnerabilities, and enhancing timely immunisation, solar energy contributes directly to improved child health outcomes and advances progress toward Universal Health Coverage. Sustainable operation and maintenance practices remain essential to sustaining these gains.



## Who Gets Sterilized and When? Timing of Post Caesarean Postpartum Tubectomy in India, NFHS 5 (2019–21)

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Female sterilization remains the cornerstone of India's family planning program. It accounts for over 75% of modern contraceptive use among currently married women, with a substantial proportion particularly immediate postpartum tubectomy. It is performed concurrently with caesarean sections as evidenced by National Family Health Survey-5 (2019–21) data showing 20.5% of C-Section cases involving same-day sterilization versus just 3.3% after normal deliveries. This paper tries describe the distribution and correlates of sterilization timing among women who delivered by c-section in India. It also estimates the adjusted relative risks and survey weighted average marginal effects of key predictors on the probability of each sterilization timing category. This study uses data from the NFHS-5 (2019–21), a cross sectional, nationally representative household survey conducted under the stewardship of the MoHFW, Government of India. Present study used descriptive statistics to summarize the distribution of sterilization timing categories and explanatory variables among women with caesarean deliveries, with proportions estimated using survey weighted methods. Bivariate associations between timing of tubectomy and each covariate is examined using cross tabulations and design-based chi square tests. -weighted average marginal effects of key predictors on the probability of each sterilization-timing category. This study uses data from the NFHS-5 (2019–21), a cross sectional, nationally representative household survey conducted under the stewardship of the MoHFW, Government of India. Present study used descriptive statistics to summarize the distribution of sterilization timing categories and explanatory variables among women with caesarean deliveries, with proportions estimated using survey weighted methods. Bivariate associations between timing of tubectomy and each covariate is examined using cross tabulations and design-based chi square tests. After a normal delivery, majority of women (83.6%) remain non sterilized, and only a small fraction (3.3%) undergoes immediate same day sterilization. In contrast, after C section, the share without sterilization is lower (74.6%), and immediate same day sterilization is much higher (20.5%), showing that tubal ligation is frequently combined with caesarean surgery as a “one time” reproductive limiting event. Women aged 25–34 have higher relative risk ratios as compared with the youngest group (0–24 years). Highly educated women are relatively more likely to opt for interval or delayed sterilization rather than stay non sterilized. Scheduled Castes, Scheduled Tribes, and OBCs all have RRRs >1 across most timing contrasts, indicating they are more likely to be in the “no sterilization” group.


## Understanding Health Outcomes in Women After Hysterectomy: Insights from the Lambani Community of Karnataka

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Although recent studies define the assumptions that hysterectomy and sexual sterilization are associated with psychiatric morbidity, long-term psychological and social sequelae are very common among women who undergo hysterectomy. Hysterectomy is an emerging trend, which is premature menopause, that is, menopause before the age of 40, and before the age of menopause, has been a growing concern in the field of women's health in India (Conway, 2000; Shyamla, 2005; IIPS, 2007). In India, hysterectomy has increased attention in health policy debates in the past few years, where the media reports have highlighted an unusual rush forward in the number of women undergoing a hysterectomy in many parts of the country, with a significant number of cases involving young and pre-menopausal women from low-income families. With an increasing number of Hysterectomies, the Lambani community became the target for private clinics to make money by violating the reproductive rights of



the young Lambani woman. The Private practitioner created fear about cancer and made unethical surgery without explaining the other treatment options. Due to that fear, women have undergone unwanted hysterectomies (Xavier, 2017). In this context, the current study explored the incidence of hysterectomies among the Lambani community of the Kalaburagi district of Karnataka. The current study adopted a quantitative descriptive research design to understand and explore the impact of hysterectomies on women who have undergone hysterectomies below the age of 40 years. The current study found that Lambani women who have undergone unnecessary hysterectomies at a younger age (below 40) suffer from physical health issues. Findings indicated that about 37.1% of the respondents reported severe physical health issues, and 44.9% reported moderate physical health issues. Psychological well-being is poor, whereas psychological distress was high among the study respondents.

### **Assessing the Burden and Determinants of Menstrual Disorders among Young Adult Women in India: An Epidemiological Approach**

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**Background:** Menstrual health is a critical phenomenon for women. It contributes to increase reproductive morbidity and it became uprising issue of public health. Globally, reproductive ill health constitutes 32 percent of total burden of diseases. Therefore, present study attempt to determine burden of different menstrual disorders and leading factors of menstrual disorders. **Data and Methods:** A community based cross-sectional study was conducted. The current study is based on a primary survey conducted among 420 young adult women aged 15-34 years in West Bengal. Descriptive statistical analysis to assess burden of menstrual disorder and associating symptoms with menstrual disorder and binary logistic model has been applied to explore determinants of menstrual disorders. **Results:** Results show that the prevalence of any of menstrual disorder was 75%, among all disorders dysmenorrhea (58.1%) is highest among women, followed by PMS (47.1%) and Oligomenorrhea (38.3%). The study further found that occupation, place of residence, body mass index, depression and eating out were significantly associating factors with menstrual disorders among young adult women in West Bengal, India. **Conclusion:** This study examines the prevalence of menstrual disorders and associating symptoms with it among young adult women and the contributing risk factors. It highlights the importance of identifying related health complications and suggests that early detection and treatment can promote healthier lifestyles and reduce the impact of menstrual disorders.

### **Exploring the Nexus between Sexual Violence and Eclampsia Vulnerability in the Indian Context**


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Eclampsia is the second major cause of maternal death in India. The adverse outcome of eclampsia is not only confined to the immediate effect on maternal and perinatal health. Still, it is also associated with a higher risk of chronic non-communicable diseases in the later stages of life. Earlier studies have linked the occurrence of eclampsia with several underlying factors related to socioeconomic, obstetric, medical, and demographic characteristics. Studies are limited that explore whether Intimate Partner Violence (IPV) causes eclampsia in the Indian context. Therefore, the study aims to investigate the association between IPV and eclampsia. The present study utilized National Family Health Survey Round 5 data (NFHS-5, 2019-2021), which covered 18,431 reproductive-aged women in India. Bivariate and multivariable logistic regression were used to accomplish the



objectives of the study. The study found that 13.8% of women were eclamptic and 6% experienced sexual violence. The study found a significant positive association between sexual violence and eclampsia. In particular, the adjusted likelihood of eclampsia was 1.38 times higher among the women who had experienced sexual violence than their counterparts. significantly increases. In addition, there was a significant regional variation in the likelihood of eclampsia occurring due to IPV. Therefore, central attention is to be given to counselling the spouses during the antenatal visits to prevent eclampsia among IPV-experienced women, which ultimately reduces the risk of maternal morbidity and mortality.

### **Policy and Institutional Framework for Menstrual Hygiene Management in India: National Landscape and Lessons from Rajasthan**

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Menstrual hygiene management (MHM) in India has become a public-health concern and explicit policy area handled across health, sanitation, education and women's welfare portfolios. This paper synthesizes the national policy and institutional architecture for MHM, reports recent outcome data, and uses Rajasthan's state experience (notably the Udaan sanitary-pad programme) as a focused example to draw operational lessons and policy recommendations. The objective is to map the policy instruments, implementation actors, and outcomes—and to identify key gaps and scalable practices for improved coverage, equity and environmentally sound disposal. The paper identifies the core national schemes and guidelines for menstrual hygiene, notably the Menstrual Hygiene Scheme. The MHS combines supply (subsidized sanitary napkins), health education (school and community sessions) and support for safe disposal. National Family Health Survey-5 (2019–21) shows a marked increase in hygienic menstrual protection. These gains point to tangible effects of combined supply, awareness and infrastructure interventions but also mask remaining gaps (rural/tribal districts, menstrual waste management and affordable continuous supply). Rajasthan has been an active state in MHM policy innovation and scaling. The state launched the Udaan free sanitary-pad distribution programme which provides monthly pads to schoolgirls and women in specified age categories and distributes pads through Anganwadi centres and schools. Evaluations and program briefs report substantial beneficiary numbers (program targets in the millions at scale), integration with frontline workers for behaviour change messaging, and digitized beneficiary tracking in some phases. Rajasthan has also piloted disposal awareness and selected local initiatives to improve school sanitation and menstrual-waste options. However, independent analyses highlight uneven reach in urban slums and rural pockets, and note the need to pair free distribution with systems for safe collection and environmentally acceptable disposal or recycling. The paper identifies key strengths and gaps in the framework and ends with policy recommendations.


### **Digital Inclusion and Reproductive Health: Exploring the Influence of Digital Technology on Menstrual Practices among Indian Women: Evidence from National Family Health Survey (NFHS-5) 2019-2021**

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Menstrual-hygiene is a key determinant of women's health, with poor practices leading to reproductive and urinary-tract infections and increased psychological distress. The internet serves as an effective platform for health education, promoting safe practices, and reducing stigma around menstruation. Despite its potential, the link



between internet-use and menstrual-hygiene behaviours in India remains underexplored. This study investigates the impact of internet-usage on menstrual-hygiene practices among women in India. This study utilized data from the NFHS-5 data. The study included a sample of 36,117 women aged 15–24. Descriptive analysis and multinomial-logistic-regression were conducted to assess the association between internet-usage and menstrual-hygiene practices. Results show that internet-using women are significantly more likely to adopt hygienic-menstrual-methods compared to non-internet users. Among internet users' women, those residing in urban areas, and those with higher levels of education show a higher prevalence for practicing purely hygienic-methods. Findings from regression analysis reveal that women who use the internet are significantly more likely to adopt purely hygienic-menstrual practices compared to non-users in the same age group. Wealth is another critical factor, as the richest group of women with internet use are 8.9 times significantly more likely to adopt hygienic-methods compared to the poorest non-users. Media exposure and employment status further influence these outcomes, with employed and media-exposed internet users showing a significantly higher likelihood of practicing hygienic-methods compared to their non-using peers. The findings indicate that internet usage serves as a catalyst for better health behaviour, particularly in improving menstrual-hygiene practices. However, the digital-divide remains a barrier for marginalized groups, such as women from Scheduled Tribes (ST) and Other Backward Classes (OBC), who are less likely to access the internet and thus adopt purely hygienic practices. Policies should focus on increasing digital-literacy, expanding internet access, and integrating menstrual-health education into digital platforms to ensure equitable health outcomes.

### **Psychological Problems of Infertile Women Attending Tertiary Care Hospital of Varanasi, Uttar Pradesh**

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**Introduction:** Conception is one of the most intimate and emotionally profound experiences in the lives of married couples. Infertility is defined as a disease of male/female reproductive systems characterized by the inability to conceive after 12 months or more of regular, unprotected sexual relationship. **Significance of the Study:** - TFR is falling below the replacement level of 2.1 due to better education, utilization of health care services, increase in infertility prevalence etc. Infertility is a growing crisis over 30% in some studies and all factors compounded by deep seated social stigma, high treatments costs and lack of awareness making a silent personal and societal health burden. **Methodology:** - It is a hospital based cross sectional analytical study design. The findings are based on 106 infertile and same numbers of fertile women in the age group of 18-45 years. Data is collected through pre-tested structured schedule during the January 2024 to October 2024. **Results:** No cordial relationship within laws among infertile women was 60.4% as compared to 32% in fertile women. The problems of facing harassment in law's home, threat to divorce, freely attend social functions/ceremonies and insecurity about the future of marriage life were 59.4%, 36.8%, 59.4% and 63.2% respectively in infertile women as compared to 31.1%, 5.7%, 85.8%, and 10.4% in fertile women. The percentage distributions of social stigma (discrimination, differently viewed and called as inauspicious) were 38.7, 69.8 and 35.8 respectively. The social problems among the infertile women were higher than the fertile women and these problems were also significantly associated with depression, stress & anxiety. **Conclusion & Recommendation:** The social problems and social stigma related to infertility faced by the women are found significantly higher. The awareness and counselling toward infertility among the women may be helpful in reducing the social problems & stigma.



## Disparities in Mental Health Services Utilisation across Caste and Gender: A Retrospective Study from Tertiary Care Facility of Eastern India

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**Introduction:** In India mental health service utilization is still not symmetrical to all sections of the people. Despite significant progress in the field of public health as well as mental health still many people tend to refrain from availing scientific mental health service and treatment modes. There are observable differences in using of tertiary mental health services among people of different castes, gender and socio-economic backgrounds. **Aims and objectives:** This study is an endeavour to see the Disparities in Mental Health Services Utilisation Across Caste and Gender in a tertiary mental health facility located in the Eastern Region of the Republic of India. **Methodology:** This study is retrospective in nature. This study is based on a retrospective analysis of routinely recorded patients related clinical data collected during 2012 and 2025. **Results:** In the present study, it was noted that, within the span of 14 years, there is more than 70% increase in patients' registration at OPD level. In the present study, it was noted that, in case of new as well as follow-up cases males have always constituted an overwhelming majority than females. **Conclusions:** In the context of new cases (patients coming to the Institute for the first time), the number of male patients almost doubled during 2012 to 2025 and at the time of follow-up, this difference was seen to further increase to nearly 2½ times.

## Evolution of Mental Health Policy Priorities in India over the Decade: A Topic Modelling Approach

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Globally, mental health has become an essential pillar of public well-being and economic stability, yet its trajectory inside Indian national policy remains insufficiently measured and weakly systematized in academic research. The policymaking process in India produces a large volume of long-form documents, but does not provide structured metrics to indicate how strongly an issue is prioritized each year. As a result, understanding whether mental health has moved from a peripheral narrative topic to a functional policy priority is still mainly based on selective reading, expert commentary, or service outcome evaluations, rather than being grounded in systematic evidence extracted from the core national governance texts themselves. Tracking evolution of priority of mental health inside policy text is essential because policy intent is ultimately recorded through language before it is recorded through structured implementation. So, how can we systematically study India's shifting attention toward mental health, detect how the problem is framed in different policy periods, and quantify the evolution of digital and tele-counselling infrastructure, when the evidence exists in extremely large policy narratives? To address this research question, the present study utilizes 10 years (2014-24) of annual health reports released by the Ministry of Health and Family Welfare, and the debate transcripts from both Lok Sabha and Rajya Sabha during this period, and invokes Natural Language Processing (NLP) techniques such as LDA-based topic modelling for evidence mining and discourse measurement. Specifically, the paper attempts to 1) quantify the volume of mental health discourse relative to overall health policy language each year during 2014-2024, 2) analyse thematic context in which mental health is discussed, such as stigma, youth wellness, rehabilitation, counselling access, psychiatric infrastructure, etc., and 3) examine the emergence and maturation of digital mental health policy, particularly tele-counselling frameworks such as Tele-MANAS.



## Silent Suffering: Estimating Postpartum Depression Risk Using NFHS-5 through a Social Science Lens

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Postpartum depression (PPD) is a critical yet under-recognized public health issue in India, with substantial implications for maternal well-being, child development, and family functioning. Despite its significance, the National Family Health Survey (NFHS-5) does not include standardized mental health screening tools such as the Edinburgh Postnatal Depression Scale, creating a major gap in national-level evidence. This study addresses this limitation by constructing a Postpartum Depression Proxy Index (PPDPI) using NFHS-5 variables grounded in social science and maternal health literature. A nationally representative sample of 91,115 women who had given birth in the past 24 months was analysed using survey-weighted methods. Fifteen indicators—covering unwanted pregnancy, intimate partner violence (emotional, physical, and pregnancy-related), partner alcohol use, low social support, husband's absence, functional limitations, pregnancy complications, caesarean delivery, low birthweight, caste disadvantage, low education, and low wealth—were combined into a proxy index ranging from 0 to 14. Women scoring 0–4 were categorized as low PPD risk, 5–8 as moderate risk, and  $\geq 9$  as high risk. Nationally, 76.66% of women fell in the low PPD risk category, 23.13% in the moderate category, and 0.21% in the high-risk category. Significantly, elevated risks were observed in eastern and northeastern states, particularly Odisha, West Bengal, Bihar, Assam, Meghalaya, and Jharkhand. Rural women had double the risk of moderate/high PPD likelihood compared to urban women. Survey-adjusted regression results indicated strong associations between higher PPDPI scores and unwanted pregnancy, emotional violence, caesarean delivery, low wealth, low maternal education, pregnancy complications, husband's absence, and partner alcohol consumption. The study demonstrates that proxy-based assessment can effectively bridge data gaps in national surveys and generate meaningful mental health insights. Findings underscore the urgent need to integrate mental health screening, social support, and violence-prevention strategies into maternal health programs to advance the vision of Viksit Bharat: Wellness for All.

## Usage, Switching, and Discontinuation of Injectable among Indian Women

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In 1993, India approved the Depot Medroxy Progesterone Acetate (DMPA) as an injectable contraceptive method for women. More than two decades later it was launched at medical colleges and district hospitals in 10 states in 2017 and was named 'Antara' and recognized as a mainstream method recently in the public sector. Now, it is available at the lowest level of public health facilities. It is a safe and convenient spacing method and enhances women's autonomy in their fertility regulation. Having its multiple advantages, the National Family Health Survey (2019-21) shows a low usage of injectables (0.6%) among Indian currently married women. Thus, this paper examines the usage, switching, and discontinuation of injectables among Indian women. We find that most women who discontinued the method wanted to become pregnant (32%), followed by faced health-related issues (22%), even though most users have received information on the management of side effects. Among those who have used injectables as the last method, 39% discontinued, 16% retained, and 45% switched to other methods. This analysis extended to find factors associated with reproductive preferences, women's empowerment, and supply-side to dig out reasons for low usage of injectables to draw plausible policy recommendations.



## Declining Enrolment Pattern and its Reflection on Per Student Public Expenditures on Elementary Education across Southern and Central States

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In the recent decade, the enrolment in elementary education in India is reported to have been declining. One of the major reasons attributable could be declining birth rates. The child population under age 14 started declining in the new millennium. However, Census 2011 shows the declining child population between the age group 0-6 census, for the first time due to decline in fertility rates. This declining child population is now cascading into the declining enrolment in the current decade across states. Now, the questions arise: What are the contributing factors to the downward or declining enrolment pattern? Is it due to declining child population? Or is it due to the unsatisfactory quality of the public (government) provision of school education? In other words, is it due to shift in the demand for private schooling? Other contributing factors could be migration, relocation of families, etc. Attributing to appropriate factors though essential needs a dataset which covers unit level data of students along with tracking ids, preferably the Adhaar card numbers. This is not readily available for researchers. In the absence of such information, the present paper attempts to examine the questions of when (time period) and where (southern and central states) the declining enrolment pattern is observed. Accordingly, the paper uses Selected Educational Statistics and UDISE data. The study period covered will be from 2000 to 2021-22. The paper consists of two parts. The first part of the paper will cover the southern and central states and make comparison between and within this group of states. Subsequent part of the paper will investigate the per student public expenditure on elementary education across these states.

## SDG-3 and Health Care in India: A Sociological Study

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In 1983, the United Nations established the World Commission on Environment and Development (Brundtland Commission), and introduced the concept of sustainable development: “meeting the needs of the present without compromising the ability of future generations to meet their own needs.” The SDGs are a set of 17 universal goals adopted by all United Nations Member States in 2015 as part of the 2030 Agenda for Sustainable Development. SDG-3 Good Health and Well-Being is a unique goal to address and ensure the health and well-being of all that is essential to poverty eradication efforts and achieving sustainable development, contributing to economic growth and prosperous communities. The main objective of study is to delve the condition of healthcare and health infrastructure in India based on secondary sources of data available from authentic sources. This study is descriptive in nature and attempt to explicate the progress in Indian Healthcare practices by comparing to the goal of SDG-3 of United Nations. According to the latest India’s National Family Health Survey-5 (2019-21) report: • The proportion of pregnant women who had an Antenatal Care (ANC) visit in the first trimester increased from 59% in NFHS-4 (2015-16) to 70% in NFHS-5 (2019-21). • At the national level, there is an increase from 51% (2015-16) to 59% (2019-21) of women receiving the recommended four or more ANC visits from health providers. • Institutional births have increased significantly from 79% (2015-16) to 89% (2019-21) at the national level. Institutional delivery is 100% in Kerala, Goa, Lakshadweep, Puducherry and Tamil Nadu and more than 90% in eighteen other States/UTs. • Even in rural areas, approximately 87% of births are delivered in institutions, while 94% are delivered in urban areas. The study suggests the Government of India to have stringent monitoring on healthcare schemes and programmes in India.



## Impact of Community-Based Empowerment Program on Transforming Gender Role Attitudes and Self-Efficacy among Young Girls

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The study aimed at examining impact of efforts led by community-based girls' empowerment program in shifting gender role attitudes among them and also modifying their sense of self efficacy signifying leadership behaviour. Program included play-based intervention including girls group meeting, and light touch community interaction. The long run program goal was to reduce early marriage in study area which are hard to reach but can be influenced by modifying social norms. Primary data collected to understand the impact community-based approach on key outcomes impacting girls' life decision and leadership, adopting a mixed method quasi experimental design in Hazaribagh district of Jharkhand, where a girl-focused community-based program was implemented by Mahila Mukti Sanstha. The baseline and endline cross-sectional survey were conducted among the girls aged 12-21 years in 2022, and 2024 respectively, and 3,975 girls were interviewed during both the rounds. The primary outcome of this paper is the gender role attitude and self-efficacy among girls measured using battery of questions asked in the survey and analysed using the bivariate and multi-variate methods. The difference-in-difference (DID) analysis suggests that program has modest impact on improving the gender role attitude while the improvement was significantly visible on sense of self-efficacy (14.6 percentage points). Multivariate regression analyses further revealed that, after adjusting for socio-demographic factors, program participation was significantly associated with higher gender-equitable attitudes ( $\beta=0.34$ ) and improved self-efficacy ( $\beta=0.19$ ). Moreover, girls who regularly attended group meetings showed the significant gains across both outcomes, indicating a strong dose-response effect. Overall, the program effectively strengthened girls' confidence, improved their ability to navigate challenging situations, and enhanced their decision-making autonomy. These findings highlight the transformative potential of gender empowerment interventions in challenging entrenched social norms and promoting adolescent agency, thereby contributing longstanding goal of reducing child marriage and improved educational outcomes.

## Health as Human Capital: A Core Pathway to Viksit Bharat @2047: An Econometric Analysis

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Health constitutes a central pillar of human capital and a key determinant of economic growth, productivity and inclusive development. In the context of India's vision of Viksit Bharat@2047, this study empirically investigates the relationship between Log Gross National Income (LGNI) and selected development indicators Mean Years of Schooling, Gini Coefficient, Life Expectancy, and Under-5 Mortality Rate. Using secondary data from 1992 to 2022, the study employs the Johansen Cointegration Test and Vector Error Correction Model (VECM) to examine both long-run and short-run dynamics. The cointegration results confirm a stable and significant long-run equilibrium relationship among the variables, indicating that education, health, and equitable income distribution collectively drive economic performance. In the long run, Mean Years of Schooling and Life Expectancy positively influence LGNI, while Under-5 Mortality Rate exerts a strong negative effect. Short-run dynamics reveal that rising inequality and declining health conditions adversely affect income growth. Post-diagnostic tests confirm the reliability, stability, and robustness of the model. The findings substantiate that investment in education and health not only enhances human capital but also fosters sustainable economic growth, aligning with the developmental objectives of Viksit Bharat @2047.



## Age-Period-Cohort Model for Estimating the Incident Rate of Diabetes among Elderly: LASI Data Analysis

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Incident rate (IR) is defined as the incidence of new cases of a disease over given time period to the total population exposed. This incident rate is not comparable to another group of population. To overcome this, incident rate ratio (IRR) calculated as the ratio of two different groups rates. To estimate the incident rate ratio of Diabetes among elderly, Age-Period-Cohort model used. Data were collected from LASI wave I and estimated by age group, period (duration of diabetes) and cohort (Birth cohort) by sex. For building the APC model, initially data matrix developed suitable to Lexis diagram frame work and analysed by generalized linear model (GLM) with a Poisson family, a log link and log person-risk-time. Results show that for total sample, the risk of diabetes significantly increases in the age groups 55 to 79 and slight decline in 80-85 age group compare to younger age group 45-49. The period (calendar year) has shown an overall significant increase in risk and showed highest risk of Diabetes in the recent period 2005-2014 (IRR=20.17,  $p < .001$ ) when compare to base period. Conversely, the cohort effect suggests that people born more recently may have a lower risk than previous generations, possibly due to increased health awareness and interventions. Stratification by sex, Period effects are large but less than females (e.g., 2005–2014 IRR ~15.6 men vs ~27.8 women) for Men. Cohort effects for men show negative pattern (IRRs  $< 1$  for later cohorts) suggests men of later cohorts may have lower incidence of diabetes relative to baseline after adjustment (or sample artifact). In case of women, Age effects are consistently higher than men and Period increases are larger than men particularly for 2<sup>nd</sup> the Periods 2005–2014 and 2015–2020. Further negative binomial model fitted to know the sensitivity of IRR estimates and discussed.

## Estimating Prevalence and Burden of Hidden Diabetes in India

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Diabetes is a major public health challenge in India, yet a large proportion of diabetes cases remain undiagnosed. This study aims to estimate the prevalence and burden of hidden diabetes—defined as biomarker-confirmed diabetes in individuals unaware of their condition—at state-level across India examining variations by age, sex and rural–urban residence. Data were obtained from India’s National Family Health Survey (NFHS-5, 2019–21), which included random blood glucose measurements and self-reported diabetes status. Hidden diabetes was identified by elevated blood glucose levels ( $\geq 140$  mg/dl) without self-reported or clinically diagnosed diabetes. We evaluated the sensitivity, specificity, and predictive validity of self-reported and clinically diagnosed diabetes compared with biomarker-confirmed diabetes. We then estimated the prevalence and absolute burden of hidden diabetes, adjusting for age and sex. The sensitivity of self-reported diabetes was low, at 42.3% among women and 45.2% among men, indicating substantial underreporting. Nationally, the age-sex adjusted prevalence of hidden diabetes was 8.8%, corresponding to approximately 119 million individuals. Prevalence was higher among men (9.5%) than women (8.1%), and higher in urban (9.8%) compared to rural (8.4%) areas. Tripura, West Bengal, and Gujarat had the highest prevalence rates, while the largest absolute burdens were observed in populous states such as Uttar Pradesh and Bihar. The findings highlight a critical gap in diabetes detection in India. Population-based biomarker screening and targeted interventions are urgently required to identify hidden diabetes cases and address this silent public health epidemic.



## Exploring Socio-Demographic, Lifestyle, and Clinical Factors Associated with Hypertension among 60+ Years Population in India: A Multivariable Predictive Study Using LASI Data

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**Background:** Hypertension in elderly populations is an escalating global health problem, with special urgency in LMICs such as India. Although prior work has illuminated many determinants among middle-aged and older adults, less is known about the 60+ cohort in India using large-scale, nationally representative, measured data and integrated predictive models. Therefore, this study addresses these gaps, aiming to deliver evidence that can inform age-sensitive hypertension prevention and management strategies in India. **Methods:** Data from LASI Wave 1 (2017–18), a nationally representative sample of 31,818 adults aged  $\geq 60$  years, were analysed. Socio-demographic, lifestyle, and clinical information were collected via structured interviews and health assessments. Multivariable Forward Logistic Regression model identified independent predictors of hypertension. Nagelkerke  $R^2$  was used to check the measure of model fit, and the Hosmer and Lemeshow Test was carried out to test goodness-of-fit. The ROC analysis determines model performance across all possible thresholds. **Results:** Hypertension prevalence varied by lifestyle, Socio-demographic and clinical characteristics. Person 60+ years diagnosed with diabetes, cancer, chronic lung disease, chronic heart disease, stroke, chronic bone/joint diseases, neurological/psychiatric problems, high cholesterol, eye/vision problems, hearing/ear-related problems etc., are significantly associated with hypertension. Higher risk was observed with physical inactivity (17.1%) and those who had recently quit smoking (16%). Strongest predictors included neurological/psychiatric disorders, high cholesterol dialysis in the past two years, and vision problems, whereas recent diarrhoea/gastroenteritis reduced risk as compared to their counterparts. ROC analysis showed model performance at a cut-off of 0.29, with 73.0% sensitivity and 73.7% specificity. **Conclusion:** People with hypertension have a higher chance of getting neurological/psychiatric disorders, dialysis within two years, high cholesterol, and vision problems than their counterparts, which leads to integrated public health strategies targeting high-risk older 60 years and above, promoting preventive lifestyle measures, and incorporating routine screening to detect and manage hypertension in India.


## Geographical Differentials in Hypertension and Diabetes among Males in India: A Regional Analysis at District Level

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**Background:** Non-communicable diseases (NCDs) have emerged as the world's leading public health challenge due to their chronic nature. In 2021, NCDs caused at least 43 million deaths globally, accounting for nearly 75% of all non-pandemic-related deaths (WHO, 2024). Of these, about 18 million deaths occurred before the age of 70, with 82% concentrated in low- and middle-income countries (WHO, 2024). This study examines regional differentials in the prevalence of NCDs and their associated risk factors across India and its districts. **Method:** This study draws on data from two rounds of the National Family and Health Survey (NFHS) in India: NFHS-4 (2015-2016) and NFHS-5 (2019-2021). Descriptive statistics, including bivariate and multivariate analyses, were performed to examine the prevalence and associated factors of NCDs. **Result:** The study has classified the districts in to 'low', 'moderate', 'high' and 'very high' category. Findings indicate a significant increase in the prevalence of both diabetes and hypertension among men and women in India. In most regions, the number of districts has increased in 'high' and 'very high' category, while in the northeastern region; the districts have increased in all categories except moderate category. In NFHS-5, among men, the odds were even higher, with those aged 35 years and above showing 7.3 times higher odds of hypertension (OR 7.358; 95% CI 6.783–7.981) and 6.2 times higher



odds of diabetes (OR 6.243; 95% CI 5.627–6.926). Conclusion: This study provides robust evidence on the growing burden of NCDs in India, highlighting age, gender, urban-rural, and regional disparities. The findings underscore an urgent need for community-based health education and awareness programs to sensitize populations about risky health behaviours and encourage preventive measures in a more targeted manner

## Social Support of Visually Challenged Women Residing in Rural Districts of Tamil Nadu, India

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Visually challenged women in rural India faces various challenges due to disability, gender roles, stigma and limited access to services. Social support is crucial for enhancing their psychological well-being, independence, and overall quality of life. Therefore, this study aimed to assess the perceived social support and identify the factors influencing social support among visually challenged women. A community-based cross-sectional study was conducted with 333 visually challenged women aged between 18 to 44, who were residing in two districts of Coimbatore and Tiruchirappalli in Tamil Nadu, India. Data were collected using interviewer-administered questionnaires, which included socio-demographic details and a newly developed social support scale (Tamil version), validated through expert and pilot testing. The social support scale comprised of 27 items measured on a 5-point Likert scale, with higher scores indicating a higher level of social support. The scale showed excellent internal consistency with a Cronbach's alpha of 0.947. Of the 333 participants, 161 were housewives and nearly 244 attended formal education, with a mean age of 36.1±5.9 years. Overall, the participants received a moderate level of social support. Significant differences in social support were observed based on education, occupation, religion, community, having a spouse with a disability, and number of children. Age and individual income did not show significant differences. Participants who were illiterate, employed, had a spouse with a disability and had no children reported higher social support. Those from the Backward Community and Hindu religion also reported slightly higher levels of support than those from other communities and religions. The study suggests the importance of tailored interventions to enhance support systems and well-being for this vulnerable group.

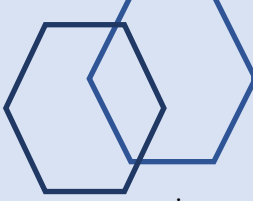
## Life-Course Socioeconomic Status and Tobacco Use among Older Adults in India: Exploring Age Pattern and Gender Variations

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Objectives: Tobacco use is a leading and potentially modifiable risk factor for the global burden of disease and all cause of mortality. In this study, we examine the link between life course socioeconomic status and tobacco use among older adults in India. Secondly, we assess the gender differences in tobacco use by age and marital status. Methods: We used nationally representative data from Wave 1 of the LASI survey, which was conducted across all states of India. Bivariate and multivariate logistic regression models were used to examine the association between life course socioeconomic status and tobacco use among the middle-aged and older population. Further, the interaction of age, sex and marital status on tobacco use was evaluated. Results: The results suggest a significant association of life course socioeconomic status in determining tobacco use among older adults in India. Educational attainment of the study participants was significantly and negatively associated with tobacco use, particularly among women. Poor childhood socioeconomic status was positively associated with tobacco use (OR=1.29, 95% CI 1.13, 1.46). Further, the interaction between age and sex is notable. Women of higher age are more likely to use tobacco than their male counterparts and the interaction between widowhood and tobacco use is notable among older women. Conclusions: The results of the study suggest a significant role of life course



socioeconomic status in shaping tobacco use. Particularly, the interaction of age, marital status and gender with tobacco use higher the vulnerability among older women in India. The results also highlight the need for targeted intervention among women will be essential which can help to reduce the prevalence of tobacco use among older adults in India.

### **Spatial Hotspots and Determinants of Cardio metabolic Risk among Adults in India: Evidence from the National Family Health Survey-5 (2019–21)**

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Cardiometabolic risks are increasing rapidly in India and cluster due to behavioural and metabolic pathways. South Asians show higher susceptibility, yet national studies combining biomarker-based cardiometabolic risk with spatial patterns are limited. To study this, we use India's nationally representative NFHS-5 (2019-21) data, which includes 661,547 adults aged 18-54 years, to examine the socio-demographic determinants and spatial variations of cardiometabolic risk. Bivariate associations were assessed using Pearson's chi-square tests, followed by multivariable binary logistic regression using StataSE. Spatial clustering and hotspot analysis were conducted using ArcGIS and GeoDA. Results show that 22.01% of Indian adults had cardiometabolic risk, increasing from 13% in the 18-28 age group to 35.6% among those aged 40-54 years. Men exhibited a considerably higher burden than women. Smaller family household sizes, richer economic groups, individuals with primary education, general caste populations, Muslims, and urban residents had a higher prevalence. Tobacco users and alcohol consumers' behaviours demonstrated elevated risk. Multivariable regression confirmed these disparities, with age, wealth, caste, religion, and lifestyle behaviours emerging as significant predictors. Spatial analysis revealed significant clustering of cardiometabolic risk across districts, indicated by a Global Moran's I of 0.31 ( $p < 0.001$ ). Hotspots were concentrated in parts of northeastern, southern, and northern India, while cold spots appeared in central, eastern, and western regions. The findings underscore the need for targeted district-level interventions, including early screening for cardiometabolic disorders as well as improvements in education, awareness, health services, and food environments. Addressing socio-demographic disparities through equity-oriented policies is crucial for mitigating the growing burden of cardiometabolic risk and supporting India's progress toward achieving SDG-3.


### **Spatial Heterogeneity in Malnutrition Indicators among Under-Five Children in Gujarat: Evidences from NFHS-4 and NFHS-5**

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Gujarat, despite being ranked among India's top five states in terms of NSDP, continues to experience severe child malnutrition (NFHS-5, 2019-21). The state reports higher levels of stunting (39%), underweight (39.7%), wasting (25.1%), overweight (3.9%), and anaemia (79.7%) than the national averages, revealing a paradox where economic growth has not translated into better nutritional outcomes for children. While many studies examine child malnutrition nationally, district-level analyses for Gujarat remain limited. Key gaps persist in understanding temporal trends and the spatial concentration of malnutrition within the state. In this backdrop, present paper investigates: 1) temporal pattern in malnutrition indicators (stunting, underweight, wasting, overweight, and anaemia) in Gujarat from NFHS-4 (2015-16) to NFHS-5 (2019-21), and 2) spatial clustering of malnutrition indicators across districts for both rounds of NFHS. Unit-level data of under-five children from NFHS-4 and NFHS-5 are used to address these objectives. Bar-chart symbol maps and two-proportion Z-tests assess temporal patterns and significant changes in malnutrition indicators between the surveys. Spatial clustering is examined



using Global Moran's I; univariate LISA, and Getis-Ord Gi statistics are used to identify district-level hotspots and cold spots. Temporal analyses reveal significant rises in stunting and overweight in Dohad, Panch Mahals, and Rajkot, and increased wasting in Narmada, Junagadh, and Kachchh. Alarming, nearly 90% of districts record a significant rise in anaemia. Significant Moran's I value for all indicators except overweight suggest spatial clustering of these indicators in specific pockets of the state. Eastern districts such as Mahisagar and Chhota Udaipur show high-high clustering for stunting and underweight; Navsari and The Dangs for wasting; and Dahod, Mahisagar, Panch Mahals, and Chhota Udaipur for anaemia. The findings highlight persistent malnutrition and its concentration in eastern Gujarat, underscoring the need for evidence-based, district-focused interventions aligned with the SDG-2 goal of ending all forms of malnutrition for a progressive India.

### Unravelling the Contextual Determinants of Obesity in Young Adult Women in India


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Young adulthood represents a critical stage for the emergence of obesity. Obesity among young adult women is increasing in India, but the interplay of social and time-related factors driving this shift remains poorly understood. We pooled data from NFHS-3, NFHS-4, and NFHS-5 for women aged 20–39 years to assess patterns of obesity and the changing effect of contextual determinants. The focus on young adulthood allows the identification of early-life contextual vulnerabilities. Age-period-cohort intrinsic estimator models were applied to disentangle age, period, and cohort influences, allowing assessment of whether changes over time were driven primarily by survey periods, generational differences, or age-related variation. To unpack the factors driving change between NFHS-4 and NFHS-5, multivariate decomposition analysis was applied, incorporating socioeconomic characteristics, demographic indicators, and key household context variables. Findings show that the prevalence of obesity among young adult women has risen sharply from NFHS 3 (11.83 %) to NFHS 5 (23.40%), alongside a narrowing gradient across wealth groups, pointing to a convergence of risk. The obesity risk rises at later ages, with modest period increases and minimal cohort effects, indicating temporal changes are partially independent of age-related variation and broader social and environmental changes. Decomposition analysis between NFHS 4 and NFHS 5 reveals that differences in the effects of social characteristics explain most of the shifts between surveys, while differences in prevalence contribute less, highlighting that the influence of social factors varies across groups and over time. This signifies the growing importance of socioeconomic transitions in shaping obesity patterns among young women. By using both temporal modelling and decomposition, this study offers a nuanced understanding of the shifting social landscape of obesity in India. The findings underscore the need for interventions that move beyond individual behaviour to address broader contextual and structural determinants influencing women's health during young adulthood.

### Integrating Social Science for Wellness for All: Cross-Sectoral Pathways towards Viksit Bharat

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India's vision of Viksit Bharat 2047 calls for a transformative shift from a curative, medicalized approach to a holistic, people-centred model of wellness. Achieving "Wellness for All" requires recognising that health outcomes are shaped not only by biological factors but significantly by social, behavioural, economic, cultural, and environmental determinants. This paper examines how social sciences can strengthen health policy and practice by enabling cross-sectoral collaboration, behavioural insights, and community engagement. Anchored on three



core objectives, the paper: (1) identifies pathways for advancing wellness through strategic partnerships between health, education, labour, women and child development, environment, and digital sectors; (2) presents best practices and evidence-based interventions that highlight successful integration of social sciences in public health initiatives; and (3) proposes actionable recommendations for policy and practice to realise a future-ready, equitable health system for a Viksit Bharat. The findings underscore that integrating social science perspectives—psychology, sociology, behavioural science, economics, and public policy—can significantly enhance wellness outcomes, strengthen preventive care, reduce disparities, and build resilient, empowered communities. The paper concludes that embedding social science frameworks into national health strategies is essential for achieving health equity and ensuring holistic well-being for all citizens.

### **Occupational Health Challenges: Insights from Loco-Pilots of Eastern Railways, India**

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**Introduction:** Occupational Health as a discipline directly focuses on the prevention of accidents, injury, infection and diseases and the promotion of safe practices to maintain optimized health outcomes. The conceptualization of work in both formal and informal has the intersection of occupational health. The compartmentalization of occupational health hazards is difficult because the principle of one size fits all is not a practical application. The objective of the study was to identify the challenges in occupational health and safety among loco pilots which is a senior designation among operating staff. **Methods:** The research followed convergent parallel mixed methods design which was descriptive by nature. The tools for data collection were questionnaires and in-depth interviews for quantitative and qualitative respectively. The data analysis was conducted through IBM-SPSS and thematically for quantitative and qualitative respectively. The mathematically estimated population was 181 through Cochranes Formula and the sample size was for this study 141 which was purposively selected. **Results:** 61 (43.3%) were unable to identify these as Lifestyle Diseases. 73 (51.7%) strongly agreed with musculoskeletal injuries and displayed a statistically significant correlation of .800 with stress, similarly the variables of sound & vibration with stress displayed .591. The variables of halt time and toilet cleaning displayed correlation of .662. Duty (in hours) and Post Crew Management System Scheduling displayed .550. **Conclusion:** The concerns of occupational health challenges range from insufficient rest, lifestyle diseases, significant consumption of tobacco, limited access & improper conditions of sanitation, occupational and personal sources stress have been flagged, and the implementation of crew management system has helped scheduling. The work-life balance with aspects of calendar holidays and recreational activities are constant concerns that remain an occupational hazard.

### **The Rise of Modern Apprenticeships: Mapping the Advanced Healthcare Apprenticeships in Clinical Settings across Nations**

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India, like many other countries, faces a shortage of healthcare human resources that is exacerbated in certain geographical areas. To widen the pool of competent people entering the labour market, the advanced economies have reintroduced the concept of Apprenticeships in highly skilled professions such as healthcare. Apprenticeships are a form of Vocational Education and Training (VET) that is based on the “earn while you learn” model. The integration of apprenticeships in healthcare has emerged as a powerful workforce development tool, creating new career opportunities for youth and advancing the careers of those already employed. With the increasing interest

in advancing vocational education in India, such as the development of the National Skill Qualifications Framework, a transformation in the traditional education and training system is evident. Thus, this study aims to map, simplify, and compare healthcare apprenticeship roles, with a focus on clinical roles, in selected case countries, namely England, Switzerland, Germany, New Zealand, and Australia. The study aims to understand the major framework of healthcare apprenticeships, the key differences and similarities in these frameworks, and their positioning in the wider healthcare system hierarchy. The details of clinical apprenticeship roles will be collected through publicly available sources and extracted to capture key information, and will be systematically organised for simplification. Further, a comparative matrix will be created for a simplified cross-country model, and a typology of roles will be developed. By mapping and simplifying these frameworks across an international context study offers a comparative insight into designing structured training routes that are suitable for a country's healthcare systems. The study will contribute to a broader understanding of how skill formation, besides traditional education routes, has evolved in the healthcare industry and offer transferable policy lessons to build an inclusive, community-responsive and sustainable healthcare workforce, leading to better health systems.

### **Improving Rural Health Access through Telemedicine in South 24 Parganas**

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The rural healthcare system in India has many infrastructural issues and the inequitable distribution of healthcare services. It is very difficult for the rural communities to access the quality healthcare. Previous research from Uttar Pradesh and West Bengal shows the shortage of trained staff and the lack of accessibility and affordability in healthcare services. When people in rural communities need to access healthcare, they have to travel long distances and it is very difficult for them to pay the amount which results time loss from regular work and daily living. Research in Anganwadi centres in South 24 Parganas has shown that some basic health services are available in the rural areas but lack of monitoring, limited accessibility, lack of public awareness plays a part in preventing people from taking advantage of the services provided by the healthcare. The analysis conducted to indicate that there are significant disparities in access to healthcare among different regions of Bengal. In this scenario, telemedicine represents an innovative and cost-efficient option for reducing disparities in access to healthcare for rural peoples. Through telemedicine, rural peoples will get access to remote consultations, rapid diagnosis and ongoing health monitoring, all of which will reduce the amount of time and money spent travelling to receive healthcare and reduce the amount of income lost due to the need for absence from work for receiving healthcare services. The research presented seeks to determine how telemedicine can be incorporated into rural health service delivery in South 24 Parganas for improving access and quality of care without interrupting the workdays. It helps to strengthen the digital infrastructure, enhancing community awareness, which are essential to achieve equitable and efficient healthcare for rural populations. The study contributes an actionable insight toward advancing Universal Health Coverage through technology-driven interventions like telemedicine in remote areas.

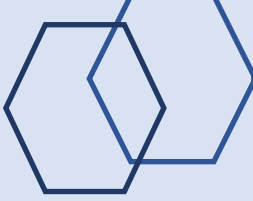
### **Building a Heart-Healthy Generation: Behavioural Determinants and Preventive Cardiology Awareness among Adolescents**

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The danger of cardiac events is no longer exclusive to older age groups in India, due to rising stress levels, sedentary lifestyles, and bad habits. Heart attacks, cardiac arrests, and other severe cardiac disorders are becoming



more common among Indian men and women in their 20s, 30s, and early 40s. Early establishment of unhealthy habits such as poor diet, physical inactivity, tobacco use, and stress can contribute to risk factors like hypertension, high cholesterol, obesity, and atherosclerosis that manifest later in life. Worldwide data indicate that more than 80% of adolescents fail to achieve the recommended levels of physical activity, while sedentary screen time continues to rise (World Health Organization, 2024). India's cardiac care strategy cannot rely solely on reactive interventions. "Prevention is the key". Considering prevention as the key to address cardio challenges, the study is planned and executed in the schools of Varanasi, UP, through a project named "DHADKAN," which was initiated in collaboration with the Department of Cardiology, Institute of Medical Sciences, and Department of Home Science, BHU. It is a cross-sectional quantitative study carried out in Government (KVS, CHS) as well as Private schools of Varanasi district after taking permission from the authority. The studied population consisted of 10th to 12th standard students (adolescents). The purposive sampling technique was employed to collect the data from 700 participants. The session included five interactive techniques: Role play, Panel discussion, Lecture, Demonstration method, and a concluding Question and Answer (Q&A) round session. A self-developed tool was administered for pre- and post-test to determine the effectiveness of the program. The tool was divided into five parts: it covers awareness of the heart's structure, functions, types of heart diseases, healthy eating habits, and lifestyle. The adolescents turn out as the best receptors of knowledge, as their overall gain in knowledge was more than 30%. Still, the programme is continuous and expects to cover more than 2000 adolescents in one year.

### **Cultural Food Practices and their Influence on Nutritional Health Outcomes among Diverse Communities in Mumbai**

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This study examines the relationship between cultural food practices and nutritional health outcomes among individuals in Mumbai. In shaping dietary behaviour, cultural beliefs and traditions play a significant role, as they influence food choices, meal preparation methods, and the way people view traditional and modern diets. This is a cross-sectional study as data is collected through a structured questionnaire at a point in time, consisting of questions to assess cultural dietary habits and frequency of traditional food consumption. Nutritional health outcomes such as body weight satisfaction, self-reported conditions and overall health status are measured in this study. It is found that the cultural practices remain too central to daily eating patterns for many respondents, yet modern lifestyle shifts have led to changes in food preferences among youth at different frequencies. There is an association between cultural dietary practices and selected health indicators, demonstrating culturally rooted behaviors that affect nutrition-related health both positively and negatively. This paper is an attempt to underscore the significance of integrating cultural consideration into nutrition education, health promotion programs and community interventions aiming at improving dietary practices and preventing lifestyle diseases among diverse populations.

### **Transition in Family Structure in India during 1992-2020: A Decomposition Analysis**

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Using pooled data of five rounds of NFHS, India (1992-2020), we examined levels and trends of change in family structure across India and factors contributing. Mean household size reduced from 5.8 (NFHS-1) to 4.5 (NFHS-5) with a decline in (mean) children (0-14) from 2.1 to 1.2. India had 8.8% single-generation households (1992)

(highest: Delhi 15.8%, lowest: Haryana 4.7%), which increased to 14.9% by 2020 (highest-TamilNadu-26.2% and lowest-Jammu&Kashmir-3.8%). During the same period, 3+ generation households reduced from 35.2% to 31.1%. Haryana (39.7%) and Uttar Pradesh (39.6%) had the highest multi-generational households in NFHS-1, while in 30 years, Rajasthan and Haryana (40%) had the maximum. Substantial increase in single-generation households was in scheduled-tribe/other castes, higher education and southern regions, while other indicators witnessed decline. Whereas 3+generation families increased in other regions. Rural, greater wealth, and ownership of agricultural land were other positive predictors. Decomposition analysis suggested similar associations with the change in generations. An increase in single-generation households has implications on healthy and secured ageing.

### Dual Risk Behaviours: The Role of Alcohol Use in Tobacco Cessation Attempts among Indian Adults

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**Background:** In India, tobacco and alcohol use frequently co-occur, creating compounded health risks and presenting challenges for cessation. Alcohol consumption is known to influence tobacco consumption behaviour through increased cravings, impaired self-control, and altered risk perceptions. However, nationally representative evidence on how alcohol use affects tobacco cessation attempts in the Indian context remains scarce. **Objectives:** This study investigates the association between alcohol consumption and tobacco cessation attempts among Indian adults, using data from the fifth round of the National Family Health Survey (NFHS-5, 2019–21). **Data and Methods:** The study analysed a nationally representative sample from the National Family Health Survey (NFHS-5, 2019–21) of current tobacco users aged 15 years and above (N≈88323). The primary outcome was a self-reported quit attempt in the past 12 months. The key explanatory variable was current alcohol consumption (yes/no), with further analysis stratified by drinking frequency. Covariates included age, sex, education, residence, wealth quintile, and region. Logistic regression models were applied to assess associations between alcohol use and quit attempts, adjusting for sociodemographic factors. **Results:** The overall tobacco quit attempt in the last 12 months were 29.2%. Bivariate analysis showed that a lower proportion of tobacco users who consumed alcohol reported quit attempts compared to non-drinkers (26.6% vs. 30.2%;  $\chi^2 = 108.37$ ,  $p = 0.001$ ). The adjusted analysis confirmed that alcohol-using tobacco users had lower odds of attempting to quit compared with non-drinkers (aOR≈0.97, 95% CI: 0.934–1.01). However, the likelihood of quit attempts declined with increasing frequency of alcohol consumption. **Conclusions:** These findings underscore the need to address the interplay between tobacco and alcohol use within control strategies. Tobacco cessation programs could be more effective if they incorporate alcohol-use screening and tailored interventions. Adopting an integrated, dual-behavior approach is essential to reach high-risk populations.

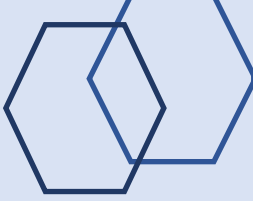
### Bridging the Digital Divide: How eHealth Literacy Shapes Health Behaviour among Indian Youths

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**Background:** As digital platforms increasingly become primary sources of health information, the competencies required to navigate, evaluate, and apply this information have emerged as key determinants of health outcomes. Among youths, higher exposure to digital media does not automatically ensure correct interpretation of online



content, often resulting in unequal engagement with healthy practices. Digital health literacy bridges this gap by enabling informed choices and responsible behaviour. When digital health literacy levels vary, the benefits of digital health innovations are unevenly distributed, reinforcing inequities. Understanding this relationship is therefore vital to achieving equitable health behaviours in the digitally active youth population. Objectives: To assess digital health literacy and its relationship with health behaviours among youths attending a tertiary care hospital. Methods: A cross-sectional study was conducted among individuals aged 16–24 years visiting the Adolescent Centre of Sir Sunderlal Hospital, Varanasi. Participants with access to any digital media were included. Data on socio-demographics, digital health use patterns, and health behaviours were collected using a pre-tested interview schedule. Digital Health literacy was assessed using the 8-item eHEALS scale, a widely used and validated tool in India. A total of 196 individuals were selected purposively. Descriptive statistics and Chi-square test were applied. Results: The majority of participants were females, unmarried, college-going, and owned personal digital devices. Overall, 78.6% demonstrated good eHealth literacy. Smartphones were the primary medium for accessing health information, mainly for managing ongoing problems or seeking information related to known medical conditions. Most participants used multiple online sites for health information search. Digital health literacy showed significant association with device ownership, smartphone handling skills, daily internet use, education level, number of devices owned, and number of health-related gadgets used. Health behaviours such as over-the-counter medicine use, inadequate sleep, alcohol intake, and hygiene practices were significantly associated with eHealth literacy levels.

### Digital Literacy in India: What we know?

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Background: COVID-19 pandemic has brought about numerous transformations in public discourse like never before. Consequently, in today's day-to-day life, there is a marked shift in our preferences, habits and a general way of life, wherein, for instance, physical connectivity is changing to digital connectivity, usual classrooms to digital learning platforms, or even physical payment methods in cash transforming to digital paying options more often than not whenever possible. Objectives: To examine computer skills in India from the National Sample Survey 80th round of the comprehensive modular survey. Data and methods: Data Source: The data used for the analysis is the latest data released from NSS 80th round of the comprehensive modular survey conducted from January 2025 to March 2025. Earlier 78th round data from the multiple indicator survey collected some basic information on computer skills is compared. Information on access and use of computer skills collected from 1,36,937 persons above age 3 years, Information collected on the use of mobile/telephone and desktop/laptop/notebook etc on date of survey. Methodology: Uni-variate and bi-variate techniques is used to find emerging level, trends and pattern of computer skill. Computer skills are analysed between gender, age, and rural-urban. Findings: More than 90 per cent persons reported access and use of mobile while 1/5th Desktop Computer/laptop. The knowledge of simple skill reported in higher proportion.



## Exploring the Factors that Affect Urban Residents' Access to and Use of Online Healthcare Services and Referral Systems during the COVID-19 Pandemic: Implications for Digital Health and Equity

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Health-seeking behaviour is shaped by an individual's accessibility, affordability, and perceived quality of healthcare services, with psychological, socio-cultural, and economic barriers influencing choices. In urban India, the rise of m-health and e-health platforms has created new options for care; however, trust concerns, limited digital literacy, information gaps, and stigma continue to affect adoption. The COVID-19 pandemic intensified inequities and disrupted referral pathways, pushing patients and providers toward virtual consultations, e-prescriptions, and digital follow-up. With routine services halted and mobility restricted, continuity of referrals especially for chronic and high-risk patients was strained. Research shows that telemedicine cannot fully replace in-person care, and challenges persist in referral communication, coordination, and digital triage. This study examines shifts in online healthcare use and referral behaviour among 254 Bengaluru residents before and during the pandemic. Findings show significant increases in online consultations ( $p = 0.018$ ), online medicine purchases ( $p < 0.001$ ), and online diagnostics ( $p = 0.032$ ). Yet referral issues unclear instructions, delays in specialist access, and inconsistent follow-up were frequently reported online, revealing gaps in continuity of care. The presence of a family physician was a key determinant, shaping referral decisions, health-seeking patterns, and provider choices during emergencies. Demographic characteristics such as age, education, income, residential stability, and slum versus non-slum residence were significantly associated with digital health use and referral pathways. Higher-income and better-educated groups adapted more easily to online services, while lower-income households relied on public COVID centres and informal networks, leading to fragmented referral trajectories. The study finds that although the pandemic accelerated digital health adoption, it also exposed weaknesses in referral pathways and continuity of care. Strengthening digital referral systems, integrating family physicians into virtual care, and implementing clear regulatory and privacy frameworks are essential to making online healthcare more equitable and sustainable in urban India.


## Designing Accessible Digital Health Tools for Visually Impaired Persons: A Speech-Based Approach

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Digital health systems are rapidly expanding in India, supported by national initiatives by the Viksit Bharat vision. Programmes such as e-Sanjeevani OPD, PM Jan Aushadhi Yojana, and recent initiatives in organ donation, drug rehabilitation under Nasha Mukta Bharat Abhiyaan, and child health through Mission Indradhanush are trying maximum for the accessibility, affordability, and sustainability of healthcare services across the people. Even though, many digital health tools still inaccessible to people who are visually challenged. Most health-related apps and online platforms rely on screens or small text. As a result, visually impaired citizens often struggle to access crucial health information, for booking a health services, or to navigate safely to reach healthcare facilities. This paper proposes a speech-based system designed to support visually impaired users in both mobility and health-related needs, which can be fixed on their cane. The system uses voice commands and audio response through technologies such as speech recognition, text-to-speech, GPS navigation, and object detection. The health sensors can be integrated to monitor basic health indicators. The tool enables users to receive spoken health related information extracted from the text, access emergency support, and navigate independently without relying on visual interfaces. The proposed system can be developed to understand and speak in multiple Indian languages,



making it more inclusive for regional users. The study also examines how social factors like disability, mobility limitations, low digital literacy, and economic barriers, which affect the health and wellbeing of visually impaired individuals. This work exhibits how assistive technologies can be incorporated in national health missions and strengthen India's goal of Viksit Bharat by promoting "Wellness for All," especially for marginalised populations.

### **A Statistical Analysis of Socio-Demographic and Economic Characteristics in Metropolitan and Non-Metropolitan Class I Cities of Different Regions of India.**


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Urbanization in India exhibits strong regional, economic and socio-demographic disparities while metropolitan cities have emerged as dominant growth poles, non-metropolitan class I cities play a crucial role in balanced regional development. Socio-demographic and economic characteristics play a crucial role in shaping the growth of metropolitan and non-metropolitan Class I cities. According to the 2011 Census, India has 53 metropolitan cities and 416 non-metropolitan Class I cities. This paper statistically examines the effect of socio-demographic and economic on the level and growth of urbanization in Metropolitan and Non-metropolitan class I cities in India. Data for this study is collected from Census of India, 2001 and 2011 for five regions viz. Northern, Southern, Eastern, Western, and Central regions. The 34 variables are studied and grouped into five indices viz., Amenities, Economic Development, Assets, House Quality, and Socio-Demographic by using principal component analysis. To understand regional disparities, Descriptive Statistics and correlation and regression model with and without inclusion of lagged urbanization is done. Analysis shows across 2001 and 2011 census, metropolitan cities consistently outperformed non-metropolitan Class I cities in all five indices, with Northern, Southern, and Western regions showing higher amenities, assets, housing quality, and socio-demographic conditions than Eastern and Central regions, alongside region-specific shifts such as economic improvements from Eastern to Western in metropolitans, rising main-worker shares in Western region cities. All the regions except Western region of metropolitan cities show positive correlation with the urban population for all the variables. Across regions, economic variable dominates in Metropolitan region and socio-demographic variable dominates in non-metropolitan class I cities and inclusion of lagged urbanization in the model shows explanatory power of the model increases. It is concluded that urban policy must be differentiated by city class and region. Strengthening literacy and work participation in non-metropolitan class I cities in India.

### **Interlinkages of History of Migration, Social Network and Well-Being: A Study through the Lens of Life-Course**

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**Background:** Migration is a multifaceted phenomenon intricately interwoven with the fabric of society, and individual well-being across the life course. In the process of migration, the individuals not only shape the landscapes they pass through but also intricate population's networks of social relations along with their employment, social security, family and home making etc. **Objectives:** This study examines the intermediary effect of social networks on well-being considering the migration history, e.g., migration in childhood, adulthood, and later life, controlling for other socio-economic and demographic characteristics. **Data Source:** We utilize the data from the second wave of the WHO-Study on Global Ageing and Adult Health (WHO-SAGE) Survey 2015.



The SAGE is nationally representative and collects comprehensive longitudinal information on the health and well-being of the adult population and the aging process. We applied bivariate and multivariate regression models to assess the effect of any migration history on individuals' well-being at a later age. Econometric Strategy: We employed the SEM-Path regression models to assess the effect of the event of migration in each life stage (such as migration in childhood, in adulthood, and in the later stage of life) on the social networks and the effect of social networks on well-being controlling for all other demographic-socioeconomic and household characteristics. Findings: The findings of this study suggest significant interlinkages of migration history, social network, and well-being across the life course. The finding also highlights the heterogeneity based on rural place of birth, social and religious status, and employment type, significantly determining the individual's overall well-being.

### **Adequacy of Public Health Infrastructure in Growing Cities - Case of Bangalore**

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The standard economic development trajectory of any economy, including the countries of the Global South is expected to see a Lewisian shift, a demographic transition, that involves structural movement as a result of rural-urban migration. Being in the 'urban century', the data shows that though India's 31% of the population currently resides in cities, it is expected to be 40% by 2036 and this growth would continue to occur in cities of developing countries for the next 30 years (World Bank, 2024). This rapid urban transformation requires necessary infrastructure that would create sustainable cities, endowed with urban resilience, in the face of complex and interconnected risks. UN HABITAT (2020) reports that for the first time in human history, majority of world's population live in cities, with urban growth outpacing the governments' ability to build essential infrastructure. This has resulted with one in three urban dwellers residing in slums or informal settlements with the most rapidly urbanizing regions being home to the largest proportion of slums. With this new urban configuration that not only creates abundant opportunities, but simultaneously cities get concentrated with certain risk and health hazards, due to its dense nature, natural, built, social and economic environment. This would mean that urbanisation can be seen as a social and structural determinant of health capable of creating health inequities. The 'Healthy Cities' movement of the 1980's and the recent Infrastructure-Health Nexus framework applied in Brazil, and the phenomena of 'hidden cities' identified by UN Habitat, put emphasis on infrastructure planning as integral part of health system development at the city level. Dense cities remain key settings for health promotion, for which urban governance is imperative. This paper intends to dwell on one aspect, to gauge the adequacy of built environment, especially public health infrastructure in growing city of Bangalore.


### **Environmental Pollution and its Impact on Public Health in India: Systematic Literature Review**

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Background: Air pollution is one of the biggest environmental health challenges in the world and 99 percent of the population is breathing the air level that are higher than WHO recommended levels. This crisis is very common in developing countries where the population is poor and use traditional biomass cooking methods, that expose them to harmful air pollution. Methods: A Systematic review and Meta-analysis were carried out based on the Preferred Reporting Items for Systematic Review and Meta-analysis (PRISMA) guidelines from 13 studies that accessed household air pollution interventions in over 12 countries. The effect size, standard mean difference (SMD) was calculated for net changes in the carbon monoxide exposure, PM2.5 exposure and Endotoxin exposure levels by



using random-effects models. Meta-regression and covariate analyses were performed to explore the influence of confounders on the net pooled effect. Results: The Analysis of Carbon Monoxide showed that the effect size and it was found that the effect of PM<sub>2.5</sub> interventions was significant positive along with heterogeneity among the included studies. The PM<sub>2.5</sub> and CO reduction of Liquefied Petroleum Gas (LPG) intervention were between 60-97% and 57-86% respectively. Air purifiers also prevented COPD exacerbations by 68% among people achieving greater than 40% reduction in pollution. Meta-regression analysis indicated that duration in weeks of included studies was positively related to the effect size. Conclusion: In the household air pollution intervention program, a significant reduction of exposure and significant health outcome is noted. LPG interventions were always better than enhanced biomass cookstoves and portable air cleaners showed a promising potential in vulnerable populations with respiratory problems

### Statistical Analysis of Ambient Air Pollution in Selected Areas of Bengaluru City

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Air pollutants such as PM<sub>10</sub> and PM<sub>2.5</sub> pose severe health threats due to their ability to penetrate the respiratory system, while SO<sub>2</sub> and NO<sub>2</sub> contribute to secondary pollutant formation, smog, and respiratory irritation. CO affects oxygen transport in the bloodstream, leading to acute and chronic health issues. Air pollution has become a critical environmental challenge facing industrial and urban regions in India. Bangalore, one of the country's major metropolitan cities, has experienced rapid industrial growth, urban expansion, and increased vehicular activity, all contributing to deterioration in ambient air quality. The study selects three air pollutant stations of Bangalore city namely City Railway Station, Majestic, H.S.R Layout, Near Central Silk board, NTT, Peenya Industrial Area which are highly polluted as compared to other stations due to industrial activities and heavy traffic emissions significantly impact local air quality, particularly concentrations of particulate matter and gaseous pollutants. The data for the study is collected from KARNATAKA STATE POLLUTION CONTROL BOARD Bengaluru for different pollutants like PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>2</sub> and CO for the period for three months from 1st August 2025 to 31st October 2025. The whole data is categorised into three categories, low pollution, moderate pollution and high pollution using percentiles. The tools used for the study are Diagrammatic and Graphical representation, Descriptive and comparative statistics. The analysis of the study shows level of air pollution shows on an average PM<sub>10</sub> is highest in Silk board followed by next highest is Majestic and least value in Peenya area, the value of NO<sub>2</sub> is highest in majestic area and other two pollutants are similar in all the three areas. On an average all the pollutants are below the standard value. There is positive relation between the different pollutants in all regions except NO<sub>2</sub> and SO<sub>2</sub> of Majestic region.

### Sustainable Water Management Using Rainfall Runoff Modelling: A Geospatial Approach of Udaipur, Rajasthan

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In earth crust, precipitation is one of the dynamic hydrologic cycles. It is an ideal unit of natural resource like water from precipitation. In present days, Remote Sensing technology (RS) in association with Geographic Information system (GIS) has become a very important in innovation of technology in all fields of Engineering. Because these techniques enable us results with high accuracy in less time. Digital Elevation Model (DEM) is one of the most effective models, to delineate stream network map with flow direction, stream density and watersheds.

The rainfall runoff is estimated by using Lacy's and Rational formula. To identify the feasible locations for excess precipitation water to the ground water regime by the help of Rain Water Harvesting systems (RWH), evaluate total recharge potential through these systems and its impact on ground water regime. This research paper provides a scientific approach to arrest the maximum possibility of precipitation runoff during rainfall event and also the conservation of water with ground water recharge, in the area of studied.

### **Climate Resilience and Community Wellness: Integrating Traditional and Modern Health Systems to Address Climate Change Vulnerabilities in Coastal Livelihoods**

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This paper explores the critical intersection of climate change vulnerabilities, coastal livelihoods, and public health by advocating for the integration of traditional and modern health systems to enhance community resilience. Coastal populations globally face escalating risks from climate impacts, including sea-level rise, extreme weather events, and marine ecosystem degradation, which directly compromise both physical and mental well-being, and threaten traditional livelihoods such as fishing and coastal agriculture. The current dominant approach, often reliant solely on modern biomedical systems, frequently overlooks the deep, context-specific knowledge embedded within traditional health practices concerning environmental changes and community adaptation. This research investigates how incorporating indigenous and local ecological knowledge (ILEK) and established traditional healing practices—which are often holistic and preventive—can create a more robust, culturally acceptable, and sustainable health defence against climate stressors. A mixed-methods approach was utilized, combining a systematic literature review on climate-health-livelihood linkages with qualitative case studies of three diverse coastal communities in Kerala. Key findings demonstrate that traditional health systems (THS) offer valuable, low-cost strategies for disaster preparedness, environmental surveillance, and culturally-sensitive mental health support following climate-related trauma. Modern health systems (MHS) provide essential services for acute emergencies, complex vector-borne diseases, and infrastructure development. The study highlights successful models where these practices are formally acknowledged and utilized for primary climate-health defense, followed by MHS support for advanced care. The paper concludes that a truly effective strategy for climate resilience and community wellness in coastal areas requires a synergistic, bi-directional integration of traditional and modern health systems. This approach not only improves health outcomes but also strengthens community cohesion and validates local knowledge, thereby fostering greater adaptive capacity. The paper proposes a framework for policymakers and health practitioners to facilitate this integration, ensuring that interventions are locally relevant, comprehensive, and scalable to protect vulnerable coastal livelihoods in the face of accelerating climate change.


### **Addressing Air Pollution and Climate Change for Wellness in Viksit Bharat: A Social Science Approach to Health Policy and Practice**

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Air pollution and climate change pose growing threats to India's health landscape, influencing disease patterns, living conditions, and overall wellness. Their combined impact is tied to social and economic inequalities, making certain communities more vulnerable than others. In the context of Viksit Bharat, where wellness is viewed as a shared national goal, understanding these challenges through a social science perspective becomes essential. This



study aims to examine how social science insights can guide policies and practices that address environmental risks while strengthening health equity. The analysis considers behavioural responses, socio-economic conditions and institutional arrangements that shape exposure and vulnerability. The findings show that individuals engaged in outdoor labour, those residing near congested urban corridors, and families with restricted access to health services face heightened risks from polluted air and climate-related stress. Local governance systems, when supported with appropriate data and collaborative planning, contribute to early action and targeted intervention. The study concludes that integrating social science knowledge into environmental and health policies is crucial for promoting wellness in a rapidly changing climate. By linking environmental pressures with social determinants of health, the paper emphasizes the need for people-centered strategies that respond to lived realities, strengthen institutional capacity, and support India's long-term development vision. Such approach helps to build healthier, informed and resilient communities, aligning national progress with inclusive well-being.

Key words: Air Pollution, Climate Change, Public Health, Social Determinants, wellness

### **Cultural Change, Gender Roles, and Health Vulnerabilities of Tribal Women in Tea Gardens**

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Economic independence is the key to gender equality and empowerment, echoing the US feminists' emphasis on financial independence for women, which can free women from male dominance. Boserup also argues that employers often prefer men over women, giving women minimal economic opportunities and pushing them into low-income, exploitative work. This paper tries to understand the struggle of tribal women in workspace and familial space, further exaggerated by external factors. The study area consists of five tea gardens from Nagrakata Block in Jalpaiguri district of West Bengal, using quantitative and qualitative data collected in 2008, 2016 and 2024, with narrative inquiry and non-participatory observation. Tea gardens mainly consist of women workers, many of whom belong to tribes. They are engaged in tea leaf plucking, which requires long periods of standing and carrying loads of leaves on their heads and shoulders. Women are underrepresented in tea garden unions and are often unaware of their rights to safety equipment and better salaries. Tea factories also assign tasks based on gender stereotypes such as women's "agile" or "nimble" fingers, reinforcing daily oppression. Within families, gender roles have become more rigid in recent decades. Although tribal communities traditionally shared household work, men's participation is decreasing. Key informants suggest this may be due to poor infrastructure and the growing influence of religious bodies. The affirmation of male supremacy pushes women into subordination both at work and at home. Even though husbands and wives earn similar wages, many women report that men make most financial decisions. Women are increasingly burdened with household tasks, and some face violence or abuse when they resist. The study shows that tribal women face growing challenges in meeting institutional and familial expectations due to the rising load of gendered duties.


### **Mapping the Burden, Risks, and Intervention Strategies of Non-Communicable Diseases among Tribal Youth in South Asia: A Scoping Review**

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Background: Non-communicable diseases cause nearly 75% of global deaths, mainly in South-East Asia. Youth (15-24) from tribal communities face unique health challenges due to social changes, limited healthcare, and isolation. However, research on this issue is limited across the region. Rationale: Previous research mainly focuses



on single countries or adults, leaving gaps in understanding disease patterns among tribal youth. As adolescence is key to developing healthy behaviours, reviewing all available evidence is crucial to inform policies and health initiatives. Objectives: This review compiled and analysed research on NCDs among tribal youth aged in South-East Asia, focusing on burden, risk factors, and prevention and treatment strategies for youth. Methodology: A scoping review followed JBI and PRISMA-ScR guidelines, searching PubMed, Scopus, and Web of Science for studies on NCDs among tribal youth in South Asia. Two reviewers screened and extracted data using standardized forms, and quality was assessed using MMAT. Narrative analysis and thematic synthesis identified patterns and gaps across regions, populations, and diseases. Expert consultation validated the study. Results: The study revealed that tribal youth are significantly more vulnerable to health issues, with 1 in 5 young men at risk of cardiovascular disease, 1 in 5 in some communities experiencing depression, and nearly all youth displaying poor dietary habits. Tobacco and alcohol consumption are also prevalent. Many young individuals live far from healthcare facilities and lack access to services in their native language. Few studies from Myanmar, the Philippines, and Indonesia have examined effective prevention programs for tribal communities, and research is almost non-existent. Discussion: Evidence shows tribal youth face rising health issues influenced by genetics, lifestyle, and limited healthcare. NCDs strategies should incorporate tribal-specific policies, culturally sensitive services with traditional practices, and prevention programs targeting risks. Future research should assess culturally appropriate prevention across all South-East Asian countries and communities.

### **Cultural Determinants of Neonatal Health: A Checklist-Based Assessment of Traditional Care Practices in Tribal Block of Odisha**

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**Background:** Despite state-level improvements in Odisha's Infant Mortality Rate (IMR), tribal districts like Koraput retain significantly high mortality rates. These are often driven by low birth weight and respiratory infections, conditions frequently exacerbated by prevailing cultural determinants. This study assesses traditional home-based practices in the Boipariguda block of Koraput to identify culturally rooted risk factors affecting newborn health. **Methodology:** A qualitative observational study was conducted using structured checklists to document newborn care across seven domains: cord care, bathing, thermal care, early feeding, maternal diet, seclusion, and hygiene. Preliminary data were collected from 12 respondents. Practices were categorized as "Observed" and annotated as "Traditional" or "Modern" to distinguish between harmful and beneficial behaviors. **Results:** Universal adherence (100%) to avoiding prelacteal feeds was observed. However, 100% of observations noted placing newborns near traditional Chullahs (biomass stoves) for thermal regulation, aimed at "flattening the stomach" or "strengthening bones." Harmful cord care practices, including the application of cockroach ash or castor oil, were recorded in 33% of cases. Maternal dietary restrictions—limiting water and food frequency due to fears of indigestion—were prevalent in 83% of responses. Additionally, 33% reported strict seclusion based on notions of ritual impurity. **Conclusion and Policy Implications:** While awareness regarding breastfeeding initiation is high, deep-seated cultural beliefs regarding thermal care and maternal diet continue to compromise health outcomes. The reliance on Chullahs suggests a direct correlation between traditional thermal care and respiratory infections due to smoke exposure, while dietary taboos likely contribute to maternal malnutrition and insufficient lactation. Despite high institutional delivery rates, harmful home-based practices persist. Public health interventions must therefore expand beyond institutional delivery targets to focus on home-based Behavior Change Communication (BCC), specifically addressing the dangers of smoke exposure and nutritional taboos.



# Abstracts

## Papers for POSTER Presentation

### Trends in Avoidable Mortality Over the Life Course in India, 1990-2020

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**Background:** A critical approach to estimating the impact of healthcare interventions on survival and identifying potential areas for improvement is to explore trends and patterns in avoidable or amenable mortality (AM). Such an exploration measures the quality of health service systems by selecting specific causes of death that would not occur in the presence of timely and effective healthcare. This study examines trends in avoidable or amenable mortality (AM) across Indian states from 1990 to 2020, focusing on how healthcare interventions and behaviour-related factors impact survival rates. **Data and Methods:** Using state-level disease prevalence data from the disease burden initiative of the Institute for Health Metrics and Evaluation (IHME) and abridged life tables from the Sample Registration System (SRS), we analyse trends in mortality across various age groups (0-14, 15-49, 50+) and causes of death. These include deaths amenable to medical service, those affected by both medical care and behaviour (e.g., diabetes, ischemic heart disease), self-harm, road traffic accidents, and others. In addition, we calculate the low mortality benchmark based on the lowest observed mortality rate. This determines the benchmark temporary life expectancy, deviation from which indicates a strong potential for improvement. **Results & Conclusion:** Almost all states show improvements in the youngest age group since 1990, approaching the low mortality benchmark. Little improvement is seen in survival among the young adult population (15-49) owing to the egregious increase in ischemic heart diseases, self-harm, and road injuries. The inter-state comparison shows decreasing inequality in young-age life expectancy. Medically amenable causes of death show gradual improvements in most states from 1990 to 2015, bringing them closer to the benchmark in this category. However, large disparities persist between states, and a strong potential for improvements remains.

### Men's Involvement in Birth Preparedness and Postnatal Care: A Study among Young Married Men in Tamil Nadu

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Male involvement in maternal, newborn, and child health (MNCH) has gained growing attention as a key determinant of improved maternal outcomes and safe motherhood practices. In patriarchal societies, men remain central decision-makers in household financial arrangements, healthcare access, and emergency responses. Recognizing this, global frameworks such as the International Conference on Population and Development (ICPD, 1994) and WHO recommendations (2015) have emphasized the inclusion of men in reproductive and maternal health. This study examines the level of men's involvement in birth preparedness and postnatal care, identifying the socio-economic and demographic factors shaping their participation in Chidambaram Taluk of Tamil Nadu. A cross-sectional survey was conducted among young married men using a structured interview schedule. Composite indices were developed to assess knowledge on antenatal, natal, and postnatal care, alongside practices related to birth preparedness. The findings indicate that although most men supported institutional delivery, financial arrangements, and transportation, knowledge related to postnatal care remained inadequate. While 71 percent of respondents correctly understood the postnatal period and 91.5 percent knew normal birth weight, only 57.5 percent were aware of the correct initiation of breastfeeding. Approximately 54.8 percent had "less knowledge" of

postnatal care, revealing significant information gaps. The study further shows that most postnatal health issues were treated in government hospitals (75 percent), and 70.7 percent of husbands accompanied their wives for treatment. However, time constraints and work pressure were major reasons for non-accompaniment. Educational attainment, occupation, and access to health information emerged as important factors influencing involvement, with non-agricultural workers displaying significantly higher knowledge levels. The study concludes that enhancing male-focused reproductive health education and promoting couple-based counselling can significantly improve birth preparedness and postnatal outcomes. Strengthening male engagement is essential to ensure timely healthcare utilization and reduce complications during the postnatal period.

### Understanding Insomnia in Rural Older Women: Insights from Longitudinal Aging Study in India

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**Background and Objectives:** Sleep is an essential human need. Maintaining sufficient and good-quality sleep is crucial for supporting health, enhancing well-being, and improving the overall quality of life, particularly among older adults. The present study investigates the factors associated with insomnia among women living in rural India. **Data and Methods:** It draws on the most recent data from the Longitudinal Aging Study in India, 2017-18, to conduct this analysis. For the analysis 20,674 older women from rural area were selected. To identify key factors associated with insomnia among older women in rural areas, we conducted multivariate analyses using a binary logistic regression model. **Findings:** The study finds that 42.8% of older women living in rural areas reported experiencing insomnia. While the prevalence of insomnia varies across states, it was highest in West Bengal and lowest in the north eastern states. Several factors were found to be significantly associated with insomnia among this population, including older age, food insecurity, feelings of loneliness, lack of safety at home, experiences of discrimination, the presence of chronic illnesses, difficulties with activities of daily living, impaired distant and near vision, symptom-based pain, and depression. **Conclusion: Policy Implications:** To support healthy aging and advance the Sustainable Development Goals for universal health, it is vital to raise awareness about insomnia risks and implement targeted preventive strategies, including routine screenings and disease-specific interventions, for this vulnerable population.

### Socio-Economic Determinants and Housing Arrangement Disparities in Depression Among the Elderly: A Cross-Sectional Comparative Study

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**Background:** The ageing population in India is increasing rapidly, bringing new concerns for public health, especially in the area of mental wellbeing. Depression is one of the most common conditions in later life and is shaped by age, gender, socio-economic circumstances, and living arrangements. As more older adults move from traditional family care to institutional old age homes (OAHs), there is a need to understand how these settings influence their mental health. **Objective:** This study examined the prevalence of depressive symptoms among older adults and explored how socio-economic factors and housing arrangements (family settings versus OAHs) are associated with depression. **Methods:** A cross-sectional comparative study was conducted among 364 individuals aged 60 years and above, comprising 182 participants from family settings and 182 from OAHs. Depressive symptoms were measured using the Center for Epidemiologic Studies Depression Scale (CES-D). A structured

questionnaire captured demographic and socio-economic information. Chi-square tests assessed bivariate associations, and binary logistic regression identified independent predictors, expressed as adjusted odds ratios (AORs). Results: The overall prevalence of depression was 42.3 percent. Older adults residing in OAHs had a significantly higher prevalence of depressive symptoms (54.4 percent) compared to those living with families (30.2 percent) ( $p < 0.001$ ). After adjustment for confounders, living in an OAH was associated with 2.45 times higher odds of depression (AOR = 2.45, 95% CI: 1.22–4.92). Older age groups (70–79 years: AOR = 2.09; 80+ years: AOR = 2.67), female gender (AOR = 1.96), and moderate living conditions (AOR = 2.38) also showed significant associations. Being widowed appeared protective when compared to being never married (AOR = 0.30). Conclusion: Depression is common among older adults, with those living in OAHs facing a greater burden. These findings highlight the need for mental health support within institutional care and targeted interventions for high-risk groups.

### **Ageing, Living Arrangements and Self-Reported Health: Evidences from Four Rounds of the National Sample Surveys**

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Health is a crucial part of quality of life at all ages. Its salience is felt even more at older ages. Self-reported health is recognised as an indicator of the overall health of an individual. Health is influenced by the environment, which includes the socioeconomic environment. Therefore, health has its social determinants. Living arrangements are one of the prospective social determinants of health. The present study attempts to explore the links between health and its social determinants in the context of older adults in India. For this purpose, the self-reported health is taken as a measure of the overall health status of an individual. Living arrangements are included as one of the social determinants. The information provided by various rounds of the national sample surveys, namely the 52nd, the 60th, the 70th and the 75th rounds, is utilised for this purpose. The self-reported health is categorised into three categories, namely, SRH 1 (excellent / very good), SRH 2 (good/fair) and SRH 3 (poor) in the order of declining health status. SRH1 and SRH 2 are relatively better states of health. The changes in the distribution of self-reported health are studied over time. Further, the distribution of self-perceived health for each living arrangement is studied for changes taking place over time. A multinomial logistic regression model is utilised to explore the association between self-reported health and living arrangement while controlling for time. Findings indicate a significant association between the self-perceived health status and living arrangements of the older adults. Findings indicate that living with a spouse or living with a spouse and other members at older ages makes older adults more likely to report better states of health when compared to those living alone.


### **Community Based Awareness Pathways and Rural Health Insurance Enrolment: A Social and Behavioural Study towards Wellness of All**

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Rural families often find it hard to cover the costs of illness. Many do not fully understand how health insurance works, or they do not trust the options available to them. In West Bengal, the state has expanded programs, especially Swasthya Sathi, but the actual acceptance and use of these initiatives in areas like South 24 Parganas remain moderate. Past reviews of government insurance programs have shown that less than half of the eligible population in this district has enrolled. This highlights gaps in awareness, perceived usefulness, and understanding



of how to access insurance benefits. These problems are made worse by difficult terrain, financial issues, and communication efforts that often do not meet the needs of rural communities. This study aims to develop a consumer-based awareness model that captures the behavioural and informational factors affecting health insurance uptake among rural residents of South 24 Parganas. A mixed-methods approach will help us understand what people know, how they feel about insurance, the obstacles they face during enrolment, and how they use the schemes after enrolling. The insights from this research will aid in creating a practical model to improve awareness, build trust, and encourage broader acceptance of health insurance. The results are expected to help policymakers, frontline health workers, and insurance providers design interventions that better respond to the everyday challenges faced by rural households. This will ultimately enhance financial protection and access to healthcare in the region.

## Climate Change and Mental Health Issues in South Asia: A Systematic Review

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**Background:** Over the years, worsening climate change and its ill effects have become a greater challenge to humanity. Extreme weather events such as heatwaves, drought, floods, exceptionally rising temperatures, deglaciation, etc., have a higher potential to negatively impact mental health. These climatic vagaries affect developing countries very badly. In the given context, this study aims to assess the impact of climate change on mental health in South Asia. **Methodology:** Our study is based on a systematic review of existing studies. The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines were adhered to during this study. We have obtained the research articles from databases such as Scopus, PubMed, and ProQuest, published between 2000 and 2024, based on South Asian countries. A total of 107 articles were identified, and after inclusion and exclusion criteria, 26 articles were selected for qualitative synthesis for this study. **Key findings:** Our findings indicate a strong relationship between climate change and mental health. Climate change causes extreme weather events, which impacts mental health negatively, with effects being more severe for women and older adults. Studies included in our analysis indicate that the most common mental disorders caused by climate change are anxiety, sleep disorders, post-traumatic stress disorders and depression. Additionally, long-term climate change, such as slow and gradual increases in temperature and rising sea levels, affects mental health slowly and indirectly, which is observed among people exposed to those events with a time lag. Apart from that, Climate events hit unorganized workers hardest by disrupting their livelihoods. **Conclusions:** Climate change severely affects low- and middle-income countries, with informal workers, women, and older adults being most vulnerable. More South Asian research on climate-related mental health impacts is needed to understand complexities and enable faster, protective responses during extreme events.


## Prevalence and Risk Factors of Abnormal Pulse Rate Patterns among Indian Adults Aged 45 Years and Above: Evidence from the Longitudinal Ageing Study in India (2017-18)

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**Background:** Abnormal pulse rate patterns, such as bradycardia and tachycardia, may often lead to cardiac rhythm abnormalities. This often leads to silent, life-threatening consequences among older adults, including falls, syncope, and other cardiovascular events. This study aimed to assess the prevalence and risk factors of abnormal pulse rate patterns among older adults in India. **Methods:** After removing participants with missing information,



this study utilized data from 50786 participants collected during the first wave of the Longitudinal Ageing Study in India (LASI). Weighted prevalence and 95% confidence intervals of bradycardia and tachycardia were obtained. Additionally, bivariate and multivariable associations were obtained to assess the risk factors of abnormal pulse rate patterns. Result: The prevalence of bradycardia and tachycardia was 2.49% and 5.95%, respectively. The prevalence of bradycardia was higher among males (3.79%), whereas tachycardia was more common among females (7.04%). Age, sex, diabetes, lung disease, poor cognition, and alcohol consumption were associated with abnormal pulse rate patterns. Discussion: This finding emphasizes routine pulse check screening among older adults to identify individuals who may require further evaluation, particularly those with chronic conditions like lung disease and diabetes.

### **Undiagnosed and Uninformed: Hypertension and Information Asymmetry among Older Adults in India**

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Background: Hypertension is a leading risk factor for non-communicable diseases, yet its detection and management remain inadequate in low- and middle-income countries. Reliance on self-reported data creates information asymmetry a mismatch between individuals' awareness of their health and their actual condition. In health care, such asymmetry can also arise when doctors fail to detect or communicate diagnoses effectively. This study examines the extent and determinants of hypertension-related information asymmetry in India. Methods: Data come from Wave 1 of the Longitudinal Ageing Study in India (2017–19), a nationally representative survey of adults aged  $\geq 45$  years (N=66,662; weighted N $\approx$ 233 million). Hypertension status was assessed using both self-reports and biomarker-based blood pressure measures. We estimated diagnostic accuracy (sensitivity, specificity, Kappa, ROC/AUC) and created an information asymmetry measure (concordant, asymmetric). Cross-tabulations examined patterns by hypertension status and doctor consultation. Results: Self-reports substantially underestimated hypertension prevalence (sensitivity 38.4%, specificity 77.6%, AUC=0.58; Kappa=0.166). Among hypertensives, only 36% were concordant, while 64% fell into the asymmetric group, compared with 78% concordance among non-hypertensives. Weighted estimates suggest  $\sim$ 45 million hypertensives were misclassified. Doctor consultation did not reduce this gap: asymmetry was higher among those who consulted doctors (36%) than those who did not (32%), and more than half of all asymmetric cases occurred among doctor-consulting patients. Conclusions: Hypertension surveillance in India is undermined by widespread information asymmetry, both between individuals and biomarkers and between patients and providers. Even after healthcare contact, many hypertensives remain undiagnosed or uninformed, reflecting missed opportunities for detection and communication. Strengthening routine blood pressure screening, improving provider training, and enhancing risk communication are essential to bridging this knowledge gap and empowering older adults in NCD management.

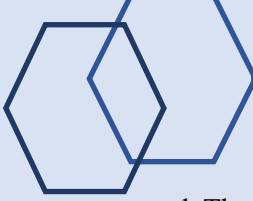
### **A Study of the Prevalence of Depression among Students Studying in the Science Stream**

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Mental health condition & Depression is a serious mental condition in which a person feels very sad, hopeless, lack of energy and loss of interest in life for a long time. This is a condition that affects thoughts, actions, behaviour and daily life. Here the main purpose of our research was to study the prevalence of depression in undergraduate and postgraduate students studying in the field of science stream. In this research, a 2x2 research design has been



used. The total of 80 people were taken as a sample, and the Beck Depression scale developed by Dr. Aaron Beck was used to collect data in the present study. The reliability of this questionnaire is 0.86. The entire data was analysed using the ANOVA statistical method. The conclusion of the results was clear that there was not significant difference between the two groups. A Gujarati translation of the questionnaire for measuring depression among undergraduate and postgraduate students studying in the science stream was done by the Psychology Department of Sardar Patel University in 1990.

### **Bio-social Factors and Neonatal Mortality among Vulnerable Tribe of India**

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India has seen a significant downward trend in its neonatal mortality rate, declining from 26 per 1,000 live births in 2014 to 19 per 1,000 live births in 2022. However, the trend is higher in tribal communities 41 per lives birth. Using purposive sampling technique, the current study aims to explain the interconnectedness of bio-social factors and neonatal mortality in tribal community of India. Sixty-one ever married tribal mothers were interviewed and it is found a total 72 neonatal deaths they have experienced in till date. The study found that lower birth weight, prematurity, infection, including asphyxia and hypothermia, and limited access to quality healthcare, socioeconomic factors, geographical isolation and traditional cultural practices, taboos related to new birth are important contributing factors for neonatal death in the studied tribal community.

### **Assessment of Multidimensional Vulnerability Index among Paudi Bhuiyan Tribe of Sundergarh District, Odisha**

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The National Advisory Council of the Ministry of Tribal Affairs, Government of India, recommended mapping of Particularly Vulnerable Tribal Groups (PVTGs) in Western Odisha to address their unique developmental issues. These groups, known for their cultural heritage and traditions, face complex vulnerabilities such as low literacy, economic underdevelopment, and declining population growth. To understand the vulnerabilities of PVTGs of Western Odisha a Multidimensional Vulnerability Index (MVI) has been derived to identify the most vulnerable dimensions. The present research has focused on construction of vulnerability index of livelihood, nutritional status, health, education, standard of living of Paudi Bhuiyan tribe of Sundergarh district. For the present research, we have applied a structured schedule during the months of March and August, 2025 and 318 households were selected for the study. All the collected information were processed, coded and ranked using SPSS and calculated the Composite Vulnerability Index. The vulnerability index for livelihood found as 0.78 in 0-1 scale, which represents that the tribe is highly vulnerable in their livelihood pattern, as they mostly depend on forest for food and practices shifting cultivation on hill slopes with poor level of productive asserts. Similarly, on education, the vulnerability index resulted as 0.85, which indicates that Paudi Bhuiyan people are in highly vulnerable toward education as their literacy level is very low and the region do not have proper schooling facilities and high dropout rate is also very high. On health and nutritional status, the result of composite index is 0.95, which mean that tribe is highly vulnerable in term of health status due to limited health care access and health infrastructure in the region. Similarly, the standard of living index also found very highly vulnerable (0.80) among the tribe as the region have inadequate basic amenities and infrastructure.



## **Home Was Not a Place of Comfort": A Narrative Inquiry into Childhood Exposure to Intimate Partner Violence among Young Badaga Men**

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**Background:** Intimate Partner Violence witnessed in childhood constitutes a significant form of maltreatment with lasting psychosocial consequences. While substantial research has examined women's and mixed-gender perspectives, young men's narratives- especially within indigenous contexts – remain underexplored. In patriarchal societies like the Badaga community in South India, cultural norms of masculinity often suppress disclosure, leaving these experiences undocumented and their developmental implications unexamined. **Rationale and Objectives:** This study sought to understand how unmarried Badaga males aged 18-25 years construct meaning around their childhood exposure to IPV and how these interpretations shape their emerging adulthood experiences. **Methods:** Fourteen unmarried Badaga males from the Nilgiris district, Tamil Nadu were recruited through respondent-driven sampling. Narrative inquiry methodology was employed with in-depth interviews allowing participants to situate childhood adversity within their broader life trajectories. Labov's structural narrative framework - comprising Abstract, Orientation, Complicating Action, Evaluation, Resolution, and Coda – to examine key components of their story from introduction to the conclusion. **Key Findings:** Analysis identified six interrelated narrative dimensions: emotional expression and suppression, family relational patterns, traumatic exposure experiences, identity formation processes, healing trajectories, and present-day integration. Young men predominantly narrated their experiences through emotional restraint, premature assumption of adult responsibilities, and continuous negotiation of masculine identity against cultural expectations. While some participants demonstrated adaptive responses, these patterns often facilitated maladaptive coping and relational difficulties in intimate partnerships. **Discussion:** The findings illuminate how violence exposure, cultural scripts, and personal meaning-making co-produce developmental trajectories for young indigenous men. Participants' sense-making processes reflected tension between cultural prescriptions of stoicism and authentic emotional functioning. These narratives underscore the necessity for culturally-informed, gender-sensitive interventions that recognize how patriarchal norms simultaneously enable survival strategies and constrain psychological wellbeing and among young indigenous males exposed to childhood family violence.

## **Child Health Inequalities in India: Exploring the Road Travelled Over Decades Using Bibliometric Analysis**

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This study aims to systematically map and analyse research on child health inequalities in India over thirty-five years (1991-2025) through a bibliometric analysis. Data were extracted through the Web of Science database. The initial search provided 300 relevant results, of which 294 were included after excluding non-English and retracted papers. Biblioshiny and VOS viewer software were employed to analyse publication trends, major research themes, and thematic patterns. Key findings reveal that since 1991 research on child health inequalities has increased considerably, with sharp rise in annual scientific research in recent decade and an annual growth rate of 12.15%, along with global agendas like the MDGs and SDGs. The recent studies have focused on public and mental health inequalities, whereas earlier studies focused on mortality and malnutrition. Inequalities persist despite government initiatives, and consistent determinants highlight limited policy effectiveness. A strong link between child and elderly health disparities is also found.



## Migration in Later Life and its Association with Cognitive Impairment among Middle-Aged and Older Adults in India

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**Background:** Migration in later life is an emerging concern, especially in India, where aging and internal migration are significant trends. The study aims to examine the relationship between migration in later life and its association with cognitive impairment in India. **Methodology:** This study utilizes the data from the Longitudinal Ageing Study in India (LASI) Wave 1 (2017-18), a nationwide, large-scale survey on aging and health with a sample of 66496 middle-aged and older adults (aged 45 and above). Cognitive impairment has been taken as an outcome variable, and later life migration has been taken as the main explanatory variable (a migrant who changed their place of residence after the age of 50 years). **Findings:** The prevalence of cognitive impairment among middle-aged and older adults was approximately 10%. Late-life migrants exhibited a higher prevalence (13.1%) compared to non-migrants (7.3%). Logistic regression analyses adjusted for socioeconomic and demographic factors revealed that late-life migrants had a 44% greater likelihood of cognitive impairment than non-migrants (AOR: 1.44; 95% CI: 1.18–1.75). **Conclusions:** The findings indicate that late-life migrants are at a higher risk of cognitive impairment compared to non-migrants. This study can be helpful for policymakers to draw a special focus on making targeted plans and programs for late-life migrants.

## Climate Shocks and Child Health: The Impact of Drought on Undernutrition in Rural India

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Climate change has intensified drought frequency in rural India, posing substantial risks to child nutrition. Using anthropometric data from over 150,000 children under five from NFHS-5 (2019–21) and drought exposure derived from the Standardized Precipitation-Evapotranspiration Index (SPEI), this study assessed how cumulative lifetime drought exposure affects stunting, wasting, and underweight. Logistic regression models adjusted for demographic and socioeconomic factors showed that even a single drought event increased the odds of stunting by 25% (OR 1.25; 95% CI 1.21–1.29) and underweight by 13% (OR 1.13; 95% CI 1.09–1.17), while being associated with 21% lower odds of wasting (OR 0.79; 95% CI 0.76–0.83). Repeated exposure magnified risks: four or more drought events increased the odds of stunting by 32% (OR 1.32; 95% CI 1.20–1.30) and underweight by 20% (OR 1.20; 95% CI 1.10–1.20). Socioeconomic resources strongly moderated these effects; children of educated, financially secure mothers had 27% lower odds of stunting (OR 0.73; 95% CI 0.68–0.78), 41% lower odds of wasting (OR 0.59; 95% CI 0.54–0.64), and 37% lower odds of being underweight (OR 0.63; 95% CI 0.59–0.67), even in drought-affected areas. In contrast, children of poor, uneducated mothers in drought-prone regions had markedly elevated risks, including 36% higher odds of stunting (OR 1.36; 95% CI 1.28–1.45) and 17% higher odds of underweight (OR 1.17; 95% CI 1.10–1.25). The findings underscore drought's lasting impacts and the protective role of maternal education and economic security, emphasizing the need for targeted, climate-responsive interventions.



## Measuring Multidimensional Energy Poverty in India: New Insights from NFHS-4 and NFHS-5

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Energy plays a critical role in socioeconomic development by enabling households to fulfil their basic energy needs. Energy poverty remains a universal challenge with far-reaching consequences for health, education, and overall quality of life. The definition of energy poverty and its measurements can vary across different methodologies. However, the Multidimensional Energy Poverty (MEP) approach has emerged as a widely applied comprehensive method for assessing the incidence and severity of energy deprivation at the household level. The present study draws on data from National Family Health Survey (NFHS) 4 (2015-16) and NFHS-5 (2019-2021) to examine the evolving patterns of MEP in India. Using appropriate theoretical backgrounds and robust econometric techniques, the analysis shows a notable decline in the incidence of MEP over time. The sensitivity analysis reveals that variations in weightage method and deprivation cut-offs led to minor variations in the MEP index. The study highlights that over the time period, the use of modern energy services, including clean fuels and household appliances, has increased, however overall significant energy deprivation persists, particularly in eastern and central regions of India. Additionally, results indicate that there is a clear shift in India's household energy transition from conventional energy uses towards modern and sustainable energy sources. Overall, the present provides important insights for public policy and contributes substantively to the growing body of literature on MEP at both national and international levels.

## Exploring the Role of BMI and Secondary Infertility among Indian Women

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Despite the increasing awareness of fertility, infertility is still a big problem around the world. The incidence of infertility has significantly increased in both developed and developing countries. However, among various household and individual-level factors, Body Mass Index (BMI) has an adverse association with reproductive health. Using data from the National Family Health Survey-5 (NFHS), this study investigates the association between BMI and secondary infertility while adjusting for other covariates. The study included 1,26,174 married women aged between 20-49 years, selected from 6,01,635 women. Along with Descriptive statistics, bivariate analysis, and the chi-square test were used to determine significant changes. A multivariate regression model was used to analyse the relationship between secondary infertility and various socioeconomic groups lifestyle factors, and reproductive behaviours. Furthermore, an interaction model was applied to show the moderation effect between BMI and women's education. The findings show that overweight people exhibited a significant incidence of secondary infertility 27.90%, whereas underweight people had a low prevalence 21.15%. According to multivariate regression analysis, secondary infertility is more prevalent among overweight individuals (AOR=1.10; CI: 1.07-1.14) as compared to underweight individuals (AOR=0.99; CI:0.95-1.04). The findings suggest that significant interaction effect was observed between underweight and higher education (AOR=1.51; CI: 1.31-1.74) in contrast to overweight and higher education (AOR=0.45; CI: 0.40-0.50). The present study highlights that women who experience secondary infertility often show significant deviation from the normal BMI, while prioritizing lifestyle modification is crucial for the efficient management of secondary infertility.



## Socioeconomic Disparities and Healthcare Access in Kathautia's Coal Mining Belt, Palamu, Jharkhand

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Coal mining regions in India continue to exhibit persistent socio-economic deprivation and limited healthcare access despite contributing substantially to national energy needs. This study examines the multidimensional impacts of the Kathautia Open Cast Coal Mine (KOCCM) on the socio-demographic profile and healthcare utilisation patterns of six affected villages in Palamu district, Jharkhand. Using a multistage probability sampling design, primary data were collected from 363 households across Sakhui, Sika, Garikhas, Kathautia, Kajri, and Batsara villages. The analysis highlights that the affected population is predominantly middle-aged, socioeconomically vulnerable, and largely dependent on informal or agriculture-based occupations. Scheduled Tribes (41.11%) and Scheduled Castes (28.89%) constitute the majority, reflecting the disproportionate impact of mining on historically marginalized groups. Healthcare access remains critically limited. Only 40% of respondents reported using the primary health centre, with nearly half living 5–10 km away. Mining-linked health interventions were sparse: 66.57% reported no community health programmes, over 80% had not attended health camps, and only 2.48% received health insurance from KOCCM. While 78.51% received free medicines, this support was not complemented by systematic preventive or promotive care. Sociodemographic disparities were evident, with higher service utilisation among males, better-educated groups, economically better-off households, and certain villages such as Batsara and Kajri. Findings underscore that coal mining has not translated into improved healthcare infrastructure or livelihood opportunities in the region. Instead, environmental degradation, livelihood insecurity, and inadequate health provisioning have deepened vulnerabilities, particularly for tribal and low-income households. The study emphasises the urgent need for strengthened local health systems, corporate accountability in mining operations, and inclusive policy frameworks aligned with the Sustainable Development Goals to ensure equitable development in resource-rich but underserved regions.


## Association Between Minimum Dietary Diversity and Anthropometric Failure Among Children Aged 6–23 Months in Odisha

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Adequate dietary diversity during the complementary feeding period (6–23 months) is critical for optimal child growth and development. Minimum dietary diversity (MDD) during the complementary feeding stage is crucial to prevent growth from slowing down, but many children in Odisha don't receive a varied enough diet. However, many children in India, particularly in resource-constrained states and districts, fail to achieve Minimum Dietary Diversity (MDD), contributing to persistent undernutrition. This is because of structural barriers like poverty, lack of access to food, and social disadvantage. This study examines the prevalence of minimum dietary diversity among children aged 6–23 months across India, with a specific focus on Odisha. Children aged 6–23 months represent one of the most vulnerable populations globally, entering the complementary feeding phase when breast milk alone no longer provides sufficient energy and micronutrients for optimal growth and development. Adequate quality and quantity of complementary foods, which are diverse, nutrient-dense, and age-appropriate, are essential for preventing malnutrition and enabling catch-up growth. The state-level prevalence of MDD, food group consumption patterns, and anthropometric failure will be estimated using descriptive statistics. The association between MDD and the odds of stunting, wasting, and being underweight will be measured using multivariable logistic regression models that account for child, maternal, and household covariates. This study will help Odisha's



nutrition programs, such as ICDS, Poshan Abhiyan, and state nutrition missions, make targeted changes to improve complementary feeding counselling, diversify food baskets, and focus on the most vulnerable communities by providing state-specific evidence on how dietary diversity affects child growth.

### **Intersecting Determinant of Child Mortality: The Role of Health Financing and Government Effectiveness in Developing Countries**

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Ensuring sustainable development in health indicators remains a persistent challenge for developing countries, this is mostly because they don't have enough resources and insufficient health infrastructure. Several countries have depended on foreign financing to tackle their health issues. In this context, health aid serves as a significant tool in helping developing nations to reduce health issues and improve child survival rates. This study examines the effect of health aid and Domestic Government Health Expenditure (DGHE), Financial Development Index (FD), and Government effectiveness (GE) on the Under-5 Mortality Rate (U5MR) across 99 developing countries from 2002 to 2023. The study utilises panel data and employs robust econometric techniques, including Driscoll-Kraay estimators and the Generalised Method of Moments (GMM). The findings reveal that both health aid and DGHE are negatively related to U5MR, suggesting both play a role in reducing child mortality. However, the effect of health aid is modest, whereas FD and GE are observed to have a positive impact on U5MR. Moreover, the interaction effect of health aid and DGHE is found to increase the U5MR. This study highlights the importance of optimizing resources allocation, applying multisectoral approaches, and enhancing domestic health budget commitment to accelerate progress towards the Sustainable Development Goals (SDGs) 3.2 target.

### **Multimorbidity and Socioeconomic Status and Healthcare Utilization among Older Adults in India**

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**Objective:** In this paper, we examine the association between multimorbidity and risk of Hospitalisation among older adults in India and the role of economic status on the association. **Methods:** Nationally representative data from the first wave of the Longitudinal Ageing Study in India (LASI) was analysed. Multimorbidity variable was generated by combining 9 self-reported diagnosed chronic diseases and categorised as no disease, one disease, two diseases, three or more diseases. Bivariate analysis was used to understand the sample characteristics and prevalence estimation. Multivariable logistic regression was conducted to examine the association between multimorbidity and healthcare utilization. Further, interaction analyses were performed. **Results:** Overall, 8% of older adults aged 60 and above reported hospitalisation in last one year. The proportion of hospitalisation was 5% among older adults with no chronic disease, and it has increased to 18% among older adults with 3 or more chronic diseases. Regression results suggest that participants with 3 or more chronic diseases are three times more likely to be hospitalised in last one year (OR=3.10, 95% CI 2.682 3.591) than older adults with no chronic disease. The role of economic status is also notable where the education shows protective role in hospitalisation. The association between multimorbidity and wealth quintile is positive. **Conclusions:** Public health measures targeting older adults with multimorbidity and in low economic status are important.

## Understanding Undernourishment in South Asia: The Role of Political Stability

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Attaining the United Nations' Sustainable Development Goals (SDGs) 2.1, which focuses on nutritious and safe food for all, remains a major challenge due to the slow pace of reduction in undernourishment across South Asia countries. Home to a significant share of the world's population, South Asia continues to face considerable challenges in ensuring its citizens have adequate access to nutritious food. Many countries in the region face persistent socioeconomic and political challenges that hinder progress toward achieving a society free from undernourishment. In this context, the present study empirically examines the role of political stability on undernourishment, controlling crucial factors such as food production, the share of dietary energy supply derived from cereals/roots/tubers, inflation, population, and unemployment, in six South Asian countries from 2001 to 2021. Considering the problems of cross-sectional dependency, heteroscedasticity, and autocorrelation, the Panel-Corrected Standard Error model has been employed for the empirical analysis. The findings reveal that political stability can curb the prevalence of undernourishment. Moreover, food production can reduce undernourishment. However, inflation, population, and unemployment contribute to an increase in undernourishment. Addressing undernourishment in South Asian countries requires a coordinated and inclusive approach, considering the interconnectedness of inflation, population, and unemployment issues to achieve sustainable development goals

## Passive Euthanasia and Autonomy at the End of Life: A Qualitative Enquiry

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Historically, death was a communal, intimate, and ritualised process, which has increasingly moved into institutional spaces governed by biomedical authority. In contemporary India, dying rarely unfolds within the social space of home. It is mediated through clinical decision-making, and life-prolonging technologies. Scholars argue that such medicalisation of death has led to overtreatment, and the loss of *ars moriendi*. The Lancet Commission on the Value of Death (2022), suggests that recent approaches to end-of-life care have been excessively technocratic. Passive euthanasia, including the use of advance directives and living wills has emerged as an ethical and legal mechanism affirming the right to refuse futile treatment and reclaim bodily autonomy. Although passive euthanasia is legally validated in India (2018), few empirical studies have investigated why people choose passive euthanasia and how autonomy is negotiated within medicalised settings. This qualitative, exploratory study begins to fill this gap. Individuals who signed living wills expressing their autonomy and clinicians were sampled purposively were interviewed using a semi-structured guide. Three interrelated findings emerged from the thematic analysis: first, autonomy is relational rather than purely individual and is shaped by familial norms, obligation and collective decision-making; second, anticipative passive euthanasia is often motivated by the intent to avoid catastrophic healthcare expenditure and hence reflects the moral economy of illness and care; and third, participants expressed a preference for a social death, one steeped in dignity, presence and ritual-rather than prolonged clinical intervention. The paper argues that passive euthanasia in India represents neither full demedicalisation nor a simple relinquishing of institutional authority. Rather, it signals a renegotiation of agency, meaning and ethics at the end of life. This research contributes to critical debates on autonomy, care and the future of dying within India's evolving health systems through its foregrounding of lived experiences.



## Understanding Healthcare Expenditure Dynamics Across the Lifecycle in India: Evidence from the National Transfer Accounts Framework

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**Background:** The rising costs of healthcare in India remain a significant problem, as they impose a substantial financial burden on households and the country's economy. This study aims to investigate the evolving patterns of healthcare expenditure across different age groups, with a focus on variations by age, gender, and place of residence. **Data and Methods:** This study utilizes data from the two most recent rounds of the National Sample Survey Organisation (NSSO) on Health (2014 and 2017-18), National Accounts Statistics (NAS), and the World Population Prospects 2022. Using the National Transfer framework (NTA) lifecycle approach, this paper analyses healthcare consumption across age and gender, while regression techniques are utilized to further disaggregate healthcare expenditure across age groups. **Results:** The findings reveal that the total per capita healthcare spending increased from 693 INR in 1993-94 to 3866 INR in 2016-17. Public health spending as a percentage of GDP was 0.96% in 1993-94 and rose to 1.58% in 2016-17. Private health spending constituted 1.47% of GDP in 1993-94, rising to 2.51% in 2016-17. The NTA framework reveals that healthcare spending rises with age, being substantially higher among the elderly compared to children and the working-age population. Moreover, gender-wise analysis indicates that males generally incur higher healthcare expenditure than females, except during the reproductive age span, when women's healthcare spending increases due to maternity and related health needs. **Conclusion:** The study highlights a substantial rise in both public and private healthcare spending in India over time. The lifecycle deficit analysis reveals that healthcare expenditure intensifies with age, particularly among the elderly. Gender disparities persist, with males generally spending more, except during women's reproductive years, underscoring the need for age- and gender-sensitive health financing policies.


## Lived in Experience of Fathers as Caregivers of Autistic Adolescents Girls in Kerala

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Caregivers as fathers of autistic adolescent girls experience several challenges and it involves family dynamics and role adaptation. This study highlights the father's experiences as the primary caregiver amid the maternal caregiving burden. Fathers encounter financial strains, emotional meltdown and social isolation while managing the adolescent's aggressive behaviour and communication needs. The present study aimed to obtain information by considering the paternal experiences using a qualitative approach to explain the father's perception of problems in their girl children with ASD. This study addressed the three research questions: 1) What are the major challenges faced by fathers' experience raising their children? 2) What are the changes happening fathers after the diagnosis of ASD. 3) What are the methods they have taken to cope with the sudden needs? The study was performed on ten fathers of autistic adolescent girls aged between 10-18 selected via purposive sampling. Data were collected through semi structured interviews. And all the responses were recorded and transcribed through verbatim. This study has three major themes with several subthemes. Thematic analysis used for this study. Fathers are being exhausted because the continuous caregiving affected their jobs, income and other responsibilities. Significant problems on their employment and income due to frequent caregiving demands and medical appointments. Behavioural changes such as self-injury, communication difficulties and aggression create daily stress among fathers. Managing menstruation and resistance to medical treatments adding complexities in caregiving. Fathers utilized some major coping methods such as adjustment of work schedules, relying on day cares for their child and seeking extended support from family members. These findings emphasize the disruption to fathers' social lives



and personal life underscore the necessity for inclusive support systems recognizing fathers as key caregivers. Limited research has focused on the parental caregiving in Kerala. Support systems such as counselling, financial assistance is needed to empower the caregivers.

### **Socioeconomic Disparities in Depression Diagnosis: Comparing Self-Reports and Standard Tests in Elderly Indians (50+)**

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**Objectives:** The objective of this study was to examine the extent of agreement between self-reported and measured prevalence of depression and to explore the risk groups and factors associated with inconsistencies in self-reported and biomedically measured illness. **Methods:** Reliability measures such as sensitivity, specificity, and kappa statistics were used to examine inconsistencies in self-reported and biomedically measured depression in the study on Global AGEing and adult health (WHO, SAGE) data (n=8974). Logistic models were adopted to analyse the respondent characteristics related to both false positive and false-negative responses in the survey. **Results:** The sensitivity analysis demonstrates a moderate sensitivity of 11.6% (CI: 9.6-13.8%), implying it correctly identifies 11.6% of true depression cases. In contrast, its specificity is high at 98.5% (CI: 98.2-98.8%), indicating it effectively recognizes 98.5% of non-depressed individuals. The overall error rate stands at 10.3%, reflecting the proportion of incorrect diagnoses. The positive predictive value (PPV) is 47.1% (CI: 40.5-53.9%), meaning that about 47.1% of individuals identified as depressed by the tool actually have depression. The Receiver Operating Characteristic (ROC) score is 55.1% (range: 0.54-0.56), indicating a moderate ability of the tool to distinguish between depressed and non-depressed individuals. Age-wise, sensitivity increases with age, from 1.68% in the 60-69 age group to 1.98% in those aged 70 and above, while specificity slightly decreases. Regarding gender, females have a lower sensitivity (0.69%) compared to males, but a higher specificity (0.9%). Education level markedly influences outcomes, with primary education showing a significantly higher sensitivity (2.43%) but lower specificity (0.72%) compared to no education. **Discussion:** The inconsistencies between self-reported and standard test-based diagnoses for depression highlight the importance of using objective measures to accurately assess disease burden and inform public health interventions. Underestimation of the true prevalence of chronic diseases can result in inadequate funding for prevention, treatment, and research.


### **An Application of Machine Learning Technique in Predicting Hypertension in India**

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**Introduction:** Hypertension is a major risk factor for non-communicable diseases and significantly contributes to morbidity and mortality, particularly with the rising ageing populations globally. Often developing asymptotically over years while causing health damage, hypertension is known as the "silent killer". While traditional regression methods have been used for hypertension risk prediction, their performance is limited by complex health datasets. Recent advances in artificial intelligence (AI) and machine learning (ML) offer opportunities to develop more accurate, data-driven predictive models for early identification of at-risk individuals. **Purpose:** To identify risk factors and compare ML algorithms for hypertension prediction. **Materials and Methods:** This study utilised secondary data from LASI wave 1, a nationally representative survey conducted from 2017-2019, sampling 73,396 adults aged 45+ across all Indian states and union territories. Machine learning algorithms were implemented using Python scikit-learn on Google Colab and STATA 17. Data was split into training (70%)



and testing (30%) sets. Classification reports provided a comprehensive model performance evaluation for predictive capability optimisation in heterogeneous ageing populations. Results: Analysis included 48,382 LASI participants (mean age 59 years). Among participants, 65.83% were hypertensive and 34.17% non-hypertensive. Hypertension prevalence increased with age, particularly after 60. XGBoost achieved the highest accuracy (67.89%), followed by support vector machine (66.7%) and logistic regression (66.69%). Permutation-based feature importance analysis identified age, BMI, and diabetes as the most influential risk factors. Conclusion: Machine learning techniques effectively extracted knowledge from LASI data. XGBoost demonstrated superior predictive accuracy for hypertension classification. Age emerged as the most significant risk factor. This ML model using secondary datasets can forecast elderly patient conditions, enabling preventive measures. The research demonstrates machine learning's potential for disease prediction and prevention in ageing populations, supporting the principle that prevention is preferable to treatment.

### **Benchmarking the Indian Pharmaceutical Industry: A DEA-Tobit Analysis of Performance and Policy Implications**

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India has emerged as a leading global centre for pharmaceutical production, playing a vital role in the worldwide supply of cost-effective and high-quality generic medicines. Recognised as a key contributor to global healthcare security, the sector continues to expand in both scale and strategic importance. The present study evaluates the performance of major Indian pharmaceutical firms by examining their technical efficiency and organizational attributes that shape it. A balanced panel dataset of 49 firms operating over the period 2010–2024 forms the empirical foundation of the analysis. A two-stage methodological framework is implemented. In the first stage, Data Envelopment Analysis (DEA) is used to compute efficiency levels based on selected input and output indicators. Both the input-oriented Charnes, Cooper and Rhodes (CCR) model and the Banker, Charnes and Cooper (BCC) model are applied to capture performance under assumptions of constant and variable returns to scale respectively. Findings from DEA indicate that most firms underperform relative to the efficient frontier, with overall efficiency levels averaging between 68% and 78%. These scores highlight substantial potential for firms to improve their resource utilisation and competitive positioning. Further, a censored Tobit regression model is adopted to determine the influence of organizational determinants on the efficiency outcomes. Results reveal that firms with stronger profitability and higher foreign exchange earnings tend to exhibit greater efficiency. Conversely, firm age and R&D intensity display negative associations, suggesting older firms and those with higher innovation investments may face structural or cost-related inefficiencies. Although foreign exchange expenditure shows a positive coefficient, its impact remains statistically insignificant. The study underlines the importance of strengthening innovation capacity, enhancing global linkages and formulating supportive policy interventions to boost firm-level efficiency. Enhanced operational performance in this sector can contribute to advancing public health and achieving sustainable and inclusive healthcare objectives aligned with SDG 3.

## Portability and Plate: Make-Shift Nutrition Behaviour among Migrant Families

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Circular migration (families migrating seasonally for five to six months) remains a critical coping strategy for livelihood among poverty-stricken population across states in India. The Public Distribution System (PDS) remains the primary channel for subsidised grains to safeguard these households' food security. Alongside this, the Integrated Child Development Services (ICDS) provides take-home rations (THR) for women and young children and the Mid-Day Meal (MDM) Scheme ensures cooked meals for school-going children. However, the accessibility to these schemes by migrant families is strained as their frequent movement typically ends in exclusion from nutrition welfare entitlements due to implementation and governance challenges. This study seeks to assess how the interlinkages between portability of nutrition schemes and out of pocket household food expenditure controls consequent food choices among circular migrant families. Focus group discussions (FGDs) with migrant households has been used to trace how the (dis)continuity of entitlements intersects with household food expenditure decisions, and coping strategies in contexts of financial constraint. This study focuses on two emerging consequences- dietary diversity constraints and upward consumption rate of ultra-processed foods. A key insight emerging from this study is the conceptual shift from “meals” to “snacks”. Migrants' occupational demands in informal sector like long working hours drive the adoption of cheap, convenient, and instant alternatives. Exposure to packaged foods further compounds this shift. Over time, these items are normalized as substitutes for complete meals. The availability of these products at low cost, combined with their shelf stability and minimal time investment makes this as obvious option for migrant households. This dietary shift poses significant implications for public health, given the long-term risks associated with poor dietary diversity and nuanced understanding of how exclusion and portability gaps reshape nutrition behaviour among India's circular migrants.

## Who Suffers More When Ageing Alone? Exploring Gendered Aspects of Health and Quality of Life of Older Adults in India

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To investigate the association of ageing alone on various health outcomes and quality of life (QoL) among older adults, with a focus on gender-specific differences, we analysed the nationally representative dataset of the Longitudinal Ageing Study in India (LASI). Using unadjusted logistic regression models, we analysed the association between ageing alone and self-rated health (SRH), multimorbidity, cognitive impairment, depression, and limitations in activities of daily living (ADL) and instrumental activities of daily living (IADL). Additionally, we examined differences in QoL across key domains such as general health, life satisfaction, physical, psychological, social, and environmental QoL. The findings show that ageing alone significantly increases the risk of poor health outcomes for both men and women. The findings show that ageing alone significantly increases the risk of poor health outcomes for both men and women. Men ageing alone have higher odds of poor SRH (OR: 1.88), cognitive impairment (OR: 2.03), and depression (OR: 2.71), along with increased ADL and IADL limitations. Similarly, women ageing alone experience greater risks of poor SRH, cognitive impairment, and depression. Functional limitations were also more prevalent among women ageing alone. These results suggest that social isolation contributes to significant physical and mental health challenges, particularly in terms of depression and functional decline. The study highlights the need for targeted interventions to improve social support for older adults ageing alone and calls for gender-sensitive policies to address the unique vulnerabilities faced by men and women in later life.



## Occupational History and the Burden of Non-Communicable Diseases in Later Life: Evidence from Older Adults in India


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**Background:** Non-communicable diseases (NCDs) are a leading cause of morbidity and mortality among older adults in India. Occupational history reflects cumulative exposure to physical demands, work-related stress, and environmental conditions across the life course, which may influence health outcomes in later life. However, limited empirical evidence exists on occupational differentials in NCD burden among older adults in India. This study examines the association between lifetime occupational history and the prevalence of NCDs among older adults. **Methods:** Data were drawn from Wave 1 of the Longitudinal Ageing Study in India (LASI, 2017–18), including 31,464 individuals aged 60 years and above. Lifetime occupation was classified into agricultural work, manual labour, service/clerical occupations and professional occupations. The outcome variable was the presence of at least one self-reported NCD, including hypertension, diabetes, heart disease, stroke, and chronic respiratory diseases. Descriptive statistics and multivariable logistic regression analyses were conducted. **Results:** The overall prevalence of at least one non-communicable disease among older adults was 48.9%. NCD prevalence varied considerably across occupational groups. Older adults with a history of professional occupations reported the highest prevalence (59.1%), followed by those with a history of service/clerical occupations (55.6%). In contrast, the prevalence was lower among individuals engaged in agricultural work (41.8%) and manual labour (43.5%). Hypertension was the most commonly reported condition (31.7%), followed by diabetes (16.4%) and chronic diseases (8.9%). Multivariable logistic regression results showed that, compared to those with an agricultural occupational history, older adults from professional occupations had significantly higher odds of reporting at least one NCD (Adjusted Odds Ratio [AOR] = 1.42, 95% CI: 1.30–1.55). **Conclusion:** Occupational history is an important determinant of NCD burden in later life. Incorporating a life-course perspective on occupation into ageing and public health policies may help reduce NCD-related health inequalities and promote healthy ageing in India.

## Mapping Digital Determinants of Student Well-being: Development and Validation of the Combined Impact Scale (CIS)

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**Background:** Digital engagement is a central component of young adults' lives, yet its relationship with mental health remains poorly understood due to overreliance on crude indicators such as screen time. This study addresses this methodological gap by developing a multidimensional instrument capable of precisely measuring digital engagement and identifying its specific pathways to psychological well-being among college students in Kanpur, India. **Methods:** A cross-sectional sample of 416 students aged 20–25 years was recruited for this study. The study proceeded in two phases. In Phase 1 (Measurement Development), the Combined Impact Scale (CIS) was created through systematic item generation, expert validation, and Exploratory Factor Analysis (EFA), yielding five domains: Social Identity & Support, Social Strain, Academic Impact, Emotional Impact, and Physical Health. Psychometric evaluation demonstrated strong internal consistency ( $\alpha = 0.88$ ) and construct validity. A brief version (CIS-R) was also derived and validated for practical application. In Phase 2 (Determinant Analysis), hierarchical regression models were estimated using GHQ-12 psychological distress scores as the outcome. CIS domain scores were entered as independent variables, with demographic factors and total usage time included as controls, to isolate the unique contribution of each engagement domain. **Results:** The analysis revealed distinct factors that



influence student mental health. Social Strain emerged as the strongest positive predictor of psychological distress ( $\beta = 0.46, p < .001$ ), indicating that negative online social interactions are the most harmful digital pathway. In contrast, Academic Impact functioned as a significant protective determinant ( $\beta = -0.16, p < .01$ ), demonstrating that academically oriented digital use enhances well-being. Notably, global screen time showed minimal explanatory power once qualitative domains were included, underscoring the superiority of multidimensional measurement. Conclusion: This study demonstrates that the impact of digital engagement on mental health is determined not by how much students use technology, but how they use it.

### **Health Inequities among the Urban Homeless: A Cross-Sectional Analysis of Morbidity and Mortality Patterns in Mumbai, India**

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Despite India's commitment to Sustainable Development Goal 3, ensuring healthy lives for all the urban homeless remain largely invisible in health policy frameworks. This study examines morbidity, mortality, substance use, and mental health disparities among Mumbai's homeless from 2012–2022. Using a cross-sectional mixed-method approach, data were collected in 2023 from 500 homeless individuals across three city zones. Quantitative analysis (using STATA and R) employed descriptive statistics, multivariate regression, and latent class analysis to identify disease clustering and risk correlates. Findings reveal a high burden of respiratory infections, tuberculosis, hypertension, and skin diseases, with mortality peaking during summers and monsoons. Substance abuse (38% of women high-risk users) and poor mental health were significantly linked to prolonged homelessness and social isolation. The study underscores severe health inequities and calls for inclusive, integrated urban health interventions targeting the homeless population.

### **The Shifting Trend of Women's Age at First Birth in India: Evidence from NFHS-1 to NFHS-5- A 30-Year Perspective**

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The age at which a woman starts her childbearing has a big impact on her overall health and well-being, as well as on the health of her children. It is also important for a stable population and empowering women. Even though the minimum age for marriage is 18 as per the law in India, early motherhood is still a big challenge to overcome. This study aims to study the trends and shift in the age at first birth in India over a 30-year period (1992–2021) and to investigate the factors for this shift. The study uses data from five rounds of the National Family Health Survey (NFHS-1 to NFHS-5) and uses methods such as Life Table survival analysis, Kaplan-Meier estimates, Cox Proportional Hazard Models, and Multivariate Decomposition Analysis. The results show that the age at which women start motherhood has significantly increased. In NFHS-1, a large number of women started having children as teenagers. However, the average age of a woman becoming a mother changed from 18–19 years in 1992–93 to 22 years by 2019–21. Over the past 30 years, the chance of having a child before age 20 has gone down from about 60% to 35%. Additionally, social and economic factors, especially education and wealth, are pivotal indicators of when a woman will have her first child. According to our results, huge rise in female literacy, accounts for 45–50% of the rise in age at first birth. The rest of the change is due to changing social norms in the society about motherhood and can be attributed to mass media and empowerment. We need to take a multi-faceted approach that focusses on socio-economic development, lowering the school dropout rates, and creating more job opportunities for women.



# Abstracts

## Papers for BEST YOUTH PAPER AWARD Competition

### Trends in Prevalence and Factors Influencing Angina Pectoris among Elderly in India: SAGE Data Analysis

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Angina or Angina Pectoris is a symptom of chest pain revealed and gives indication of clinical examination to confirm chronic chest pain and a major health problem among elderly. In Health surveys Angina measured by using standardized questions developed by Rose (1962), supported by clinical examination. Main objectives of this study are to examine trends in self-reported and Rose Questionnaire (RQ) angina among elderly in India and to assess the association between age, sex with both Self-reported, Symptom based RQ angina during 2007-2020. A further aim is to assess the performance of the RQ angina in comparison with self-reported angina. Data were collected from Study on Global AGEing and Adult Health (SAGE) which collects the information from a representative sample covering Assam, Karnataka, Maharashtra, Rajasthan, Uttar Pradesh and West Bengal for the period Wave-I (2007), Wave-II (2015) and Wave-III (2020). Data were initially cross classified according to self-reported angina (SA) and symptom-based Angina (RD) for each Wave. Association between SA by each wave and age group, and sex established by using chi-square test, further to know the trend between Definite RQ angina, Possible RQ angina and SA by sex, z-test has been applied. Validity of RQ angina and SA was assessed by applying Cohen's Kappa (k) test. Results show that the prevalence of SA decreased from 5.53 percent in 2007 to 4.30 percent in 2020. Definite RQ angina also increased slightly from 16.87 percent to 18.17 percent over the same period. Significant associations were observed between both types of anginas and age group and sex across all waves. Specificity of RQ angina relative to SA ranged from 96 to 98 percent, while sensitivity ranged from 5 to 14 percent. Cohen's Kappa indicated slight to fair agreement between self-reported and RQ angina. Further interpretations and findings are discussed.


### Voluntary Bonds: Investigating the Association between Fictive Kin and Well-Being among Older Adults in Late Life through a Multigroup Intersectional Perspective

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Fictive kinship refers to the bonds arising out of voluntary social interaction, beyond one's household. This has gained immense attention and popularity due to the shrinking family size and shortage of real social networks, among ageing adults. The prevalence of such ties differs greatly depending on social context. The importance of such ties is increasing swiftly, particularly in light of the current obstacles to the social isolation experienced by the elderly population, especially for those who live alone. The study aims to investigate the association between fictive kin and well-being among older adults, whether this association differs across intersectional groups. The study utilized data of 29,332 older adults aged 60 and above from the Longitudinal Ageing Study in India. Questions like "having friends" and "sharing close bonds with them" are taken to operationalize fictive kin ties. Well-being is constructed considering several internal and external spheres of an individual's life, like physical and psychological domains, social network, life satisfaction, etc. Intersectional identities have been incorporated



to explore variation taking gender, marital status, and place of residence. Multi-group structural equation modelling has been carried out to show the association across intersectional groups. Having fictive kin is linked to improved well-being in the majority of groups, except for group 3 [ $\beta = -0.303$ , 95% CI: -0.309, -0.298]. Conversely, group 7 shows the most substantial positive relationship [ $\beta = 0.614$ , 95% CI: 0.610, 0.618]. The likelihood ratio test results [ $\chi^2(7) = 79,431.14$ ,  $p < .001$ ] suggests there is a lack of uniformity in these associations. Variations between group 1 and group 3 [ $\beta = 0.662$ , 95% CI: 0.657, 0.668] and between group 3 and group 7 [ $\beta = -0.918$ , 95% CI: -0.925, -0.910] highlighting the differences in fictive kin ties. Community-based activities emphasizing social inclusion fostering the development of these relationships improving ageing.

### **Clinical Constructions of “Unattended Bodies”: Medical Gatekeeping and Healthcare Inequities Experienced by Intersex Individuals**

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Intersex individuals who were born with variations in sex characteristics continue to face grave healthcare inequities, which were shaped by medical gatekeeping, stigma, and institutional silence. Despite global critiques of non-consensual “normalizing” interventions, intersex bodies remain subjected to binary sex assignment over bodily autonomy by medical authority. Hence, this paper tries to find out how medical gatekeeping and normative pressures shape the lived healthcare experiences of intersex people in South India. The study employed a qualitative approach; in-depth semi-structured interviews were conducted with fourteen intersex individuals from Kerala and Tamil Nadu using snowball sampling. Data were analyzed using descriptive phenomenological analysis to identify recurrent patterns of experiences and structural barriers in which three themes were emerged – (1) Structural barriers and healthcare inequities (2) Biopower and medicalization of intersex bodies, and (3) Hermeneutic injustice and social marginalization. Findings revealed that medical gatekeeping operates as a mechanism through which intersex individuals encounter healthcare inequities. Participants discussed their continued reliance on medical professionals to validate their physical differences, limited access to medical records, and early-life medical interventions performed without informed consent. Numerous accounts of incorrect diagnosis, needless genital “normalization” procedures, and hormonal treatments that were justified under the pretense of social conformity and biomedical correction were shared. Delays in receiving appropriate affirming care and institutional erasure were further exacerbated by the health system’s insistence on binary classification. Hence, the study points out the pressing need to eliminate medical surveillance, adopt rights-based protocols, recognize intersex variations as human diversity, and integrate psychosocial, community-driven, and culturally sensitive frameworks into India’s health care policies. Ensuring equity for intersex individuals is essential for realizing the vision of “wellness for all.”


### **The Paradox of Progress: Nuclear Family Transition and the Dual Impact on Young Women’s Autonomy and Maternal Health in India**

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The relationship between India’s transition toward nuclear family structures and the well-being of young married women operating within its largely patrilocal system is widely discussed among Indian family demography. We use five rounds of NFHS (NFHS, 1992-2021) to see the changing pattern of family structure. And used three



rounds of NFHS to investigate the living conditions (nuclear/extended) of young married women (aged 15-29) and their impact on eight health outcomes, including domestic violence (physical and sexual abuse), nutritional status (anaemia and underweight), dietary autonomy (meat and dairy consumption), and maternal health utilisation (ANC visits and skilled birth attendants). We find that, despite overall increase in the prevalence of nuclear families, the percentage of young married women living in them has decreased from 40.2% in 2006 to 32% in 2021. This trend is also evident from further analysis of children's age and birth order in relation to living in nuclear families. The evidence suggests that nuclearization is an accomplished and delayed life-course stage associated with women's seniority and the achievement of their initial reproductive goals. More critically, we also find a "core structural trade-off." Young women living in nuclear families have higher odds of experiencing physical violence, suggest the extended family provides a protective social buffer. Which contradicts a view that suggests nuclear families serve as safer matrimonial homes for women. Simultaneously, nuclear households show higher dietary autonomy (higher meat consumption). Conversely, extended family provides material support, which leads to higher utilisation of antenatal care. Furthermore, we found an increasing vulnerability of female-headed-nuclear-households, which increased from 7.4% to 9.9% (2006-2021) and face a double burden of social support and financial scarcity. These localised differences across India's regions and SES groups suggest a policy that is informed by regional vulnerabilities rather than a "one-size-fits-all" approach.

### Research Based Insights into Social Determinants of Ultra-processed Food Intake and Related Health Risks from 2000–2025

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Ultra-processed food (UPF) consumption has risen sharply worldwide and is increasingly linked to the global burden of obesity, diabetes, and other non-communicable diseases. While socioeconomic and environmental factors are known to shape dietary choices, the global research landscape concerning the social determinants of UPF consumption, including income, education, urbanisation, household structure, food insecurity, and broader socioeconomic conditions, has not been systematically mapped. This study addressed this critical gap by performing a comprehensive bibliometric analysis of Scopus-indexed literature. The objective was to identify global research trends, thematic areas, and knowledge gaps related to the social determinants of UPF consumption. A structured search, restricted to English-language publications between 2000 and 2025, yielded 1561 eligible documents. Bibliometric indicators, including annual scientific production, citation patterns, and top contributing authors, countries, and institutions, were analysed. Network visualisations, keyword co-occurrence, co-authorship networks, and thematic clusters were generated using VOSviewer and Bibliometrix (R package). The analysis revealed a marked and sustained increase in scientific production over the past decade, underscoring the growing public health concern. Recurring and important thematic clusters related to various social determinants were identified, confirming the central role of economic, cultural, and environmental factors in influencing global UPF consumption. The findings highlighted key contributors, emerging themes, and neglected areas, supporting future research, policy formulation, and interventions aimed at reducing inequities in UPF intake.



## Role of Frontline Health Workers in Improving the Continuum of Care and Maternal and Child Health Outcomes in India: An Analysis of the PMMVY (Maternity Benefit Scheme)

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**Background:** Institutional delivery rate in India has increased from 39% in 2005-06 to 88% in 2019-21, but overall maternal and child health outcomes have not improved significantly as expected. The neonatal mortality rate decreased from 37 to 25 deaths per 1,000 live births during the same period. Continuum of care (CoC), including regular antenatal care, institutional delivery, post-delivery care, and complete immunization, is crucial, yet only 25% of women receive this full continuum of care. In 2017, the Pradhan Mantri Matru Vandana Yojana (PMMVY) was launched to incentivize women to utilize comprehensive maternal and child healthcare services. **Research Question:** 1. Do sequential cash incentives influence the continuum of care (CoC) and maternal and child health (MCH) outcomes in India? 2. What role do frontline-health-workers (FLHW) play in improving the utilization rate of continuity of care in India? **Data and Method:** This study uses data from the National Family Health Surveys (NFHS 4 and 5) and employs matched difference-in-difference and triple difference-in-difference methods to assess the impact of PMMVY and FLHW on care utilization on CoC and MCH outcomes. **Results:** The PMMVY program positively influences the likelihood of receiving CoC. Improved engagement with frontline health workers further enhances women's access to antenatal care (ANC) ( $\beta=0.2128$ ,  $p<0.001$ ), institutional delivery ( $\beta=0.0528$ ,  $p<0.01$ ), and postnatal care for infants ( $\beta=0.0126$ ,  $p<0.05$ ). However, there is no observed effect on maternal postnatal care. The policy exposure along with better frontline health worker's engagement significantly contributes to an overall increase in the CoC ( $\beta=0.021$ ,  $p<0.001$ ) and helps reduce low birth weight ( $\beta=-0.0134$ ,  $p<0.001$ ) and early neonatal mortality ( $\beta=-0.0287$ ,  $p<0.001$ ). However, it does not significantly affect overall neonatal mortality ( $\beta=-0.0128$ ,  $p<0.156$ ).


## Mapping the Inequalities in Epidemiological Transition across States of India: Insights for Achieving Health Equity

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**Background:** Omran's epidemiological transition classified human populations into distinct stages, each characterised demographically (levels and volatility of death, fertility, and population growth rates) and epidemiologically (cause-of-death contributions). However, there is high within-stage variation in the causes of death among different populations and across sexes. **Objective:** We attempt to map the inequalities in mortality burden from the most significant cause of death across states in India, providing an essential reference for health policy and planning. **Materials and Methods:** Using data from the India State-Level Disease Burden Initiative and Sample Registration System, we measured the mortality burden at each life expectancy level by hierarchical cause-of-death groupings. We operationalise 'burden' as the potential years of life expectancy gained by the total elimination of a cause/cause-group, estimated using cause-deleted life table methodology. We strongly weigh the causes of death at ages with more remaining life years and provide comparable burden estimates across Indian states and over time. **Results:** The mortality burden from Non-Communicable Diseases (NCDs) outweighed those due to communicable, maternal, neonatal, and nutritional diseases (CMNNDs) in India around 2003. However, it took more than 20 years for the transition to occur within the states. Nevertheless, the burden of some of the leading CMNNDs remains very high, especially in Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha, and Uttar Pradesh. The five leading individual causes of the mortality burden in India in 2016 were communicable diseases of diarrhoeal diseases and lower respiratory infections, along with NCDs of ischemic heart disease,



chronic obstructive pulmonary disease, and cerebrovascular disease. Conclusion: This comprehensive mapping of inequalities in mortality burden, i.e., life expectancy gained by eradicating a cause of death, across sex and states, provides valuable insight into health policy and health financing investments envisioned for each state.

### **Residential Conditions, Depression and Life Satisfaction among Urban Older Adults in India: Evidence from LASI Wave 1**

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**Introduction:** India's rapidly ageing urban population increasingly depends on housing and nearby environments for support, comfort, and dignity in later life. Unequal access to adequate residential infrastructure may shape life satisfaction, a core dimension of healthy ageing. Depression, a common mental health challenge in old age, may act as an important pathway linking environmental stressors with well-being. This study examines how residential conditions affect life satisfaction among urban older adults in India and whether depression mediates this relationship. **Data and Methods:** Data were drawn from Wave 1 of the Longitudinal Ageing Study in India (2017–18). The sample included 15,836 adults aged 60+ residing in urban areas. A composite index measured residential conditions, incorporating housing structure, crowding, water and sanitation access, electricity, clean cooking fuel, and neighbourhood safety. Depression was assessed using a 10-item symptom scale, and life satisfaction using a 5-item validated measure. Path analysis with structural equation modelling was used to estimate direct and indirect effects while adjusting for socio-demographic and health characteristics. **Results:** Better residential conditions were significantly associated with higher life satisfaction ( $\beta = 0.221$ ,  $p < 0.001$ ) and lower depressive symptoms ( $\beta = -0.304$ ,  $p < 0.001$ ). Depression was strongly linked to reduced life satisfaction ( $\beta = -0.413$ ,  $p < 0.001$ ). A significant indirect effect confirmed mediation ( $\beta = 0.126$ ,  $p < 0.001$ ), with depression accounting for 36.3% of the total relationship between residential conditions and life satisfaction (total effect  $\beta = 0.347$ ). Model fit indices were acceptable (RMSEA = 0.028; CFI = 0.961; TLI = 0.948). **Conclusion:** Residential conditions are a critical determinant of urban elderly well-being in India. Enhancing housing quality and basic amenities can reduce depression and substantially improve life satisfaction. Age-friendly housing and mental-health-integrated urban renewal policies should be prioritized to support healthy and fulfilling ageing in Indian cities.

### **A Study of Resilience and Life Satisfaction among Youth in Kachchh District**

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In contemporary research on psychology, two constructs repeatedly emerge as central to an individual's capacity to lead a fulfilling life: resilience and life satisfaction. The present study examined gender and area differences in resilience and life satisfaction, among adults. In this study sample was taken from Kachchh district in Gujarat. Data were collected from 160 participants by using standardized resilience scale and satisfaction of life scale through survey. Independent samples t-tests revealed a significant gender difference in both resilience ( $t = 4.18$ ,  $p < .001$ ) and life satisfaction ( $t = 2.52$ ,  $p = .013$ ), with females reporting higher scores than males. Area-wise comparison indicated that rural participants showed significantly higher resilience than urban participants ( $t = 5.20$ ,  $p < .001$ ), while no significant difference was found for life satisfaction ( $t = 0.096$ ,  $p = .924$ ). Pearson's correlation analysis showed a weak and statistically non-significant relationship between resilience and life satisfaction ( $r = .141$ ,  $p = .076$ ). Overall, the study suggests that resilience varies significantly across gender and area, while life satisfaction shows gender differences but not area differences. However, resilience does not significantly predict life satisfaction in this sample.

## Impact of Physical Activity on NCDs among Indian Older Adults

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**Introduction:** Non-communicable diseases remain a leading cause of mortality and morbidity globally, particularly among older adults. In India, the rapid demographic transition has resulted in a significant increase in the aging population, necessitating a deeper understanding of the factors influencing NCD prevalence. This study examines the impact of physical activity on the occurrence of various NCDs among individuals aged 60 and above. **Data & Methods:** The study utilized cross-sectional data from the LASI, comprising a nationally representative sample of 28,935 individuals. Logistic regression analysis was employed to investigate the relationship between physical activity and NCDs, and Propensity score matching was used to show the impact of Physical activity on NCDs. Further, Population Attributable Factor (PAF) was used to determine the proportion of NCDs cases preventable by recommended physical activity levels. **Results:** Adequate physical activity was significantly associated with lower odds of any NCD (OR 0.72, 95% CI 0.67-0.78). Inadequate physical activity also showed a protective effect (OR 0.88, 95% CI 0.83-0.94) compared to those who never worked. Other significant factors influencing NCD risk included age, sex, educational level, living arrangements, self-rated health status, body mass index and smoking habits. The comparison between adequate physical activity levels and never physically active shows a PAF estimate of 0.093 (95% CI: 0.071 - 0.114), indicating that 9.3% of NCDs cases could be prevented by increasing physical activity from never active to adequate levels. **Conclusion:** The findings highlight the significant role of physical activity in reducing NCDs risk among older adults in India. Promoting regular physical activity through community-based programs and healthcare interventions could substantially lower the burden of NCDs.


## Does Employment Protect Mental Health in Later Life? Gendered and State-Level Insights from LASI

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Depression in later life is a growing yet often under-recognised public health concern in India, with substantial implications for wellbeing, functionality, and healthy ageing. India's rapid demographic transition and increasing longevity have resulted in a rising older population facing diverse vulnerabilities. Employment in later life is considered beneficial not only for financial security but also for promoting psychosocial engagement, which may protect against mental health problems. At the same time, gender inequalities in labour force participation and access to social and economic resources place women at a heightened risk of late-life depression. While existing studies have examined employment and gender separately, limited attention has been given to their intersection in shaping mental health outcomes. This study addresses this gap by analysing the association between employment status and depressive symptoms among adults aged 45 years and above, using nationally representative data from LASI Wave 1. Depressive symptoms were assessed using the 10-item CES-D scale. Employment status and gender were the main predictors, and an interaction term was included to assess gender-specific variations. Bivariate analyses examined socioeconomic patterns, and multivariable logistic regression estimated adjusted odds ratios. Results indicate that 27.3% of older adults reported depressive symptoms, with women (29.6%) showing higher prevalence than men (24.6%). Non-working individuals reported greater depressive burden (31.5%) compared to those employed (24.3%). Regression analyses showed that non-working adults had 1.42 times higher odds of depression, while women had 1.31 times higher odds than men. Interaction effects revealed particularly elevated vulnerability among non-working women and individuals aged 65–74, though these effects were largely additive. Employment emerges as an important protective factor for mental health in older age. The findings highlight the



need for gender-sensitive approaches, enhanced social engagement opportunities, and regionally tailored mental health strategies to promote healthy and active ageing in India.

### **Morbidity-Mortality Paradox in India: An Analysis of Sex-gap in Health of Older Adults through Disability Free Life Expectancy by Rural-urban Location and Geographical Region**

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**Background:** The morbidity-mortality paradox is a phenomenon where females live longer with poor health compared to males who live shorter but in good health. India made significant improvements in life expectancy, but whether achievements in life expectancy are translating into corresponding benefits in health remains understudied. This study aimed to assess: (i) the sex gap in healthy life expectancy among older adults aged 60 and above by rural-urban location and geographical region in India; and (ii) the morbidity-mortality paradox by rural-urban location and geographical region in India. **Methods:** Using nationally representative ‘mortality’ and ‘disability’ data from ‘India’s Sample Registration System (SRS)’ and ‘Longitudinal Ageing Study in India (LASI)’, respectively, the life expectancy, disability-free life expectancy, and life expectancy with disability were computed employing Sullivan’s method. The sex gap in healthy life expectancy was decomposed through the stepwise replacement decomposition technique. **Results:** The findings indicate a female mortality advantage where females aged 60 lived longer than males in India and its geographical regions, both in rural and urban locations. In contrast, disability prevalence indicated females’ disadvantage because females suffered more from disability than males. On combining disability prevalence rates with life tables, it was found that despite living longer, females spent a higher proportion of their remaining lives at age 60 in disability compared to males, indicating the existence of the morbidity-mortality paradox. The findings further revealed the consistent existence of the morbidity-mortality paradox across rural and urban locations, as well as geographical regions, in India. **Conclusions:** The findings of this study underscore the need for targeted efforts to reduce disability among females aged 60 and above, enabling them to live longer, healthier, and more productive lives.

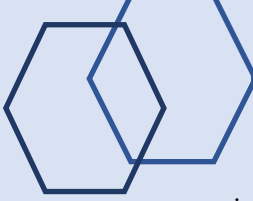
### **Are Children a Source of Old Age Security? The Role of Parity in Elderly Food Insecurity in India**

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**Background:** In low-and middle-income countries, such as India, children have long been considered as a source of old-age security, offering both financial and emotional support. In India, fertility is declining, and the old-age population continues growing. So, understanding how parity affects old-age food security is crucial. **Methodology:** This study utilizes 31,588 samples using the Longitudinal Ageing Study (LASI) data. Descriptive, bivariate, and logistic regression, as well as sensitivity analysis, were used to assess the relationship between social capital and food insecurity. **Findings:** Results suggest that 43.3% (95% CI: 43.8, 46.8) of older adults encounter food insecurity, with 36.7% mild, 2.1% moderate, and 6.6% experienced severe food insecurity. Among the states, Madhya Pradesh recorded the highest proportion of older adults who experienced severe food insecurity (84.6%, 95%CI: 76.0, 90.4), while Himachal Pradesh recorded the lowest proportion (9.5%, 95%CI:6.8, 13.3). However, the presence of children within the household is also an important determinant of food insecurity. Older adults who do not reside with any of their children were found to experience a higher prevalence of food insecurity (48.9%, 95%CI:46.9, 51.0) compared to those with children present (43.6%, 95%CI:41.9,45.2). The traditional



expectation that having more children ensures greater support in later life does not hold in this context; older adults residing with six or more children were found to experience the highest levels of severe food insecurity. Our regression analysis revealed that parity has a significant impact on food security at later ages. Older adults who have any children residing in their household are 6.9 percentage points less likely to experience food insecurity compared to those without any children residing in the household, controlling for other factors in the model. Conclusion: While living with children reduces food insecurity in older adults, increased parity does not inherently improve food security in later life.

### **A Study of Gender and Academic Stream Differences in Fear of Missing Out (FOMO)**

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FOMO, or the fear of missing out, refers to the feeling or perception that other people are having fun, experiencing new things or living a better life than you. The purpose of this research was to study FOMO in females and males of science stream and arts stream. To collect the data the survey method was used. The Fear of Missing Out Scale (FoMOS; Przybylski, et al., 2013) was given to 100 students of R.R. lalan college, Kutch- Gujarat. 50 students (25 females and 25 males) from arts stream and 50 students (25 females and 25 males) from science stream had filled the inventory. The data was analysed using t- test. The independent samples t-test compared males and females on fomo scores. The result was  $t(98) = 1.89, p = 0.061$ . There is no significant difference between males and females in their fomo scores. The independent samples t-test comparing FOMO levels between Arts and Science students shows a statistically significant difference,  $t(98) = -2.19, p = 0.031$ . There is a significant difference in FOMO between Arts and Science students. The negative t-value (-2.19) suggests that Arts students have lower FOMO scores than Science students.


### **Do Supportive Environments Compensate for Low Intrinsic Capacity? Insights from the Longitudinal Ageing Study in India**

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Healthy Ageing has become an important policy priority as countries experience unprecedented increases in life expectancy. In India itself, life expectancy rose from 41.2 years in 1950 to 72 years in 2023. These added years raise an urgent question: are individuals living longer in good health or extending years with disability and functional loss? There have been many ways to understand the quality of aging, such as successful aging, productive aging, etc., which emphasize the absence of disease, thereby excluding older adults who live well despite chronic conditions. In contrast, the World Health Organization's Healthy Ageing framework defines healthy ageing as the developing and maintaining of functional ability (FA), shaped by intrinsic capacity (IC) and the environments in which individuals live. Understanding how IC and environmental characteristics interact to influence FA is essential for India, where NCDs are rising, elder care is mostly family-based, and share of elderly will reach 20% by 2050. Using data from the Longitudinal Ageing Study in India, this study examines how enabling home environments, like electricity access, clean cooking fuel, and pucca housing, moderate the association between IC and FA. Linear regression models reveal a strong positive association between IC and FA ( $\beta \approx 0.99-1.04, p < 0.001$ ). Each environmental characteristic independently improves FA. However, all IC  $\times$  environment interaction terms are negative and statistically significant, indicating that supportive environments offer a greater functional advantage for individuals with lower IC, while the marginal benefit decreases at higher



IC levels. In other words, supportive environments act as compensatory factors, helping those with limited intrinsic capacity to maintain their functioning. These findings highlight the importance of integrating enabling environments at home into healthy aging policies. Strengthening these enabling conditions can play an important role in sustaining functional independence among India's rapidly growing older population.

### **Disenchanted Enchantment: The Symbolic Construction of Tranquillity and Mental Wellbeing Through Visuo-spiritual Symbols in Kerala Temple**

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Tranquility, a socio-psychological realm encompassing peace, calmness, and aesthetic pleasure, constitutes a vital determinant of mental well-being in contemporary reflexive risk societies. Kerala's exquisitely significant temples function as sanctuaries of psycho-spiritual well-being, where visuo-spiritual symbols mediate the symbolic construction of mental health through embodied social practices. This study is examined to understand the phenomenon of Thayathu/Thagudu, copper plate amulet renewal in Kerala temples, investigating disenchanted enchantment, the capacity to delight without deluding while remaining compatible with rationalization operates through material sacred symbols to generate tranquillity and existential well-being. The perceived visuo-spiritual logic of scheduled amulet renewal and its link to subtle allure in Kerala temples, unveils passive latent enchantment manifesting tranquillity. This study will address visuo-spiritual tranquillity determinants with the objective of understanding psychosocial role of visuo-spiritual symbols in generating tranquillity and existential mental well-being among individuals renewing their amulet. It further examines how habituated disenchanted disbelief in the modern stance of sceptical yet participatory engagement interacts with embodied symbols, equanimity, and symbolic construction of mental well-being. The study requires a focused ethnography, grounded in constructivist epistemology, utilizing purposive and snowball sampling among temple visitors renewing amulets. The study will employ semi-structured interviews and analyses through reflective thematic analysis integrating theoretical frameworks of Salar's disenchanted enchantment, Kaplan's attention restoration, mental well-being, health, tranquillity, and symbolic construction of reality. This research offers novel insights into symbols mediating mental well-being in postmodern societies where traditional enchantments persist within rationalized worldviews. By elucidating how visuo-spiritual symbols orient social interaction, construct sensory-associative perceptions, and shape subjectivity, this study advances understanding of symbolic sensitivity in mental health contexts opening new grounds on symbolic construction of mental well-being. Key words: tranquillity, mental well-being, temples, visuo-spiritual symbols, enchantment, symbolic construction of mental health


### **Diabetes among Older Adults in India: Prevalence, Risk Factors and Rural-urban Disparities**

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Introduction: The majority of deaths from NCDs are caused by cardiovascular diseases, followed by cancer, respiratory conditions, and diabetes (GBD, 2015). India is facing a substantial burden of diabetes, and understanding the disparities among different populations is crucial. Globally, India has already taken the second position in terms of diabetes after China, and 27.59% older adults are diabetic. Objectives: This study aims to assess and quantify the prevalence and likelihood of diabetes among individuals aged 60 years or above, considering various risk factors and characteristics. Also, to assess the difference in diabetes in rural and urban



areas of India. Data and Methods: The data were obtained from the National Family Health Survey-5 (2019-2021). The household member file has been used, and the effective sample size is 323,212, whose random blood glucose levels were measured. Bivariate analysis, logistic regression, and Fairlie's decomposition method have been employed in this study. Findings: Study reveals that older adults with hypertension are 33.15% diabetic, whereas among others 3.03%. The urban population (33.72%) exhibits a higher prevalence of diabetes than the rural population (24.94%). Diabetes increases gradually with wealth quintile and the year of education. Among the social groups, the ST population has the lowest prevalence. Odds ratios reveal that the elderly population with hypertension had 1.55 times more likelihood than others. The male elderly population had a greater likelihood of diabetes than the female population, and the rural population had a lower probability of developing diabetes compared to the urban population. The elderly of the richest wealth quintile had the highest odds of diabetes than others. A notable gap in diabetes prevalence has been observed between rural and urban areas. The table from decomposition indicates that the wealth quintile contributes the highest percentage (29.52%) to the gap, followed by hypertension, education, and tobacco consumption.

### Explaining Age at Initiation of Childbearing: A Decomposition Analysis in South and Southeast Asia

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The timing of the first childbirth is a critical determinant of maternal and child health, and its patterns reflect broader socioeconomic and demographic transitions. This study examines long-term trends in the age at initiation of childbearing (AICB) across eight South and Southeast Asian countries, identifying the factors contributing to observed differences. Using nationally representative Demographic and Health Survey (DHS) data from 1987–2022 for Bangladesh, India, Indonesia, Maldives, Nepal, Pakistan, the Philippines, and Timor-Leste, we analysed women aged 15–49 who had a birth in the five years preceding the survey. AICB was categorized as early (<20 years), mid (20–29 years), and late (30+ years). Descriptive estimates revealed a consistent upward shift in AICB across all countries, with the largest increases observed in Indonesia (+2.83 years), India (+2.51 years), Bangladesh (+1.68 years), the Maldives (+1.50 years), Pakistan (+1.32 years), and Nepal (+1.23 years). The Philippines (+0.54 years) and Timor-Leste (+0.55 years) showed comparatively slow progress, indicating the persistence of early fertility patterns. Blinder–Oaxaca decomposition results indicated a significant mean difference of 0.30 years in AICB between comparison groups. Differences in characteristics (endowments) explained only a small portion of this gap, while interaction effects—reflecting combined differences in characteristics and behavioural responses—accounted for most of the variation. Women's education emerged as the strongest explanatory factor, accounting for 30–55% of the difference, followed by wealth (15–25%) and urban residence (10–18%). Partner characteristics, particularly partner age and occupation, contributed substantially through endowment and interaction components. Overall, the findings highlight a regional shift toward later childbearing, largely driven by improvements in female education, socioeconomic conditions, and urbanization, although progress remains uneven. Targeted interventions focusing on rural, poor, and less educated women are essential to further delay early childbearing and promote healthier reproductive trajectories across the region.

## Other Abstracts Selected for the Conference

### Strengthening Health Research Transparency: A Checklist-Based Evaluation of Statistical Reporting in Biomedical Literature

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High-quality evidence is essential for health system strengthening yet biomedical studies frequently lack transparency in reporting essential methodological details. Such gaps limit reproducibility, impair evidence synthesis, and weaken policy decisions, especially in resource-constrained settings. India's movement towards Viksit Bharat requires robust, transparent, and accountable research systems. Transparent reporting in biomedical literature is a critical foundation for health policy evaluation, cost-effectiveness assessments and program design. The objectives of this study were threefold. First, the study aimed to assess the overall quality of statistical and methodological reporting in biomedical research articles. Second, it sought to quantify the extent to which articles adhered to key transparency indicators across different journal impact-factor strata. Finally, the study aimed to identify specific domains where reporting remains insufficient, thereby highlighting critical gaps that must be addressed to strengthen reproducibility, enhance evidence synthesis, and support more informed, evidence-based policymaking within the health system. A 12-item reporting checklist was developed using CONSORT, STROBE, and SAMPL principles. A total of 732 biomedical articles indexed in Clinical Key were reviewed and stratified into six impact-factor groups. Each article was screened for transparency indicators including objectives, hypotheses, sample size justification, study population, measurement methods, statistical analysis, software reporting, missing data handling, and data-sharing statements. Core descriptors such as objectives and measurement methods were reported by >99% of articles. However, critical transparency components were weak: hypotheses (26.8%), sample size computation (13.9%), missing data handling (40.4%), and data sharing (20%). Reporting varied significantly across strata, indicating inconsistent editorial standards. Transparency failures undermine reproducibility, weaken program evaluation, obstruct cost-effectiveness, and reduce trust in published evidence within the health system. Standardizing reporting expectations, embedding checklists in journal workflows and promoting data-sharing norms are essential for strengthening India's evidence ecosystem. Improving methodological transparency is critical for advancing health governance and achieving the vision of Wellness for All.

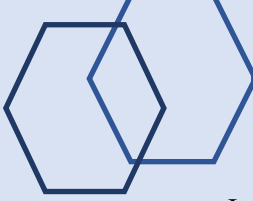
### Understanding Women's Anemia of India: Evidences from National Family Health Survey

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**Introduction:** Women's health is an important aspect of human's health. The increasing non-communicable disease, particularly anaemia due to multiple causes, is public health concern for women in India. In this context, it is necessary to understand the women's anaemia and its elimination strategy with special reference to culture. **Methodology:** To understand intersection between anaemia of different levels and culture, a cross-sectional study using different quantitative techniques like trend analysis, spatial distribution analysis and finally bi-variate analysis are carried out among Indian women across different NFHS data sets. **Results:** The trend of both moderate and severe anaemia was increasing among women in the last round of NFHS of India. The study also finds that



eastern India had a culture of high prevalence of mild anaemia whereas cultural changes of both moderate and severe anaemia were also observed. Tripura had more prevalence of mild anaemia whereas Ladhak had more prevalence of both moderate and severe anaemia however many other states were also in high prevalent of anaemia category in India. In this context, addressing anaemia through state-wise is more important than regions because every state has their own health structure. Women with no education, women not expose to mass media and lastly poorest women had more anaemia due to its commonality across different levels of anaemia and continuity across NFHSs. Besides, Various groups with high prevalence of anaemia of different levels had changed from anaemia whereas various other groups also sustained the high prevalence of anaemia in India. Conclusion: To conclude, the strategic solution to women's anaemia is to create proper awareness on prevention and treatment of anaemia through scientific messages using mass media by the health system and also special focus on early screening and treatments of uneducated women and lastly economic development of women among Indian states.

### **Mental Health and Well-being**

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NEP, 2020 states “Children are unable to learn optimally when they are undernourished or unwell. Hence, the nutrition and health (including mental health) need to be addressed through healthy meals and the introduction of well-trained social workers, counsellors, and community involvement into the schooling system”. Mental health is a state of well-being in which a person is able to cope with the stresses of daily life, continue to be productive and contributes to their community. Mental health is known to be more than just an absence of a disorder. Mental health and well-being are significant aspects of every individual's development. Emotional well-being is an overall positive state of one's emotions, life satisfaction, sense of meaning and purpose and ability to pursue self-defined goals. Well-being refers to a state of positive mental and emotional health. It encompasses things like feeling happy, content, and fulfilled, having strong social connections, and experiencing a sense of purpose in life. The ambit of mental health must encompass a child's emotional, behavioural, and social well-being. Mental health includes our emotional, psychological, and social well-being. Positive mental health contributes to a good life for an individual. Mental health is a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn and work well, and contribute to their community. It has intrinsic and instrumental value and is a basic human right. Here in this paper explores the role of family and school and factors affecting the mental health and well-being of individual development.


### **Explaining Child Undernutrition Inequalities across Aspirational and Non-Aspirational Districts in India: A Decomposition Analysis using NFHS-5**

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India has achieved notable improvements in child health, yet undernutrition remains a critical public health issue. According to NFHS-5 (2019–21), approximately 36% of children are stunted, 19% are wasted, and 32% are underweight. While there has been a marginal decline in these rates since NFHS-4 (2015–16), disparities remain stark particularly in the aspirational districts, which were identified in 2018 for targeted government intervention due to poor socio-economic and health outcomes. In these districts, 41.3% of children are stunted, 21.2% are wasted, and 38% are underweight, all higher than the national averages. This study analyzes the factors contributing to the inequality in child undernutrition between aspirational and non-aspirational districts using data



from NFHS-5. The specific objectives are to assess the extent of disparity and identify the key determinants responsible for the observed nutritional gap. Statistical techniques including such as Fairlie decomposition were applied to decompose the inequality in nutritional outcomes. The analysis focuses on three indicators: stunting, wasting, and underweight. Key explanatory variables include maternal education, household wealth, place of residence, caste, religion, maternal BMI, child's birth order, gender, and birth weight. Findings reveal that undernutrition is significantly more prevalent in aspirational districts. The district of Pashchimi Singhbhum (Jharkhand) recorded the highest underweight prevalence at 63%, while Mamit (Mizoram) had the lowest. In 80 districts, the prevalence of underweight exceeds the national average. Decomposition results show that the inequality is largely driven by differences in wealth status and maternal education. These two factors account for a substantial portion of the explained gap in undernutrition between district categories, indicating that socio-economic disparities remain central to the persistence of child undernutrition in India.

### **Rural–Urban Disparities in the Prevalence and Determinants of Undiagnosed Diabetes among Older Adults in India: Evidence from the LASI Wave 1 Dried Blood Spot Biomarker Data**

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**Background:** Diabetes is a rapidly growing health burden among older adults in India, and a major proportion remains undiagnosed, leading to delayed treatment and preventable complications. Rural–urban inequalities may significantly contribute to disparities in undiagnosed diabetes. This study aimed to estimate rural–urban differences in the prevalence of self-reported, biomarker-measured, and undiagnosed diabetes among older adults in India, and to investigate the determinants and contributing factors underlying these disparities. **Data and Methods:** We analysed nationally representative data from 28,772 individuals aged  $\geq 60$  years from the Longitudinal Ageing Study in India (LASI) Wave 1, incorporating dried blood spot HbA1c biomarkers. Undiagnosed diabetes was defined as HbA1c  $\geq 6.5\%$  without a prior self-reported diagnosis. Descriptive statistics, multivariable logistic regression, and Fairlie non-linear decomposition were employed to examine prevalence patterns, associated risk factors, and the contribution of socioeconomic and health variables to rural–urban gaps in undiagnosed diabetes. **Results:** The prevalence of self-reported, biomarker-measured, and undiagnosed diabetes was 14.1%, 16.0%, and 10.7% respectively. Urban residents had considerably higher undiagnosed diabetes prevalence (15.9%) compared to rural residents (9.1%). Adjusted analysis showed significantly higher odds of undiagnosed diabetes among urban older adults (AOR: 1.38; 95% CI: 1.26–1.52). The other significant predictors are higher education, greater household economic status, hypertension, and physical inactivity, whereas the oldest-old group had reduced risk. Decomposition findings revealed that education accounted for the largest share of the rural–urban disparity (59.35%), followed by working status and hypertension, while over 60% of inequality remained unexplained. **Conclusions:** A substantial hidden burden of diabetes exists among older adults in India, disproportionately affecting urban populations despite improved healthcare availability. Targeted screening strategies, improved health literacy, and strengthened primary care services are crucial for early detection and equitable management of diabetes in ageing India.



## Integrated AHP Machine Learning Model for Landslide Susceptibility and Social Vulnerability Mapping in North Bengal, India

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Landslide is a recurring geohazard in the Indian Himalayan Region as well as in North Bengal. The structural fragility, unchecked development due to tourism growth and climate induced rainfall variability in North Bengal make it highly vulnerable to localized disaster such as, landslide and building collapse. The October 2025 Darjeeling event underscored the urgent need for disaster risk assessment not only by mapping the hazard zones but also identifying socially vulnerable communities for effective Disaster Risk Management. In this context, this study present an integrated approach of landslide susceptibility and Social Vulnerability to capture the potential risk across North Bengal. A hybrid framework couples with Analytical Hierarchy Process (AHP) and Machine Learning (ML) was developed to generate an integrated model. Fifteen conditioning factors included slope, aspect, curvature, lineament density, land use/land cover, soil type, rainfall, drainage density, distance to roads, lithology, NDVI, Stream Power Index, Sediment Transport Index (STI) and Topographic Wetness Index (TWI) were derived from remote sensing, DEM, geological map and meteorological records. AHP was first used to obtain the initial weights of the conditioning factors and create an AHP weighted susceptibility index. The AHP outputs were incorporated into ML classifiers including Random Forest, Support Vector Machine, XGBoost and AdaBoost. Model performance was assessing using ROC-AUC, Kappa and Confusion Matrix based metrics. Result shows the integrated AHP-ML Model significantly enhance predictive accuracy and spatial consistency compared to the standalone approaches. The Social Vulnerability Index was constructed using physical, economic and facility-based indicators and overlaid with susceptibility outputs to identify the high-risk zones. The SVI combined with landslide susceptibility outputs reveals highly vulnerable areas that needs govt. attention for supporting preparedness planning, resource allocation and mitigation strategies. The framework offers practical approach for landslide risk reduction and support resilient mountain development in North Bengal.

## Impact of Supplementary Nutrition on Low Birthweight Outcomes in India: Evidence from the Integrated Child Development Services Programme

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**Background:** Low birth weight (LBW) is defined as a birth weight of less than 2,500 grams. It is a significant health concern and is responsible for 60-80% of neonatal deaths, with South Asia being particularly affected. In India, the prevalence of LBW is 18%, and it has only decreased by 4% over the past 15 years. To address this issue, the Government of India introduced the Integrated Child Development Services (ICDS) programme, which aims to provide food, preschool education, and primary healthcare to children under the age of six and their mothers. **Research Questions:** This study aims to assess the impact of the supplementary nutrition program (SNP) for pregnant women under India's Integrated Child Development Services (ICDS) and Anganwadi Centres (AWC) on LBW incidence. The study also evaluates how the program influences maternal and child healthcare service utilization, such as antenatal care, institutional deliveries, postnatal care, and neonatal mortality outcomes. **Data and methodology:** The study uses National Family Health Survey (NFHS) data, employs a quasi-experimental matching approach to estimate the impact of SNP receipt on LBW incidence and neonatal mortality. **Findings:** The findings indicate that receiving supplementary nutrition significantly reduces the prevalence of LBW by approximately 1.39 percentage points ( $\beta$ : -0.0139;  $p < 0.001$ ) and early neonatal mortality by 2 per 1000 live births. The mothers using ICDS services are more likely to utilize essential maternal and child health care services,

including antenatal care, institutional deliveries, and postnatal care. These results indicate an urgent need for improved nutritional interventions to combat undernutrition and enhance maternal and child health outcomes in India.

## Why Older Indians Become Frail? Uncovering the Biological, Cognitive and Social Roots of Vulnerability

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**Background:** Frailty is an emerging public health concern in India's rapidly ageing population. Recent community-level evidence shows that frailty coexists with social, functional, and cognitive vulnerabilities and is shaped by chronic disease patterns, mental health, and broader socioeconomic contexts. Understanding the multidimensional drivers of frailty is essential for developing integrated ageing policies and targeted interventions. **Objectives:** This paper synthesizes current epidemiological evidence to examine biological, behavioural, social, and environmental determinants of frailty among older Indian adults, drawing on the LASI survey. **Methods:** Data was used from LASI survey. The Fried frailty phenotype was derived and multivariable statistical models, including logistic and linear regressions were done. These models assessed associations between frailty, chronic disease onset, depressive symptoms, cognitive ability, functional limitations, and socioeconomic characteristics, with reporting of adjusted odds ratios (AORs), and 95% confidence intervals. **Results:** The burden of frailty in the country was as high as 31%. Frailty showed strong associations with the-onset morbidity and multimorbidity. Individuals with late-onset multimorbidity further increased these odds (AOR = 1.51, 95% CI: 1.30–1.69). Disease-specific risks were elevated for late-onset stroke, heart disease, osteoporosis, and psychiatric conditions. Frailty was also associated with greater depressive symptoms and reduced cognitive performance. Women exhibited disproportionately lower cognitive scores and greater frailty-related vulnerability. **Conclusion:** Frailty among older Indians emerges from interacting biological, cognitive, and social processes rather than ageing alone. These findings highlight the need for early screening, chronic disease management, mobility and strength-building interventions, and enhanced mental health and social support within India's evolving geriatric care framework, if done efficiently, this will take the nation towards Viksit Bharat vision 2047.


## Does Financial Inclusion Reduce Multidimensional Health Poverty? Empirical Evidence from Rural Eastern India

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Despite the efforts through social protection and health insurance benefits, health poverty has been a critical issue contributing to Sustainable Development Goal-1 (Zero poverty). However, Financial inclusion (FI) has received much attention recently as an important strategy for promoting sustainable development in recent years, particularly in rural areas where health poverty is still a major issue. Therefore, this study examines the impact of FI on household multidimensional health poverty (MDHP) by analyzing primary data from 467 rural households in Odisha, India. The analysis used a multidimensional index to measure both the levels of FI and household health poverty status. Further, the study applied Endogenous switching regression (ESR), propensity score matching (PSM), and Quantile Regression (QR) to evaluate the impact of FI on MDHP outcomes. Findings reveal that 66% of rural households are financially included, while 34% remain excluded, and 50.32% of households are health non-poor, while a significant percentage (49.67%) remain health poor. The ESR, PSM, and QR results show that



financially included households are significantly better off in terms of health status compared to their excluded counterparts. These insights highlight the critical need for policies that focus on promoting financial literacy, affordable access to financial services, and promoting health initiatives to improve health outcomes in rural areas.

## Hindu-Muslim Differences in Menstrual Hygiene among Indian Youths: Insights from a National Survey

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**Background:** The simultaneous use of both hygienic and unhygienic menstrual methods remains a serious public health concern in India, reflecting deep-rooted socio-cultural disparities. Menstrual hygiene practices are influenced by a complex interplay of various factors, despite increased awareness and access. This study aimed to examine the factors affecting the use of both (hygienic and unhygienic) methods across two religious groups in India. **Methods:** This cross-sectional study utilized data from the National Family Health Survey (NFHS-5), conducted across India during 2019–2021. A total of 241,181 women aged 15–24 years were included in the analysis and bivariate and multivariable analytical techniques were employed to address the study objectives. **Results:** The analysis reveals considerable inter-religious variation in menstrual hygiene practices. Among Muslim women, over one-third reported using both hygienic and unhygienic methods - a proportion higher than any other religious group (33.1%). After controlling for key background factors, Muslim women had significantly higher odds of being dual-method users (OR = 1.35,  $p < 0.001$ , 95% CI: 1.31–1.39) compared to their counterparts. **Conclusion:** This study reveals significant religious disparities in menstrual hygiene practices, with Muslim women showing higher dual-method usage. The findings highlight the need for culturally sensitive, religion-specific strategies to promote equitable menstrual health in India.


## Perceived Usefulness of Sociology Course for Health Sciences Learner

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Understanding the social dimensions of health is essential for healthcare professionals who frequently interact with diverse patient populations. A sociology course equips students with the knowledge to interpret patient behaviour, health disparities, and community factors influencing health outcomes. Therefore, this study aims to explore the perceived usefulness of the sociology course among allied health students. A cross-sectional study was conducted among 240 undergraduate health science students enrolled in a Sociology course at Medical College, Chennai. Data were collected using a structured questionnaire assessing usefulness in two domains: academic learning and clinical practice. The questionnaire comprised 15 items across two domains on a 5-point Likert scale ranging from 15 to 75, with higher score indicating a positive perception. Of the 240 participants, 62% were female, and 54% were in their final-year (fourth-year). The overall mean score was  $57.49 \pm 9.15$  (95% CI = 56.33–58.66), indicating that students generally perceived the sociology course as highly useful in their academic and professional development. Academic learning had a mean score of  $26.92 \pm 4.46$  (ranging from 7–35) indicating that students found the course, enhanced their understanding of social structures and determinants of health. Clinical practice showed a mean score of  $30.57 \pm 5.02$  (ranging 8–40) indicating that students perceived the sociology course as highly beneficial in applying sociological concepts to patient care, communication, and community health contexts. Both male and female students, as well as third- and fourth-year students, expressed similarly positive views regarding the academic and clinical relevance of the subject. Sociology strengthens the students' ability to



deliver holistic and equitable patient care. Integrating sociological perspectives more deeply into training can significantly enhance the overall quality of allied health practice.

### **Lifestyle Determinants of Menstrual Disorders among Adolescent Girls in Udupi, Karnataka**

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Menstruation is a normal physiological process experienced by females from adolescence to menopause. Menstrual disorders are common health problems among reproductive-aged women. These include irregular menstruation, dysmenorrhea, menorrhagia, oligomenorrhea, amenorrhea, and premenstrual syndrome (PMS), all of which may adversely affect physical health, emotional well-being, and quality of life. Lifestyle factors such as poor nutrition, physical inactivity, extreme exercise, smoking, alcohol use, and psychological issues like anxiety and depression can disturb hormonal balance and influence the menstrual cycle. Both underweight and overweight conditions may further disrupt endocrine regulation and menstrual regularity. Adolescent girls are particularly vulnerable to lifestyle-related menstrual irregularities due to puberty, academic stress, peer influences, and sociocultural pressures. Objectives: This descriptive survey aimed to assess menstrual disorders, lifestyle patterns, and perceived stress among adolescent girls and examine their interrelationships. Methods: Data were collected from 240 girls studying at Pre-University College using stratified random sampling. Instruments included a demographic proforma, a structured menstrual questionnaire, the Perceived Stress Scale (Sheldon Cohen), and the Hendricks Adolescent Lifestyle Questionnaire. Data were analysed using descriptive and inferential statistics. Result: Among the participants, most were 17 years old (76%), from nuclear families (76%), and resided in rural areas (66%). Regular menstruation was reported by 89%, while amenorrhea (83%), oligomenorrhea (71%), polymenorrhea (80%), menorrhagia (80%), and dysmenorrhea (68%) were widely experienced. Lifestyle patterns were good among 73% of girls, and 80% reported moderate stress. Lifestyle showed a significant association with age but not with other demographic variables. Perceived stress showed significant associations with family income, parental education, residence, and parental occupation. A significant positive correlation was identified between menstrual disorders and lifestyle patterns ( $r=0.4873$ ,  $p<0.0001$ ), and a strong positive correlation was found between perceived stress and menstrual disorders ( $r=0.9486$ ,  $p<0.0001$ ). Conclusion: The study concludes that adolescent menstrual disorders are closely influenced by lifestyle and stress.

### **Financial Literacy as a Pathway to Emotional Wellbeing: A Study of Rural Jan Dhan Account Holders in Jaipur District**

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This study explores the relationship between financial literacy and emotional wellbeing among rural Jan Dhan account holders in Jaipur District, Rajasthan. Using a cross-sectional survey design, data from 400 respondents were collected through structured questionnaires. Financial literacy was assessed using concepts like numeracy, interest rates, and banking operations, while emotional wellbeing was measured using the Geriatric Depression Scale. Principal Component Analysis (PCA) and Ordinary Least Squares (OLS) regression were employed for analysis. Findings reveal a positive association between financial literacy and emotional wellbeing, highlighting the role of financial knowledge in enhancing psychological health. The study underscores the need for targeted financial education programs to promote inclusive and sustainable development in rural India.



## A Statistical Analysis of Socio-demographic and Economic Characteristics in Metropolitan and Non-metropolitan Class-I Cities of Different Regions of India

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Urbanization in India exhibits strong regional, economic and socio-demographic disparities while metropolitan cities have emerged as dominant growth poles, non-metropolitan class I cities play a crucial role in balanced regional development. Socio-demographic and economic characteristics play a crucial role in shaping the growth of metropolitan and non-metropolitan Class I cities. According to the 2011 Census, India has 53 metropolitan cities and 416 non-metropolitan Class I cities. This paper statistically examines the effect of socio-demographic and economic on the level and growth of urbanization in Metropolitan and Non-metropolitan class I cities in India. Data for this study is collected from Census of India, 2001 and 2011 for five regions viz. Northern, Southern, Eastern, Western, and Central regions. The 34 variables are studied and grouped into five indices viz., Amenities, Economic Development, Assets, House Quality, and Socio-Demographic by using principle component analysis. To understand regional disparities, Descriptive Statistics and correlation and regression model with and without inclusion of lagged urbanization is done. Analysis shows across 2001 and 2011 census, metropolitan cities consistently outperformed non-metropolitan Class I cities in all five indices, with Northern, Southern, and Western regions showing higher amenities, assets, housing quality, and socio-demographic conditions than Eastern and Central regions, alongside region-specific shifts such as economic improvements from Eastern to Western in metropolitans, rising main-worker shares in Western region cities. All the regions except Western region of metropolitan cities show positive correlation with the urban population for all the variables. Across regions, economic variable dominates in Metropolitan region and socio-demographic variable dominate in nonmetropolitan class I cities and inclusion of lagged urbanization in the model shows explanatory of power of the model increases. It is concluded that urban policy must be differentiated by city class and region. Strengthening literacy and work participation in non-metropolitan class I cities in India.

## Renewable Energy and Sustainable Development for Viksit Bharat: An Economic Analysis

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India's ambitious goal of 500 GW of renewable energy capacity by 2030 is a key part of the Viksit Bharat vision. This aims to separate economic growth from environmental harm. While installed capacity has increased, important questions remain about whether this shift is delivering the expected benefits of sustainable development: economic growth through investment and jobs, and environmental health through lower emissions and resource conservation. Current studies often look at capacity or emissions separately. This research addresses this gap by providing a comprehensive assessment of the benefits and trade-offs of India's renewable energy growth from 2016 to 2025. The main goal is to evaluate the relationship between renewable energy use and key sustainable development factors. Using secondary data from the Ministry of New and Renewable Energy (MNRE), Central Electricity Authority (CEA), National Accounts Statistics (MOSPI), and IPCC emission factors, this study is expected to achieve its objectives. The study's assumption is that while India's renewable energy expansion is boosting energy security and attracting green investment, which supports the Viksit Bharat vision, truly separating economic growth from environmental impact will require a faster reduction in fossil fuels along with effective grid integration and storage policies. The findings would provide evidence-based policy recommendations to enhance



the sustainable development benefits of the energy transition. Keywords: Renewable Energy Transition, Sustainable Development, Viksit Bharat, Green Economy, Co-benefits Assessment.

### **Family Planning Counselling and Practice of Modern Spacing Methods in Sikkim**


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In India, conversion of knowledge into practice of family planning methods is not up to the mark. The conversion among the eligible women could be due to multiple factors. In, the Northeast region of India, seven sisters states have higher knowledge of contraceptive methods with mixed level of contraceptive prevalence, in Sikkim the difference is relatively lower. The gap would be lower, if the facilitative measures are taken to adopt an appropriate method. Availability of counselling services is the basic requirement and information on many dimensions of counselling is required to improve the situation. Sikkim continues to have higher level of CPR and unmet need and lower level of fertility and FP counselling services. The objective of the paper is to understand the prevailing situation of quality of family planning services in terms FP counselling practices in Sikkim, as compared to other states. Methods and materials: NFHS-5 fact sheets for the state and districts of Sikkim are used. Discussion: In Sikkim, 69.1 per cent is the CPR for any method. The most common modern spacing methods used by currently married women in Sikkim is pills (18.2%), condom (9.3%) and IUD (6.2%). In the high prevalence situation, 39.1 percent of the current users were not told about the side effects of the current method. It means that these many current users may continue the methods further or discontinue, since they did not have proper direction to proceed further. If no discontinuation, current practice might have gone up after nullifying the discontinuation rate of 35 percent in Sikkim for all modern methods. Another dimension is that 81.1 percent of non-users were left without any family planning discussion. The main policy implication is method specific counselling, especially on pills and IUD.

### **Child Malnutrition and Health in India: Need for Holistic Health Policy and Governance**

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Child malnutrition in India is a complex, multi-dimensional problem caused by a combination of social, economic, health, and environmental factors. Ensuring good child health is quite essential not just for individual development, but for the nation's sustainable development leading to attain Viksit Bharat by 2047. Hence, ensuring child nutrition, healthcare, sanitation, education, and women's empowerment are key to securing a healthier future for India's children. Health plays a king-pin role in acquisition and management of "life-cycle wealth" by way of building "human capabilities" in India. Maintaining good human health of the people in general and child in particular has become a distinct key issue in public policy discourse. In India, efforts have been made to reduce infant and child mortality rates by implementing several malnutrition and child healthcare programmes. It is, therefore, imperative to explore the underlying causative factors that cause the malnutrition and also impede the reduction in infant mortality. Against this background, an effort has been made to examine the extent of malnutrition and infant mortality rate by rural-urban, gender and social groups in India and to identify the contributing factors and offer policy prescription for better health and well-being of children for attaining the Viksit Bharat by 20247. The study is based on secondary data to be collected from the National Family Health Survey, Ministry of Health and Family Welfare, Directorate General of State Health Services, Statistical Report, Registrar General of India, Economic Survey of India. The data on malnutrition and IMRs by rural-urban areas, gender and



social will be collected at all India level from the various reports of NFHS. The factors affecting the malnutrition or IMR will be collected from major states for 2020-21. The correlation matrix will be estimated to identify the factors that affect malnutrition and or IMR at all India level.

### **Social Science - Public Health Research Collaboration in India**

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**Introduction:** The state of collaboration between social sciences and public health sciences is important especially from the perspective of scrutiny of social determinants of health (SDH). Past studies have shown that institutional and other means of collaborations are limited. **Objectives:** This analysis aims to re-assess the state of social sciences and public health sciences research collaboration in India; and put forward suggestions to strengthen the extent of collaboration. **Methods:** The following steps were adhered to: (1) Review of literature; (2) Criteria-based description of existing system; (3) Perceived gaps in the system; (4) Identification of specific obstacles in strengthening collaboration between social sciences and public health sciences areas; and (5) describing steps to strengthen existing system and launching of new initiatives. **Results:** A PubMed-based study showed that the proportion of studies from social sciences areas in health research is less than one percent. The present study confirms that the trend has not changed much. Formal collaboration between Indian Council of Medical Research (ICMR) and Indian Council of Social Science Research (ICSSR) has contributed in enhancing collaboration, but has little overall impact; and the initiative is not self-sustaining. This study recommends more ICMR-ICSSR joint initiatives in the following areas: Policy formulation; joint research projects on SDH; funding opportunities; scholarships, fellowships for students, research scholars, faculty and researchers including independent researchers, advocacy experts, policy makers, programme planners; access to research resources; tie-up between institutions; using national survey datasets for research; establishing institutional framework; signing a new MoU. **Conclusions:** This study looked at the state of social science public health collaboration and suggests measures to strengthen the system, and make it self-sustaining. Scrutiny of SDH is a vital link that bridges social sciences and public health sciences and so inter-council initiatives focusing on this area is recommended.

### **Prevalence and Determinants of Non-Communicable Chronic Diseases in the Urban Slums of Bhubaneswar: A Cross-Sectional Study**

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The main objective of this study is to understand the prevalence and determinants of chronic non-communicable diseases in the urban slums of Bhubaneswar. A cross-sectional study was conducted, involving 1269 individuals. Univariate Chi-square and multiple logistic regression were used to determine the significant predictors associated with the prevalence of chronic non-communicable diseases. Approximately 19% of individuals reported having at least one chronic disease condition in the slum areas of Bhubaneswar. Cardiovascular disease was the most prevalent (42.6%), followed by Diabetes (40.3%), and arthritis (17.2%). The study also revealed that Individuals with elevated blood pressure, inadequate physical activity, overweight, and a higher WHR were more likely to suffer from a chronic illness in the slum population. Our findings suggest an urgent need for community-based interventions at various levels, including health promotion, prevention, early diagnosis, and treatment.



## Utilization of Public Healthcare Facilities in India: Evidence from the Demographic Health Surveys

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Post-independent India's healthcare services were predominantly delivered through the three-tier healthcare system until the introduction of private stakeholders during 1990s. Presently, seven out of ten rural people depend on public healthcare facilities for healthcare seeking and treatment. The study aims to understand the dynamics of public healthcare facility utilization in India in the last two decades. We have analysed the four rounds of National Family Health Surveys with a representative sample (NFHS-2 to NFHS-5). Results demonstrated a significant increase in utilization of public healthcare facilities from NFHS-2 (29%) to NFHS-5 (50%). At the subnational level, states including Rajasthan, Chhattisgarh, Madhya Pradesh and Odisha have shown a significant increase in the utilization of public healthcare facilities in India. A household with less than three members is more likely to access public healthcare services than households with 4 or more members. The households belonging to Scheduled Tribes are more likely to use public healthcare facilities compared to the Other Backward Class and Scheduled Castes in all rounds of NFHS. Trend analysis depicted that the quality of public facilities has significantly transformed over the last 15 years, and it has significantly improved from NFHS 2 to NFHS 5. In conclusion, the utilization of public healthcare facilities has significantly increased with the improvement in the quality of services delivered in health facilities in India.

## Digital Health for Whom? A Sociological Study of Access, Inequality, and Wellness in India's Expanding Digital Health Ecosystem

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India is experiencing fast growth in digital health services, including online consultations, electronic prescriptions, wellness applications, and large national efforts such as the Ayushman Bharat Digital Mission. These developments are changing the way people seek medical support, care for themselves, and relate to the health system. While this expansion is often seen as progress toward a more connected nation, it also raises important sociological questions about access, digital trust, literacy, and everyday patterns of use. This study examines how people adopt digital health tools and argues that adoption is shaped by social conditions as much as by technology. Education, income, age, gender, residence, and changing cultural ideas about wellness influence how individuals understand and use digital services. The study has three main goals. First: To explore who uses digital health services and to what extent. Second: To understand how social structures guide behaviour and engagement. Third: To consider how digital platforms influence ideas about wellness, responsibility, convenience, and the experience. The research draws on secondary data from national surveys, government documents, and academic studies. Using a qualitative documentary method supported by thematic analysis the study reviews trends in access, infrastructure, digital readiness, and experience. The findings reveal an evolving landscape. Digital platforms have increased convenience and reduced distance and encouraged new habits of self-tracking and preventive care. At the same time limitations in digital skills, internet quality, trust in online consultations and awareness of available services determine who benefits consistently. The study concludes that digital health must be understood as part of everyday social life rather than as a simple technological improvement. Strengthening digital literacy, creating more intuitive designs, & supporting a mix of online and in person care are essential for building trust & encouraging broad participation as India advances toward the vision of Viksit Bharat.

## Social Representations of Mental Illness: Understanding Multiplicity of Meanings

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The present paper aims to understand the social representations of mental illness. Specifically, the paper attempts to understand the cognitive polyphasia in the social representations of mental illness. The focus of the paper is to understand the collective meanings that structure the social representations of mental illness among educated urban Indian youth. Social representations approach is employed as a theoretical framework in the present study because of its emphasis on collective nature of understanding. The study presented in this paper was conducted on fifty-two students within the age range of 18 to 20 years. Most respondents belonged to the urban educated middle-class background. The meanings and explanations of mental illness expressed by the respondents could be determined by their social and cultural background. Respondents were asked to provide responses to a questionnaire consisting of seven open ended questions aiming to explore conceptualization of mental illness, causal factors, consequences, treatment options and traditional beliefs. Qualitative content analysis was done to analyze the responses of participants. The social representations reflected social-normative, biological and psychological differentiations and traditional beliefs along with scientific ones. These representations are functional in nature and outline an identity that is linked to both family values and belief in fulfilling of norms, and traditional healing on one hand, and to notions of primacy of science and modern education on the other. The paper concludes that social representations demonstrate cognitive polyphasia or multiplicity of meanings that are embedded in the cultural context. These meanings can provide important framework for crafting a plan of intervention.

## Burden of Diseases and Epidemiological Transition Status at the National and Sub-National Level in India: A Gender and Ageing Perspective

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Our study examines the disease burden, its distribution, and epidemiological transition across Indian states, emphasizing ageing and gender perspectives. Using data from the World Population Prospect, Indian Census Projections, SRS, and MCCD, we estimated Causes of Death, Years of Life Lost (YLL), Years Lived with Disability (YLD), and Disability-Adjusted Life Years (DALYs) for 2020. The Epidemiological Transition Ratio (ETR)—the ratio of DALYs from infectious, nutritional, maternal, and perinatal diseases (INMPDs) to non-communicable diseases (NCDs)—was used to assess transition levels. NCDs were the leading contributors to the disease burden, causing 60% of deaths, 51% of YLLs (98.7 million), 71% of YLDs (79 million), and 58% of DALYs (177 million). INMPDs, Injuries, COVID-19, and other causes contributed less than 20%. Ageing played a critical role, with INMPDs more prevalent in younger populations, while NCDs dominated among older adults, reflecting the shifting health challenges of an ageing population. Gender disparities were evident, with males experiencing a significantly higher burden of YLLs and DALYs than females across all major causes. State-level variations revealed that some states face a dual burden of diseases while others are further along the epidemiological transition. COVID-19 also emerged as a significant contributor in 2020. Our findings underscore the need for targeted health strategies considering ageing and gender disparities. Strengthening health systems to prioritize prevention, early detection, and management of chronic diseases is essential to effectively address the challenges of India's demographic and health transition. It helps to plan strategies for the ageing population of India.



## Growing Concerns of Hysterectomy in India: Evidence from National Family Health Surveys

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Life expectancy in India has increased recently, especially among women, leading to more women experiencing reproductive and post-reproductive transitions. Hysterectomy, often resulting in surgical menopause, is an important but underexplored health issue, particularly at younger ages in India. This study used data from multiple rounds of the National Family Health Survey (NFHS) to examine prevalence patterns and predictors. Spatial analysis revealed the highest hysterectomy rates in Bihar, Telangana, Andhra Pradesh, and Karnataka, with early-age cases concentrated in Assam, West Bengal, Telangana, and Andhra Pradesh. Excessive menstrual bleeding was the most common cause. Logistic regression showed strong associations with rural residence, low education, poorer economic status, obesity, anemia, high parity, and contraceptive use as significant correlates. The results highlight the urgency of improving women's education, nutrition, and gynecological health awareness. State-specific interventions, informed consent before hysterectomy, and life-course approaches are essential to reduce unnecessary hysterectomies and enhance reproductive health.

## Is AYUSH Healthcare Utilization a Predictor of Wellness: Evidence from LASI

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Ministry of AYUSH was introduced in 2014 with the clear motive to move traditional systems from the periphery of public health into the mainstream. This evolution created a dedicated governance structure designed to prioritize research, standardization, and policy for the systems of Ayurveda, Yoga, Naturopathy, Unani, Siddha, and Homoeopathy. Hence, empowering AYUSH systems as structural partners in health maintenance and prevention. Though, a significant gap exists in isolating the direct structural influence of sustained AYUSH engagement on population well-being. This study addresses this by utilizing Self-Rated Health (SRH) as the primary outcome. This goal is to pivot from studying simple access to directly analyzing the active systemic impact of AYUSH exposure on maintaining positive perceived health. Methods – The research utilizes the LASI Dataset to apply Random Forest (RF) Classification framework to predict the binary maintenance of good self-reported health and its core findings were derived from the Gini Feature Importance metric. Results – The model predicted that AYUSH Utilization has emerged as the second most powerful predictor of good self-rated health after Chronic Disease. This indicated that the engagement with the AYUSH system is a stronger, non-clinical determinant of positive perceived health than basic socio-economic factors. Conclusion – AYUSH Utilization emerging as the second most powerful predictor of wellness, is a critical outcome. This result establishes that the system's benefit is not merely tertiary but a strong driver in sustaining positive health perception. This validated the policy focus on AYUSH for promotive and maintenance-based care. The quantitative evidence mandates that public health policy prioritize the full integration of AYUSH into mainstream wellness frameworks, thereby empowering communities and directly supporting the long-term vision.



## Drivers and Dynamics of Seasonal Migration in West Bengal: Evidence from NSS 64th Round Data 2007-08

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Seasonal migration in West Bengal was influenced by a complex interplay of demographic, socio-economic, and cultural factors. This study investigated seasonal migration patterns in West Bengal, India, using data from the National Sample Survey Office (NSSO) 64th round (2007-08). Seasonal migration had served as a crucial livelihood strategy for impoverished households, driven by the need for additional income. The research aimed to identify the determinants and socio-economic characteristics of seasonal migrants in West Bengal through logistic regression analysis. The analysis highlighted that West Bengal exhibited a higher propensity for inter-district and inter-state urban-to-urban seasonal migration. Districts such as Darjeeling, Birbhum, Burdwan, Bankura, and Purulia experienced high intra-state migration, suggesting a preference for within-state seasonal movements, while districts like Jalpaiguri, North Dinajpur, South Dinajpur, Malda, and Kolkata showed high rates of inter-state migration. Regression results indicated that younger individuals, males, rural residents, married persons, and those from socio-economically deprived communities, such as Scheduled Castes and Scheduled Tribes, were more likely to migrate seasonally. Education levels, household size, landholding, and economic status significantly influenced migration decisions. Specifically, individuals with lower economic status and smaller landholdings were more prone to migrate due to limited local opportunities. The study also revealed that higher education correlated with higher migration rates, possibly due to better access to information and employment networks. Gender, marital status, caste, religion, and household size played critical roles in determining migration patterns. The analysis showed that men were significantly more likely to migrate than women, reflecting traditional gender roles and economic responsibilities. Married individuals, especially those with larger households, were more inclined to migrate to support their families financially. The study suggested that policy interventions should be multifaceted, targeting the specific needs of the most affected demographic groups.

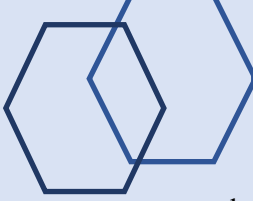
## Trends and Determinants of Maternal Healthcare Utilisation in Bihar: Evidence from NFHS-3, NFHS-4 and NFHS-5

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Maternal healthcare utilisation remains a critical challenge in Bihar despite steady national progress. Using data from NFHS-3 (2005–06), NFHS-4 (2015–16), and NFHS-5 (2019–21), this study examines how maternal healthcare utilisation—measured through ANC 4+ visits, institutional delivery, and PNC within 48 hours—has evolved over fifteen years, and identifies factors that continue to shape access and utilisation across socioeconomic, gender, digital, clinical, and health-system domains. The results show substantial improvements, particularly in institutional delivery, which increased from 19 percent in NFHS-3 to 76 percent in NFHS-5. This growth is strongly associated with policy measures such as JSY/JSSK cash transfers, expansion of public health facilities, and intensive ASHA mobilisation. However, antenatal care remains the weakest component of the continuum. Only 35 percent of women received four or more ANC visits in NFHS-5, and ANC quality—measured through essential check-ups such as BP, blood/urine tests, and weight monitoring—remains inconsistent. The analysis highlights persistent socioeconomic inequalities in maternal healthcare utilisation in Bihar. Women from poorer households, those with no schooling, SC/ST groups, and rural areas continue to experience disproportionately low utilisation across all three NFHS rounds. Gender-related constraints—especially domestic violence, low autonomy, and patriarchal household norms—emerge as powerful barriers to timely and adequate



maternal care. Conversely, digital access, particularly mobile ownership and internet use, has become an important enabling factor in NFHS-5, reflecting the growing role of information and communication in shaping health behaviours. Health-system barriers remain substantial, including long distances to facilities, out-of-pocket expenses, and the continuing shortage of female providers at public facilities. These challenges particularly affect women in remote and socioeconomically disadvantaged regions. Overall, although Bihar has made significant gains in institutional delivery, progress in ANC, PNC, and equitable utilisation remains limited. Targeted interventions addressing structural, gender, and digital divides are essential for accelerating maternal health improvements and achieving SDG-3 in Bihar.

### **Depression among Parents Due to Child Loss: A study of Bankura District, West Bengal**

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**Background:** The death of a child is one of the most distressing life events, often leading to profound psychological consequences for parents. Depression following child loss remains underexplored in rural Indian settings, where social and cultural contexts influence coping mechanisms and mental health outcomes. This study assessed the prevalence and determinants of depression among bereaved parents in the Bankura district of West Bengal. **Methods:** A community-based cross-sectional survey was conducted among 500 parents who had experienced the loss of a child. The Patient Health Questionnaire-9 (PHQ-9) was used to assess depression severity. Descriptive statistics summarized socio-demographic, child-loss, and psychosocial characteristics. Binary logistic regression identified independent predictors of moderate-to-severe depression (PHQ-9  $\geq$  10), with results reported as adjusted odds ratios (AOR) and 95% confidence intervals (CI). **Results:** The mean PHQ-9 score among respondents was  $11.8 \pm 6.2$ . Overall, 60% of participants exhibited moderate-to-severe depression. Depression severity was higher among females (AOR = 1.30, 95% CI: 1.02–1.70,  $p = 0.03$ ), those with low social support (AOR = 2.20, 95% CI: 1.55–3.10,  $p < 0.001$ ), and respondents with no surviving children (AOR = 1.80, 95% CI: 1.15–2.82,  $p = 0.01$ ). Belonging to Scheduled Tribe (AOR = 1.84,  $p < 0.001$ ) and Muslim (AOR = 1.25,  $p < 0.001$ ) groups also significantly increased depression risk. Parents with a history of mental illness were over twice as likely to experience depression (AOR = 2.50, 95% CI: 1.55–4.03,  $p < 0.001$ ). **Conclusion:** Depression is a major public health concern among parents who have lost a child, especially among those with limited social and emotional support. The study underscores the need for integrating grief counselling, mental health screening, and community-based psychosocial interventions into primary healthcare services to support bereaved parents in rural India.

### **Determinants of Catastrophic Health Expenditure in Developing Economies: Evidence from Indian Households**

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The achievement of universal health coverage (UHC) in developing economies critically depends on minimizing the financial burden caused by high out-of-pocket (OOP) health payments. This study investigates the determinants of catastrophic health expenditure (CHE) among Indian households using nationally representative data from the Household Consumption Expenditure Survey (HCES) 2023–24. Employing multivariate logit framework, the study identifies key socioeconomic and demographic factors influencing CHE. Findings reveal that the incidence of CHE has increased over the past two decades, disproportionately affecting poorer, rural, and female-headed households. Households with elderly members were most vulnerable, reflecting the growing financial strain

associated with India's ageing population. The likelihood of CHE was significantly higher among those using private health facilities, whereas households with health insurance coverage and higher educational attainment of the household head were relatively protected. The results underscore persistent inequities in access to and financing of health care, driven by low public investment, inadequate infrastructure, and limited financial protection mechanisms. Strengthening public health expenditure, expanding risk-pooling and insurance coverage, and enhancing access to affordable quality care, particularly for marginalized and ageing populations—are essential for advancing UHC and reducing health-related poverty in India.

### **Determinants of Non-Communicable Disease Screening among Women in India**

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**Background:** Non-communicable diseases (NCDs) have become a major global health concern, contributing significantly to morbidity and mortality worldwide. Early detection through systematic screening is vital for effective prevention and management. Women's autonomy in healthcare decisions has been recognised as a key factor influencing health-seeking behaviour. This study explores the association between women's autonomy and the uptake of NCD screening in India using nationally representative data. **Methods:** This cross-sectional study utilised data from the fifth round of the National Family Health Survey (NFHS-5, 2019–2021), encompassing 724,115 women aged 15–49 years. The outcome variables included self-reported screening for blood pressure, blood sugar, and cancers (oral, breast, and cervical). Independent variables covered decision-making autonomy, mobility autonomy, and socio-demographic characteristics. Multivariable logistic regression models were applied to estimate adjusted odds ratios (AORs) with 95% confidence intervals (CIs). **Results:** Among respondents, 62.97% reported ever undergoing blood pressure screening, 30.01% had blood sugar tests, 1.07% had cervical cancer screening, 0.56% underwent oral cancer screening, and 0.44% were screened for breast cancer. Age, education, wealth, media exposure, and mobile phone ownership were consistently associated with higher screening uptake. Women from Scheduled Tribe communities had significantly lower odds of screening participation. Although autonomy indicators showed positive associations in bivariate analyses, these relationships diminished after adjusting for socio-demographic variables. **Conclusions:** Socio-economic and structural determinants play a more decisive role in women's participation in NCD screening than autonomy alone. Policies must prioritise equitable access to healthcare and health information for disadvantaged groups, while simultaneously fostering women's empowerment to ensure inclusive screening coverage.


### **Migration for Medicine: Health Related Travel and it's Social Impact on Families in Rural Poonch**

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The studies investigate the various aspect that force families in rural area of Poonch district, Jammu and Kashmir, to permission their homes in hunt of healthcare. The Poonch rural area faces lake of skilled medical professionals, short problem-solving facilities, and limited essential equipment. Patients are frequently referred to distant hospitals, while unreliable not a proper roads connectivity and inadequate ambulance services further worsen delays. In several border-adjacent villages, period cross-border firing and military restrictions also obstruct mobility, making timely access to healthcare uncertain and often dangerous. Outdoor divide these structural gaps, the study examines the broader social significances of medical travel. The burden of disease of searching treatment



outside the district ranges well outside the patient and affects the entire household. Families experience significant financial burden due to expenses related to transportation, medicines, diagnostic tests, accommodation in urban centres, and loss of income caused by prolonged absence from work. Sensitive and social burdens are equally severe paid workers face concern, physical tiredness, and disturbances in childcare, elderly care, and other daily responsibilities. Although some households receive remittances from relatives working outside the region or abroad, these funds provide only partial financial relief and do not address the deeper emotional, psychological, and social challenges created by repeated medical travel. Overall, this study, shows that migration for healthcare in rural area Poonch is not a volunteer choice but a survival approach shaped by structural inequalities in the healthcare system. Key Findings of the study focused on the need for burning policy interventions to support local healthcare infrastructure, improve road connectivity, and expand emergency medical services to ensure equitable access to dignified healthcare for all rural area of District Poonch. Keywords: Health related migration, Rural healthcare access, social impact, Cross-border conflict, medical travel challenge.

### **Urban Ageing and Loneliness: Unveiling the Interplay of Family, Living Arrangements, and Social Relationships in India**

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Elderly people are expected to be particularly vulnerable to experiencing loneliness due to a lack or loss of loved ones and fewer social connections compared to younger generations. Additionally, older persons in different living arrangements make different social connections based on their specific needs. However, to date, no study has explored the variation in social connections by living arrangements and how this variation is associated with loneliness. To fill this lacuna, this study aims to investigate the complex interplay between living arrangements, social relationships, and loneliness among older urban Indians. A sample of 378 older individuals aged 60 years and above was recruited using a cross-sectional primary survey in the Kalyani Municipal Area (a satellite town) located in the Nadia district of West Bengal, an eastern state of India. Bivariate analysis, using Chi-squared test and one-way ANOVA, and linear regression analysis were employed to fulfil research objectives. The findings reveal that respondents in co-residing living arrangements maintain larger social networks than those living alone. Being co-resident with family members was found to be significantly negatively associated with loneliness. Additionally, the oldest-old (80+ years) women having no education and being widowed are significantly associated with higher levels of loneliness. Therefore, policymakers may design context-specific social interventions to enhance their opportunities to create new social connections that meet their needs.


### **Promoting Healthy Eating Through Food-Label-Based Nudges: Integrating Behavioural Insights into India's Wellness Agenda Using Global Evidence**

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India is experiencing a rapid health transition marked by rising rates of obesity and non-communicable diseases. Key contributors are increasing consumption of ultra-processed foods, high sugar and fat intake, and limited nutritional awareness. Existing health and wellness strategies of the government — such as awareness campaigns and educational messaging rely on the assumptions of rational decision-making. However, decades of behavioural research shows food choices are often automatic, shaped by environmental cues rather than conscious evaluation. This underscores the need for behavioural insights in India's nutrition policy framework. Globally, several



countries have implemented behavioural “nudges” effectively, particularly front-of-pack labelling (FOPL) systems, which provide simple, salient cues that help consumers identify unhealthy products and make healthier choices without restricting freedom. India is currently at a formative stage of designing its own FOPL system, presenting an important opportunity to integrate global evidence into the country’s wellness agenda. This study has two objectives: (1) to analyse existing health-related government initiatives in India and identify its limitations in their ability to influence healthy eating habits; and (2) to review global government-led FOPL interventions—including Chile’s warning labels, France’s Nutri-Score, Mexico’s stop-sign labels etc.—and assess their effectiveness and relevance for the Indian context. A narrative policy review combined with thematic analysis was conducted. Indian policy documents and health strategies were examined to identify its shortcomings. Global studies were identified using targeted search terms (“front-of-pack labelling,” “warning labels,” “Nutri-Score,” “behavioural nudge,” “healthy eating policy”), to examine its effectiveness. Findings reveal that India’s current framework remains largely voluntary and low in salience, limiting its effectiveness. Evidence from global FOPL systems demonstrates substantial improvements in consumer understanding, reductions in unhealthy food purchases, and large-scale reformulation. Integrating such behavioural insights into India’s nutrition policy could strengthen public health outcomes and advance the goals of the country’s broader wellness agenda.

### **Is Underage Marriage Still Prevalent Among Women in India?**

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Despite legislative efforts to forbid marriages below the age of 18, underage marriage continues to affect a considerable proportion of girls in India. This paper examines the long-term trends and the socio-economic determinants of underage marriage among women aged 20-24 years using data from all five rounds of the National Family Health Survey (NFHS), conducted between 1992-93 to 2019-21. In this paper, underage marriage is defined as a first marriage taking place before the age of 18 years. Cross-tabulation and binary logistic regression analysis were conducted using SPSS-25. The prevalence declined significantly from 61.6 per cent in 1992-93 to 22.3 per cent in 2019-21, though considerable variation still persists across states, union territories, and districts. As per the latest information (2019–21), West Bengal has the highest percentage (41.5%) of underage marriages in India. The study identifies place of residence, educational attainment, and household wealth as the strongest predictors of underage marriage. Rural residence, low education, and economic disadvantage increase the likelihood of marrying before 18 by manifold, while higher education and improved wealth act as protective factors. The findings highlight that underage marriage remains a continuing challenge in India that is shaped by persistent socio-economic inequalities and regional disparities. Strengthening education, enhancing economic opportunities, and implementing targeted, context-specific interventions remain crucial for the elimination of underage marriage and advancement of the well-being of girls across the country.


### **Decomposing Caste-based Inequalities in Access to and Utilisation of Maternal Healthcare Services in India: A Pathway to Viksit Bharat**

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Adequate utilisation of maternal healthcare services (MHS) can enhance safe motherhood and ensure healthy child deliveries. However, coverage of MHS remains meagre in developing nations, particularly India, with notable disparities among socially marginalised groups, such as scheduled castes (SC) and scheduled tribes (ST). While



prior studies have examined the barriers and facilitators of MHS utilisation among marginalised women, limited attention has been given to caste-based (SC/ST and non-SC/ST) inequalities in MHS use. The present study thus aims to identify the factors contributing to inequalities in access to and utilisation of selected MHS, such as complete antenatal care (ANC), institutional delivery (ID), and postnatal care (PNC) within 48 hours of delivery among SC/ST women and their non-SC/ST counterparts. The analysis is based on a sample of 32,216 ever-married women aged 15–49 years from the 75th round of the National Sample Survey (NSS, 2017–18). Bivariate and non-linear (Fairlie) decomposition analyses were employed to fulfil research objectives. Overall, a higher proportion of non-SC/ST women received all MHS (ANC: 64% vs. 58.7%; ID: 90.7% vs. 78.2%; PNC: 96% vs. 81.7%) compared to SC/ST women. Additionally, factors such as maternal education, place of residence, wealth status, and availability of water on the premises were significant predictors, together contributing to 70–80% of the observed inequalities between caste groups. The findings suggest that policymakers may design context-specific interventions, including promoting girls' education, allocating adequate health resources (both physical and human), and organising awareness workshops using audio-visual aids, especially in rural areas, without hampering traditional beliefs. Finally, since healthcare schemes have begun reducing inequalities, re-evaluating current maternal healthcare policies remains crucial to minimise social discrimination in MHS utilisation further and achieve Sustainable Development Goal 3.1.

## Governance for Health System Resilience: A Systematic Review of the Conceptual Evolution and Empirical Evidence

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Health system resilience—the capacity of health systems to absorb, adapt, and transform in response to shocks—has gained global significance in the context of crises like the COVID-19 pandemic. Governance is a pivotal determinant of this resilience, involving leadership, decision-making, and stakeholder coordination to ensure health systems' sustainability and responsiveness. Yet, the empirical and conceptual understanding of the specific governance attributes that contribute to health system resilience in the face of shocks remains under explored. In this context, this study attempts to systematically review the existing literature from Post Ebola to Post Covid period i.e., from 2015 to 2025 to synthesize empirical evidence that link Governance and health system resilience. The core objective of this review is to identify the governance attributes most commonly associated with Health System Resilience across temporal, spatial contexts and across various shocks and to examine how the conceptualisation of governance related attributes of Health System Resilience has evolved in the last decade. For this purpose, a comprehensive search for empirical evidence is conducted across multiple sources. Only empirical studies published in peer reviewed journals, written in English and explicitly examining health system resilience in the context of any shocks will be selected for review. A thematic synthesis approach will be used to integrate the qualitative and quantitative insights, using the identification of recurring governance attributes. The researchers expect to identify the key governance attributes strongly associated with health system resilience like Adaptive Leadership, Decentralised Governance, Participatory decision-making, transparent crisis communication and community engagement. The study will also contribute to the existing theoretical frameworks by identifying major shifts in the conceptualisation of governance for resilience post Covid-19 pandemic.



## Health Shocks, Consumption Trade-offs and Insurance Protection: Evidence from India's 2023–24 Household Consumption Expenditure Survey

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Catastrophic health expenditures continue to pose a significant threat to household economic stability and wellness in India, particularly in the context of the national vision of Viksit Bharat and the goal of “wellness for all.” Using nationally representative Household Consumption Expenditure Survey (HCES) 2023–24 data, this paper examines how medical spending, both hospitalisation and non-hospitalisation, alters the allocation of household budgets across major consumption categories and food subgroups, and assesses whether Ayushman Bharat health insurance mitigates these trade-offs. The analysis constructs detailed measures of total and category-wise monthly consumption (food and its subcomponents, household consumables, education, transport and services, housing and taxes, and addictive goods) alongside medical expenditure shares, using ration card type as a wealth proxy and adjusting for household size and total expenditure in weighted linear regression models. On average, medical expenses account for nearly 7 per cent of total consumption, with a higher burden among rural households, pointing to greater vulnerability outside urban areas. Higher medical spending is significantly associated with reduced outlays on all major non-medical categories, with food showing a pronounced decline, as well as education, transport, and household consumables contracting. Disaggregated food analysis reveals particularly sharp cutbacks in milk and processed foods, followed by cereals, vegetables, fruits, and non-vegetarian items, signalling a deterioration in dietary quality and potential nutritional risk. Ayushman Bharat coverage appears to moderate the negative association between medical spending and food consumption; however, the actual receipt of insurance benefits among hospitalised households does not translate into significantly higher food expenditure, suggesting gaps in benefit adequacy, timing, or targeting. The findings highlight how health shocks can undermine both current well-being and future human capital formation, and underscore the need to strengthen financial risk pooling and enhance the effectiveness of public health insurance within India's broader wellness-oriented development agenda.


## Bridging the Digital Divide: Advancing Health Equity through Inclusive Digital Health Ecosystems in Meghalaya, India

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India's digital health vision places strong emphasis on universal wellness and equitable digital transformation of the health system. In Meghalaya, a state marked by diverse tribal communities, uneven digital infrastructure, and strong reliance on frontline workers—the rapid expansion of digital health initiatives such as the Ayushman Bharat Digital Mission (ABDM), telemedicine services, and electronic health records offers new opportunities but also exposes persistent inequities rooted in socio-economic, cultural, and geographic divides. This study examines how digital health interventions intersect with local social determinants of health and evaluates whether they promote or hinder equity in urban tribal contexts. The study employs a mixed-methods approach, including a household survey, in-depth interviews with program administrators, healthcare providers, and a desk review of national and state-level digital health policies. The assessment focuses on digital readiness, literacy, device and network access, trust in technology, and awareness of digital health rights. Findings indicate that while digital health systems have the potential to strengthen continuity of care, enable longitudinal records, and support decentralised service delivery, inequitable access to smartphones, inconsistent connectivity, low digital health literacy, and limited culturally relevant interfaces disproportionately affect marginalised households. Frontline workers face training



gaps, interoperability challenges, and increased reporting burdens, which further constrain adoption. These barriers risk reinforcing existing social gradients in health unless governance frameworks intentionally embed equity. The analysis highlights the importance of context-specific, community-informed digital health strategies in Meghalaya, which should be grounded in cultural sensitivity, inclusive design, and robust data governance. By applying a health equity lens, the paper argues that achieving Wellness for All necessitates addressing structural inequities in conjunction with technological innovation. The study offers actionable recommendations to strengthen policy, implementation, and governance pathways for a more inclusive digital health ecosystem in Meghalaya.

### **Living Arrangements and Subjective Health among Older Persons: A Comparative Study of Punjab and Uttar Pradesh**

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In India, the family remains the most prominent living arrangement and primary source of care and support, significantly affecting health and well-being in later life. However, recent changes in family structure and rapid, unplanned urbanisation have altered the pattern of living arrangements among older persons. As such, it is imperative to investigate the role of living arrangements on subjective health status among older persons in two Indian states, Punjab and Uttar Pradesh. This study utilised data from the Longitudinal Ageing Study in India Wave 1 (2017-18), which interviewed a total of 31,464 individuals aged 60 years and above, including 968 from Punjab and 2,061 from Uttar Pradesh. Both bivariate and multivariate analyses were employed to address research objectives. Findings indicate that a higher proportion of older individuals in Punjab (25%) reported their current health status as poor compared to those in Uttar Pradesh (24%). Additionally, older individuals living alone had a significantly higher prevalence of poor self-rated health (SRH) in both Punjab (38.5%) and Uttar Pradesh (33.9%). Logistic regression analysis revealed that older persons living alone in Punjab were 1.5 times more likely to report poor SRH in comparison to their peers. While in Uttar Pradesh, older persons living with a spouse and children had 1.1 times higher odds of reporting poor SRH. Furthermore, women aged 80 years and above, with no schooling, being widowed, and residing in urban areas were significantly more likely to report poor SRH compared to their counterparts. These findings suggest that policymakers may consider living arrangements when designing interventions towards promoting healthy ageing.

### **Eligible Vs Actual Beneficiaries Population Dynamics: A District Level Assessment of Gaps in Maternal Health Care Interventions in India**

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This study investigates district-level variations in maternal and child health intervention coverage in India, focusing on whether observed increases in coverage result from expanded program reach or from declining eligible beneficiary populations. The analysis addresses the need for nuanced policy assessment in regions experiencing demographic shifts. District-wise coverage rates and eligible populations were estimated using a combination of national survey data, vital statistics and Census. Our analytical strategy disaggregated changes in coverage into components attributable to programmatic intervention reach and to demographic changes, particularly declining fertility. We projected the eligible beneficiary population using population projection methods and compared it actual beneficiaries. Results reveal that improvements in intervention coverage across many districts are often due to both increased program delivery and reductions in the eligible population. Consequently, coverage gains cannot

be interpreted solely as improvements in service utilisation; demographic trends play a substantial role. The findings support using integrated demographic and coverage analyses for planning and evaluating subnational health programs. This methodological study is of utmost significance as the population dynamics is changing rapidly in developing countries, particularly India, which is not accounted much while evaluating the effectiveness of interventions. The major contribution of this study includes: (1) methodological contribution by projecting population and crude birth rates at district level and providing estimates of eligible population for programmatic interventions at district level; (2) programmatic contribution by identifying the high-risk districts, after adjusting the impact of changing population dynamics. Although this study is conducted in the most populous state of India, but the same methodology can be applied to different states and countries in future.

### **Towards Universal Health Coverage: Assessing Health Care Financing for India's Ageing Population**

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Sustainable Development Goal (SDG)-3 emphasises the need for financial protection for universal health coverage and improvement of overall health. In the Indian context, the National Health Policy 2017 gives impetus to increasing government finances to health. India's total health expenditure (THE) per capita is lower than the LMIC average, and the country receives relatively low amounts of external funding for health, 2.1% of THE. However, India accounts for a total of 8% of the population as elderly in 2011, with a triple burden of diseases including communicable disease, non-communicable disease and injuries. Therefore, this study attempts to understand the level, patterns and determinants of health care insurance coverage among the elderly in India. Using data from the Longitudinal Ageing Study in India (LASI) – Wave 1 (2017-18), 31902 elderly were assessed using bivariate and multivariate regression techniques. The main outcome variables are health insurance coverage, social health insurance coverage, private health insurance, and employer health insurance. Findings reveal that around 82% of the elderly are receiving no health insurance in India. Further, elderly health insurance coverage varies by location, education, age, and religion; rural, educated, lower age group and tribal groups show better access. This is a critical finding that urban and non-tribal population show lesser access to any type of health insurance, this emphasises the need to expand the programmes to all segments of society. Economically better off population should be encouraged for private insurance and economically worse off population should be provided publicly funded health insurance, to achieve universal health coverage.


### **How is Life While Seeking Parenthood? Quality of Life of MAR Treatment Seekers in Northeast India**

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This study assesses the quality of life (QoL) of women undergoing medically assisted reproduction (MAR) in Northeast India, a region with limited evidence on infertility-related well-being. Using primary survey data from 200 women receiving MAR treatment in Guwahati, QoL was measured using the FertiQoL tool, which demonstrated good overall reliability (Cronbach's  $\alpha = 0.85$ ), though relational items showed lower consistency. Treatment seekers reported moderate QoL, with significant disparities across education, economic status, and type of health facility. Women with lower schooling, belonging to economically vulnerable households, and those seeking care in government facilities had poorer emotional, relational, and tolerability scores. Longer treatment



duration and extended waiting periods were negatively associated with emotional and core FertiQoL, while voluntary delay in pregnancy planning showed a positive association with emotional, mind–body, and social well-being. These patterns highlight how both socioeconomic disadvantage and prolonged, uncertain treatment trajectories exacerbate emotional strain during infertility care. There is a need for a holistic approach to MAR services that integrates psychosocial counselling, stress-management support, and financial protection, besides robust health infrastructure. Improving QoL among MAR treatment seekers requires addressing not only clinical needs but also the socioeconomic and emotional dimensions of infertility in Northeast India.

### **Are Higher Educated Youth in Kolkata City Faring Well Mentally? A Mixed-methods Study on Employment Status and Mental Health**

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**Background:** The intersection of mental health and socioeconomic conditions, particularly education and employment status, is well documented. However, limited attention has been paid to the unique mental health challenges encountered by highly educated youth in metropolitan contexts such as Kolkata City, India. **Methods:** A mixed-methods design was employed, combining quantitative data from 395 graduate youth aged 21–35 years with qualitative insights from 15 in-depth interviews exploring shared living experiences with individuals perceived to have mental health issues July 2022 to October 2022. Mental health outcomes were measured using the Depression Anxiety Stress Scale (DASS-21), alongside socio-demographic indicators. Multivariate ordered logistic regression models were used to identify predictors of elevated mental health symptomatology. **Result:** The findings revealed alarmingly high rates of extremely severe depression (15.2%), anxiety (16.7%), and stress (11.7%). Unemployment emerged as a critical determinant, with unemployed participants reporting significantly higher symptoms of depression and anxiety. Multivariate ordered logistic regression identified unemployment, female, unmarried youth and enrollment in advanced degree programs as significant predictors of elevated DASS-21 scores. **Conclusion:** These findings underscore the urgent need for multidimensional interventions. Integrating skill-based, employment-oriented training within graduate curricula may reduce vulnerability to unemployment, while institutionalizing regular psychological support services at the community and governmental levels could play a pivotal role in addressing the mental health burden among educated youth.

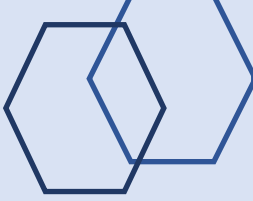
### **Challenges and Resilience: Experiences of Community Health Workers in Puducherry under the Ayushman Bharat Program**

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Community Health Workers (CHWs) play a pivotal role in bridging healthcare gaps in underserved regions, yet their contributions often come at a personal cost, particularly within large-scale initiatives like India's Ayushman Bharat Digital Mission (ABDM). This study explores the lived experiences, hardships, and struggles of CHWs in Puducherry, a union territory with unique socio-economic dynamics, as they implement and navigate the Ayushman Bharat program. Employing a mixed-methods approach, data were collected through in-depth qualitative interviews with forty-five community health workers and structured questionnaires administered to a survey sample of 100 participants. Thematic analysis of interviews revealed key challenges, including overwhelming workloads exacerbated by digital health integration, inadequate training on ABDM tools, financial insecurities due to irregular incentives, and emotional burnout from managing community expectations amid



resource shortages. Survey responses quantified these issues, with majority of participants reporting high stress levels citing internet connectivity and server issues. The results of this study highlight the need for policy reforms to improve community health worker performance including better remuneration, mental health resources, and better maintenance of online portals. By listening to the perspectives of community health workers themselves this article provides valuable suggestions that ensure the AB-PMJAY's long-term success in achieving universal health coverage.

### **Tempo-Spatial Pattern and Risk Factors of Gender Disparity in Infant and Child Mortality In India**

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**Background:** Child survival has improved significantly in India, yet the country still records the highest number of global under-five deaths. Males generally experience higher biological vulnerability in early childhood; however, South Asia has historically shown a male-biased child sex ratio. Despite biological factors, excess female under-five mortality persists across all Indian states, with the northern states showing the highest gender discrimination. Addressing sex differentials in child mortality remains essential for achieving gender equity and meeting SDG targets. This study examines the temporal and spatial patterns of gender-specific mortality in India using three rounds of NFHS data. **Data and Methods:** The study utilizes data from NFHS-3 (2005–06), NFHS-4 (2015–16), and NFHS-5 (2019–21). Logistic regression analysis was applied to estimate the probability of infant and under-five mortality based on selected sociodemographic and maternal-health predictors. **Results:** India has shown substantial reductions in infant and under-five mortality over the last decade. However, wide regional variations continue, with states such as Kerala demonstrating strong improvements while states like Uttar Pradesh, Bihar, and Chhattisgarh still report high mortality levels. Gender gaps have narrowed overall, though emerging disparities in rural areas remain concerning. Maternal education, antenatal care, and improved access to maternal health services significantly reduce mortality risks, emphasizing the critical role of women's healthcare. **Recommendations:** Greater focus is needed on strengthening child and maternal healthcare, particularly in rural and underserved regions. States with high mortality burdens require targeted interventions to meet national and global health goals. Enhancing primary healthcare facilities, expanding community-based health programs, and promoting family planning and birth spacing can collectively reduce infant and under-five mortality.


### **Empty Nest Phenomenon and Elderly Well-being in India: A LASI Wave 1 Analysis**

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**Background:** The departure of adult children from the parental home, known as the empty nest phenomenon, is an important demographic transition affecting the well-being of older adults worldwide. This study examines how empty nest status influences the physical, economic, social, and emotional well-being of elderly individuals aged 60 and above in India, using data from the Longitudinal Ageing Study in India (LASI) Wave 1. As India experiences rapid population ageing and shifts in family structures, understanding these dynamics is essential for strengthening support systems for older adults. **Data and Methods:** The study utilizes LASI Wave 1, a nationally representative survey capturing comprehensive information on health, economic conditions, and social engagement among adults aged 45+. The analysis focuses on the elderly (60+), defining “empty nesters” as those living without any children in the household. Logistic regression models were applied to assess associations



between empty nest status and well-being outcomes, adjusting for demographic and socioeconomic factors to identify independent effects. Results: LASI data show that 26.78% of elderly Indians live in empty-nest households. While differences in social and emotional well-being were limited, notable disparities emerged in physical and economic dimensions. Unadjusted results showed higher economic well-being among those living with children (OR: 1.81). After adjustment, empty nesters were less likely to report good physical well-being (OR: 0.92). Non-empty nesters continued to show higher economic well-being (OR: 1.83), particularly among wealthier and more educated groups, with modest benefits also observed for social well-being (OR: 0.87). Conclusion: The study demonstrates that empty nest status significantly affects physical and economic well-being among older adults in India. The presence of children serves as an important source of economic security and caregiving, underscoring the need for targeted policies to support empty nest elderly

### Gender and Age Differentials in Water Borne Disease among Adults in India: Evidence from Longitudinal Ageing Study of India (LASI)

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In India, the incidence of acute and chronic diseases among the elderly population is approximately 25% and 45%, respectively. In general, men suffer more and die more and thus accumulate higher numbers of Disability Adjusted Life Years (DALYs). However, recent evidence indicates that such a trend is reversed in the older age groups, wherein females have higher rates for most conditions. Water-borne diseases remain a public health problem, mostly among older people, from a poor and unhealthy water supply. Limited research has investigated the age- and sex-specific water-borne disease patterns in older adults. The current study proposes to determine the burden of the three leading water-borne diseases in India—jaundice/hepatitis, diarrhoea/gastroenteritis, and typhoid—among the elderly Indian population and to find out their main socio-demographic and environmental predictors. For the analysis, the Longitudinal Ageing Study in India (LASI) Wave-I (2017–2018) data were used, consisting of a representative sample of 65,384 people aged 45 and over. Univariate, bivariate, and binary logistic analyses were utilized to examine the data. Females showed lower odds of jaundice/hepatitis compared to males across all age categories, but the differences were not statistically significant. In contrast, women had higher odds of diarrhoea through all age groups—45–59 years (AOR: 1.18, 99% CI: 1.09–1.29), 60–74 years (AOR: 1.24, 99% CI: 1.13–1.36), and 75 years and above (AOR: 1.30, 99% CI: 1.10–1.54). Likewise, women experienced higher odds of having typhoid in the 45–59 years (OR: 1.23, 99% CI: 1.12–1.35) and 60–74 years (OR: 1.27, 99% CI: 1.13–1.42) cohorts. Therefore, our study concludes that women had higher prevalence of water borne disease than men and found that the availability of proper sanitation facilities and safe drinking water played a crucial role in lessening the occurrence of all three diseases.


### Travel Burden for Inpatient Health Care by Disease Severity among Older Adults in India

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Background: The relationship between population ageing and access to inpatient care by travel distance is a growing public health concern in India. Methodology: Using nationally representative data from the Longitudinal Ageing Study in India (LASI 2017–18), this study analyzes disease-specific travel distances for inpatient care among 4,526 older adults (male-2219 and female-2307) aged 60 and above. It combines weighted descriptive analysis, spatial mapping, and ordered logistic regression to examine the distribution and determinants of travel



burden. Results: Nearly three-fourths of older adult inpatients seek care for acute and chronic illnesses, while about 15% access inpatient services for surgery, with this pattern holding across genders. Travel distance varies by disease type: patients with acute conditions generally access care within 0–10 km, whereas those undergoing surgery often travel 61–100 km or more. Older adult males tend to travel longer distances for chronic and surgical care, while females are more likely to access nearby care for acute illness. The regression analysis confirms that travel distance is significantly associated with disease type: compared to acute conditions, the adjusted odds of traveling longer distances were 1.51 times higher for chronic illnesses (AOR: 1.51, 95% CI: 1.32–1.73), 1.39 times higher for injury/accident (AOR: 1.39, 95% CI: 1.13–1.71), and 2.18 times higher for surgical care (AOR: 2.18, 95% CI: 1.83–2.59). Gender-stratified models show that men consistently travel farther, especially for chronic (AOR: 1.78) and surgical (AOR: 2.29) care, whereas women's odds, though elevated, are comparatively lower (chronic AOR: 1.31; surgery AOR: 2.09). Conclusion: These findings underscore the urgent need for targeted investments in healthcare infrastructure, decentralised service delivery, and age-sensitive interventions like mobile health units and telemedicine. As India's ageing population grows, addressing travel-related barriers to care is vital to ensuring equitable and effective health access for older adults.

### Exploring Time Poverty in India: Prevalence, Determinants and its Association with Health Behaviours

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This study examines the prevalence, determinants, and association of time poverty with health behaviours in India among individuals aged 15 and above, using data from the Time Use Survey-2019 conducted by the National Statistical Office (NSO). Time poverty, defined as working over 150% of the median work time (720 minutes/day), affects 4.1% of males and 5.1% of females, with significant variation across socio-demographic groups. Women are more likely to experience time poverty, particularly married individuals (6%) and casual labourers (17.5%). Salaried employees report the highest odds of time poverty (AOR: 12.2;  $p < 0.001$ ), followed by casual labourers (AOR: 6.3;  $p < 0.001$ ) and self-employed individuals (AOR: 5.8;  $p < 0.001$ ) compared to homemakers. Urban residents (AOR: 1.6;  $p < 0.001$ ) and wealthier households (AOR: 1.5;  $p < 0.001$ ) exhibit higher prevalence, while older adults (AOR: 0.3;  $p < 0.001$  for age 60+) and graduates (AOR: 0.5;  $p < 0.001$ ) are less likely to be time-poor. Time poverty is associated with significant differences in health behaviours. Time-poor individuals are less likely to engage in physical activity (AOR: 0.4;  $p < 0.001$ ) and more likely to experience inadequate sleep (<420 minutes; AOR: 5.9;  $p < 0.001$ ). They report reduced time for relaxation and reflection (AOR: 0.2;  $p < 0.001$ ) and are more likely to multitask eating while working (AOR: 1.7;  $p < 0.001$ ). This analysis highlights the socio-demographic and occupational dimensions of time poverty and its strong association with health behaviours among those aged 15 and above. The findings emphasize the gendered nature of time poverty and its implications for well-being. Women and urban populations are disproportionately affected, highlighting the intersection of gender, employment, and socio-economic status. Addressing time poverty requires targeted interventions, including childcare support, flexible work policies, and promotion of work-life balance. These measures can reduce inequalities, enhance productivity, and improve health outcomes.

## Change in U5MR across EAG States: A District-wise Analysis Using NFHS Data

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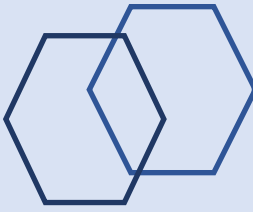
**Background:** The Under-Five Mortality Rate (U5MR) is the probability of a child dying between birth and age five per 1,000 live births and serves as a key indicator of a nation's health and development. Despite a steady decline in U5MR across India, rates remain especially high in the Empowered Action Group (EAG) states—Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha, Rajasthan, Uttar Pradesh, and Uttarakhand—which together account for a significant share of under-five deaths nationally. As India strives to achieve Sustainable Development Goal 3.2 to reduce U5MR to 25 per 1,000 live births by 2030, targeted interventions in these states are critical. This study aims to assess trends and gaps in U5MR across EAG states over time. **Data source & methodology:** National Family Health Survey (NFHS) data has been used for the study. District-level information about under-five mortality is available in the NFHS 4th and NFHS 5th rounds. So, we have taken only two rounds of NFHS data for analyzing the changes in U5MR across EAG states. **Results:** Analysis of NFHS-4 and NFHS-5 data shows a consistent and statistically meaningful decline in under-five mortality across all EAG states. Uttar Pradesh recorded the highest absolute reduction (18.24 deaths per 1,000 live births; -23.4%), followed by Madhya Pradesh (-15.42; -23.9%) and Chhattisgarh (-13.87; -21.6%). Moderate decreases were observed in Rajasthan (-13.12; -25.9%), Jharkhand (-8.89; -16.4%), and Odisha (-7.02; -14.6%). Bihar showed a small decline (-1.65; -2.8%), while Uttarakhand experienced a marginal reduction (-0.96; -2.1%). Overall, the EAG region demonstrated a clear downward trend in U5MR, with the most substantial improvements concentrated in states that previously exhibited the highest mortality burdens. However, in some districts U5MR is not improved.

## Association between Migration and Food Security among Tribal Households in Eastern India

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Migration and Food Security (FS) is a complex phenomenon, where migration can be a survival strategy for food insecure households. Accessibility and availability of food are also significantly associated with the economic and livelihood strategies, which are often primarily affected in underprivileged communities in India, particularly among the scheduled tribe (ST), as explored by a limited study in the Indian context. Therefore, we aimed to investigate the linkage between migration and Household Food Security (HFS) among STs in Eastern India. The study collected information from 450 ST households using a cross-sectional survey design. Furthermore, descriptive statistics and multinomial logistic regression were employed to assess the association between migration and HFS using the relative risk ratio (RRR). The results show that the HFS is higher among migrant households at 63.33% and they were 3.18 times ( $p < 0.05$ ) more likely to be HFS than non-migrant households. Additionally, the households with higher education level (RRR: 32.20;  $p < 0.05$ ), had agricultural land (RRR: 3.55;  $p < 0.05$ ), households with higher income (RRR: 22.51;  $p < 0.05$ ), and availed self-help group assistance (RRR: 2.85;  $p < 0.05$ ) were significantly associated with HFS. The study revealed that migration plays a crucial role as a strategy in achieving HFS for ST households in Eastern India. Furthermore, the findings highlight the significance of migration within the household, while also emphasizing the need for complementary policies that enhance education, income opportunities, and community support systems to sustainably improve food security among marginalized tribal populations in Eastern India.



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