



43rd Annual Conference
of the
INDIAN ASSOCIATION FOR THE STUDY OF POPULATION
organized jointly with the
POPULATION RESEARCH CENTRE
MOHANLAL SUKHADIA UNIVERSITY [MLSU]
UDAIPUR RAJASTHAN

SOUVENIR AND ABSTRACTS



DECEMBER 1-3, 2022

MOHANLAL SUKHADIA UNIVERSITY [MLSU]
UDAIPUR RAJASTHAN

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IASP INDIAN ASSOCIATION FOR THE STUDY OF POPULATION

Prof. Suresh Sharma
President, IASP



MESSAGE

The **Indian Association for the Study of Population** is honored to be organizing its 43rd Annual Conference at the Population Research Centre, Mohanlal Sukhadia University, Udaipur. I have had the honor of being associated with the Association for more than a decade now. I credit it to the incredible leadership and team work of the people behind IASP for building a fraternity so futuristic and so visionary that its importance and relevance continues even after fifty-one years since its inception.

The world has witnessed massive turnabouts in development since the COVID-19 pandemic – The collateral damage continues to reflect for population health, health systems, education, climate, supply chain, etc. However, emergent from the very same pandemic have been ground-breaking stories of resilience and resolve. It is through this conference that we celebrate the power of collaborations, the power that policy-making in the right direction holds. It is now more than ever that integrated decision making, and holistic discourses become crucial to reshaping future course of action.

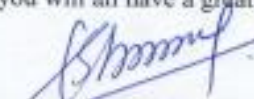
I am sincerely optimistic that this conference will be a platform to propel sustained results from dialogue, given the brilliant participation from demographers and social scientists presenting on a wide range of topics encompassing the domains of health and development.

I take this opportunity to express my gratitude towards Mohanlal Sukhadia University for being the most gracious hosts for this conference. I would also like to acknowledge the tireless efforts of the Population Research Centre, Udaipur team in enabling this conference. I would also like to thank and congratulate the EC and BoT members of the IASP for their sustained efforts and coordination. In thanking our valued participants, I would like to add that this truly is your conference first.

Last but not the least, I am humbly thankful to the sponsoring agencies of this conference, for it is by the grace of their unflinching support that the vision for this conference has seen light of the day today. I hereby thank – United Nations Population Fund (UNFPA), Population Council, International Institute for Population Science (IIPS), India Health Action Trust (IHAT), International Center for Research on Women (ICRW) and Institute of Economic Growth (IEG) for supporting IASP and, its 43rd Annual Conference.

I extend my best wishes to the participants of this conference, I hope you will all have a great time!

Kind Regards,


(Prof. Suresh Sharma)

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**PROF USHA RAM,
GENERAL SECRETARY, IASP**



MESSAGE

The Indian Association for the Study of Population (IASP; <https://iasp.ac.in>), the prestigious Associations of the Population Scientists, Demographers, Social Scientists, and Public Health Experts in India. Established in 1963, the IASP has emerged as an asocial of global reputation. The Association is vigorously pursuing the scientific study of population, health, family welfare, aging, nutrition, and developmental issues concerning India. To achieve its goal, the Association organizes conferences, training programs, workshops, seminars, and panel discussions for policy advisory. Also, it conducts distinguished lectures on contemporary topics from global and national experts. The Association regularly publishes an Online Journal, Demography India. In 2021, the Association reached newer heights by co-organizing International Population Conference virtually jointly with the International Union for the Scientific Study of the Population (IUSSP) for the second time, the first time being in 1989.

The Association has a long history of organizing annual conferences. Over the years, these conferences have been organized in various parts of the country covering almost all states. The annual conference is a big event and is attended by more than 250 international and national population and health experts including academicians, researchers, government officials, program and policy makers/implementers, development partners, representatives of NGOs and research organizations and the young scholars from a whole range of social and health sciences.

As our mother planet embraces 8 billionth baby on November 15, 2022, we the demographers have a even bigger role in developing newer strategies to help governments in achieving accessible, affordable, equitable health care with quality content to elevate health and well-being of one all. The IASP as a professional association take lead in initiating debates and discussions on these critical concerns in India, the country that is soon to home world's largest population. The 43rd annual conference of the IASP is scheduled during December 1-3, 2022, at the Mohanlal Sukhadia University (MLSU), Udaipur, Rajasthan. The Conference's theme is "Population, Nutrition, Health and Development: Experiences and Challenges". The conference will have plenary sessions on NFHS, Maternal and neonatal health exemplars from India and on gender. Over one hundred oral presentations and sixty poster presentations would be made in 23 technical/poster sessions. Prof. KS James, Director, IIPS would deliver George Simmons memorial lecture on The Demography of Families in India: An Exploration. The conference will felicitate senior demographers for their outstanding contribution in the field and award young researchers and scientists of outstanding research/publications. The proceedings of the presentations from the conference would provide strategic guideline to the policy makers for future improvements in population health and well-being.

I congratulate all IASP members and the EC members for their commitment and cooperation, in organizing this conference under the leadership of Dr. Suresh Sharma, President IASP and the hard work they have put over the past few months to make this event happen. The IASP remains thankful for the continued financial and other support from United Nations Population Fund (UNFPA), International Institute for Population Sciences (IIPS), Population Council, India Health Action Trust (IHAT), United Nations International Children's Emergency Fund (UNICEF), Institute of Economic Growth (IEG), International Center for Research on Women (ICRW) making this Conference a grand success.

Prof USHA RAM
PhD and CIHR-HOPE fellow (2011-15)
Professor & Head, Dept. of Bio-Statistics and Epidemiology
International Institute for Population Sciences, Mumbai (IN)
General Secretary, IASP

DR. JEETENDRA YADAV
TREASURER, IASP



MESSAGE

The Indian Association for the Study of Population (IASP) organises National and International conferences, meetings, and discussions on Population, Demography, Public health, and Epidemiology - related issues. IASP also publishes books, monographs, journals, newsletters, occasional papers, etc. Demography India is the online journal of IASP, which publishes research papers on population and health-related issues. IASP has organised two International Population Conferences, in 1989 and 2021, with the International Union for the Scientific Study of the Population (IUSSP). IASP successfully organised the Northern Region conference at the University of Kashmir, Srinagar, in collaboration with the Population Research Centre, Srinagar, during September 29-30, 2022. The theme of the conference was “Population, Development, and Health in Northern India: Status and Challenges Ahead.

IASP is organising the 43rd Annual Conference of the India Association for the Study of Population at the Mohanlal Sukhadia University [MLSU], Udaipur, Rajasthan, in collaboration with the Population Research Centre, Udaipur, during December 1-3, 2022. The theme of the conference is “75th Azadi ka Amrit Mahotsav: Population, Nutrition, Health, and Development: Experiences and Challenges.” The conference would offer a platform for discussions and deliberations that would lead to policy and programme recommendations for India and its States.

I wish to take this chance to express my appreciation to all the members of IASP for their active participation in the activities of IASP. I would also thank all the executive committee members and BOT members of IASP, Honourable Vice Chancellor **I.V. Triwedi** (Mohanlal Sukhadia University [MLSU], Udaipur, Rajasthan), and Prof. P.M. Yadav, Honorary Director of the Population Research Centre, Udaipur, for accepting our invitation to jointly host the 43rd Annual Conference of the India Association for the Study of Population conference. Special thanks to IASP President Dr. Suresh Sharma and General Secretary Prof. Usha Ram for their efforts in organising this conference. I express my sincere gratitude to United Nations Population Fund (UNFPA), International Institute for Population Sciences (IIPS), Population Council, India Health Action Trust (IHAT), United Nations International Children’s Emergency Fund (UNICEF), Institute of Economic Growth (IEG), International Center for Research on Women (ICRW), for providing financial support to the 43rd Annual Conference of the India Association for the Study of Population.

I send my warmest greetings to all of the conference attendees, and I hope you all have a wonderful time!

Dr. Jeetendra Yadav, Ph. D
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No. F/PRC/MLSU/2022/960-24/11/2022



I would like to thank the Indian Association for the Study of Population on behalf of the Population Research Centre, Udaipur, for organizing the 43rd annual conference of IASP at Mohanlal Sukhadia University on the theme "Population, Nutrition, Health and Development: Experiences and Challenges".

The broad agenda of the conference is compelling to consider the various dimensions of the population and health and challenges in the country. I am hopeful that the findings of the research presentation will prove to be of actual policy importance. I am also happy to note that papers selected for this conference would provide vital information on reproductive and child health, fertility and family planning, nutrition, non-communicable diseases and many other related issues. The conference will serve as a benchmark for the Government's initiatives in its commitment to achieving Sustainable Development Goals (SDGs) by 2030. The deliberations in the conference will lead to a strategy to help the country, in particular, improve population and health indicators and reach the SDGs targets.

I take this opportunity to thank our Hon'ble Vice-Chancellor **Prof. I.V. Trivedi**, for his motivation in organizing this conference. On this occasion, I would also like to thank Suresh Sharma, President of IASP, for his affection in giving preference to the Population Research Centre, Udaipur, for this conference. I welcome you all to Udaipur and the 43rd Annual Conference of IASP for an exciting and productive time.

Prof. PM Yadav

Honorary Director
PRC, Udaipur

Shajy K Isac
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Message

It is gratifying to note that the Indian Association for the Study of Population (IASP) is convening its 43rd Annual Conference at the Population Research Centre, Mohanlal Sukhadia University, Udaipur, Rajasthan during 1-3 December 2022. This conference is a platform for the scientific community to share learnings of relevance to Population, Nutrition, Health and Development issues and exchange views and ideas. The scientific and plenary sessions provide an enabling environment for researchers and academicians to exchange newer learnings across different contexts and themes.

I hope that the 43rd annual conference will effectively deliberate and demonstrate positive learning experience in context to population and development. I convey my warm greetings to the organizing committee and the participants and extend my best wishes for the success of the conference.

Shajy K Isac, PhD
Managing Trustee
India Health Action Trust (IHAT)



MESSAGE

I am very happy to learn that IASP has chosen to focus on Population, Nutrition, Health, and development. I hope that the discussions and deliberations that happen will shine a light on some of the under addressed issues and marginalized population. I especially appreciate IASP's efforts to bring students and young social science researchers to the conference and provide them a meaningful platform to learn and exchange ideas. We at ICRW are happy to support the efforts of IASP”.

With very best wishes for a grand success of the event!

Dr. Ravi Verma
Director
International Centre for Research on Women (ICRW Asia)
ICRW Asia Office

About Udaipur

Background

Often referred to as the 'Venice of the East', the city of lakes Udaipur is located around azure water lakes and is hemmed in by lush green hills of Aravalli. The famous Lake Palace, located in the middle of Lake Pichola is one of the most beautiful sights of Udaipur. It is also home to Jaisalmer and Lake, claimed to be the second largest man-made sweet water lake in Asia. The beautiful City Palace and Sajjangarh (Monsoon Palace) add to the architectural beauty and grandeur of the city. The city is also known for its profusion of zinc and marble. Solar observatory in Lake Fateh Sagar is the only observatory in India located on an island and has been made on the pattern of Big Bear Lake in Southern California. The ten-day Shilpgram Festival which starts from 21 Dec to 30 Dec pulls in a large number of people interested in arts and crafts.



Udaipur was founded in 1553 by Maharana Udai Singh II as the new capital of Mewar Kingdom. It is located in the fertile, circular Girwa Valley to the southwest of Nagda, which was the first capital of Mewar

Prime Tourist Destination

Udaipur is a popular tourist destination in India. The lakes, palaces and lively workspaces and culture attract foreign and domestic visitors. Udaipur have three interconnected lakes - the Fateh Sagar Lake, the Lake Pichhola and the smaller Swaroop Sagar Lake; along with forts, palaces, temples, gardens, mountains and narrow lanes lined with stalls, relives the reminiscences of a heroic past, valor and chivalry.



The top attractions here are undoubtedly the lakes and the sights around the lakes. Lake Pichola, Lake Fateh Sagar and a few other artificial lakes provide for most of the entertainment and water activities in Udaipur, apart from the scenic beauty of the numerous gardens that flank these water bodies.

This city is also big on palaces and museums. City Palace & Museum, Jagmandir Island Palace, Sajjangarh Palace and several others will enthrall you with their opulence and regality. Udaipur is home to many ancient Hindu temples as well, Eklingji Temple and Jagdish Temple being the most famous.

Along with sightseeing, you can enjoy a cable car ride to Machla Magra (which literally translates to ‘Fish Hill’) from where you will have a bird’s eye view of all of Udaipur. Shilpgram, the cultural village, will allow you a live experience of the local music and dance forms.

Please visit this link for more information on prime tourist attraction <https://udaipurtourism.co.in/places-to-visit-in-udaipur>



Weather

Udaipur city has a hot semi-arid climate. The three main seasons, summer, monsoon and winter respectively, dominate the city of Udaipur. Being located in the desert lands of Rajasthan, the climate and weather of Udaipur is usually hot. The summer season runs from mid-March to June and touches temperature ranging from 23 °C (73 °F) to 44 °C (111 °F) in the months of March to June. Monsoons arrive in the month of July heralded by dust and thunderstorms. With its greenery and lakes, the city is one of the top monsoon destinations of the country. The winter season prevails from the month of October till the month of March. The city observes pleasant sunny days and enjoyable cool nights with the temperature ranging from 5 °C (41 °F) to 30 °C (86 °F).

Transport

If you are touring the city, you can hire taxi/cab that is available in variety, ranging from luxurious cabs to average ones. You can choose taxi as per your preference, comfort and luxury. One can take the services of Taxis/ Cabs for a day or days, for sightseeing purposes and excursions too. Ola and Uber Taxis are easily available in the city.

The city dwellers usually rely on Tangas, Auto-rickshaws and Three-wheelers to move around the city. Tanga, being the cheapest mode to travel, is used by people to a great extent. If you are not interested in taking Tanga ride, you can opt for auto-rickshaws, which are easily available throughout the city.

Three-wheeler is another option to travel around the city that charge nominal fare to reach predefined destinations. These autos run on sharing basis and move from one point to another for getting more and more passengers. Udaipur also offers a reasonably good bus service and city buses are the most common means of transport used by people.

One can also enjoy bicycle ride, particularly around Fateh Sagar Lake. Udaipur is a small city and not crowded with vehicles, so one can get around the city on a bicycle. You can hire bicycles that are available all over the city. To sum up, there is no need to be bothered about transportation, since Udaipur has sufficient means of transport to assure you a relaxing trip.

Connectivity

By Air

The nearest airport in Udaipur is called the Maharana Pratap Airport which is situated about 20 kilometres away from the city center. It is well-connected by air to all major cities in India including Delhi, Mumbai, Kolkata and Jaipur. Some of the popular airlines that have daily flights to and from Udaipur are Jet Airways, Indian Airlines, Air Deccan, and Kingfisher Airlines. Once you reach at the airport, you can hire cabs or book pre-paid taxis that are easily available for travelling between the airport and the city.

By Bus

There is a very well-established bus service network to Udaipur, linking it to several cities like Delhi, Jaipur, Indore, Kota and Ahmedabad, among others. There are a number of options when it comes to travelling by bus. These include deluxe buses, air-conditioned coaches and State-run transport.

By Train

Udaipur lies on a vast network of rail that connects it to major cities in India such as Jaipur, Delhi, Kolkata, Indore, Mumbai and Kota. Some of the popular trains that run daily are Mewar Express, Gwalior-Udaipur Express, Bandra-Udaipur SF Express, Chetak Express and Annanya Express. In fact, the famous and luxurious Palace of Wheels also makes a scheduled stop in Udaipur. Once you reach the station, you can hire a taxi or an auto-rickshaw depending on where do you want to get down in the city. The fare will depend on the number of kilometers covered.

By Road/Self Drive

Udaipur is connected to Delhi and Mumbai by National Highway 8 (NH 8). The drive is about 10-11 hours long and covers a distance of roughly 700 kilometers from both the cities. Many tourists visiting Udaipur prefer to drive on their own. If you do not wish to use your personal vehicle, there are several tour operators that provide vehicles on hire. Alternatively, one can also hire chauffeur-driven vehicles for travelling to Udaipur.

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Oral Presentation Abstract

Paper ID-3: Health conditions among the currently working ageing population in India

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Introduction: Approximately 64.8% of ageing population are currently working in India. However, health conditions of Ageing populations also play a vital role in this. With increase trend of ageing population, it is also needed to focus on active ageing as this population will be the dependent population. If ageing populations will work actively for a long period of time, then it will help in strengthening economic conditions. Expenditure on health can lead to over burden on ageing, it is advisable to focus more on health and active ageing in India.

Objective: To examine the health conditions of currently working ageing populations in India.

Methods and Data Source: To fulfil the objective of research we have used LASI data, we have used simple statistical methods like tabulation and cross tabulation to see the associated factors.

Result and Discussion: As India heading towards an ageing Nation, dependent population will also increase. Among elderly population 64.8% are currently working in India. Elderly, who are staying in rural areas are working longer as compared to urban elder population. This may be due to engagement in agricultural labour. Likewise, 67 % male are currently working as compared to female (60.6%). It is also found that 83.8% elderly population who are below 60 are currently working, whereas this proportion is reduced to 27.8 in age group 70-80. 10% of 80+ elderly population are working currently. It is also seen that tribal elderly population are more working (72.87) compared to other castes. 65.49% of scheduled caste of and 63.69% of other backward class elderly population are working. With rising health concern among ageing population, existing policy on health should be modified and revised according to need of hour.

Paper ID-7: Non-Communicable Diseases Among Males and Females in Rajasthan: A Brief Comparison

Dr. Archana Muthye

Asst. Professor G S College of Commerce and Economics, Jabalapur

A non-communicable disease can be defined as an impairment of bodily structure and/or function that necessitates a modification of the patient's normal life, and has persisted over an extended period of time. Non-communicable diseases include cardiovascular, renal, nervous, musculo-skeletal conditions like arthritis, mental disorders, diabetes, and respiratory disorders like asthma, metabolic and degenerative diseases. India is experiencing a rapid health transition with a rising burden of Non-communicable diseases (NCDs) causing significant morbidity and mortality both in rural and urban population, with considerable loss in potentially productive years (age 35-64) of life. NCDs are estimated to account for about 53 percent of deaths. According to National Family health mission- 5 key indicators, high blood sugar in adults above 15 years male, a total (rural and urban) of 8.7 percent while 7.0 percent were females. In the case for Hypertension, adults above the age of 15, 17.4 percent males were diagnosed with high blood pressure. While female percentage was 14.9 (rural and urban) The most common risk factors for NCDs include insufficient physical activity, unhealthy diet, obesity, raised alcohol consumption, tobacco, cancer associated infections and environmental risk factors. Prevention is a multi-factorial process. But it begins with identification of risk factors, health promotion activities, and a healthy lifestyle.

Paper ID-8: Adverse Childhood Experiences and Health Risk Behaviours Among Adolescents and Young Adults: Evidence from India

Chanda Maurya and Priya Maurya

International Institute for Population sciences, Mumbai

Background: The childhood years, from prenatal to late adolescence and early adulthood, are "building block" years for basis of intelligence and skill development, self-motivation, social behavior, health and adult relationships, which extend into adulthood. Adverse childhood experiences (ACEs) are traumatic and stressful events that occur in childhood and strongly predict health risk behaviours (HRBs). So present study aims to examine the association between ACEs and HRBs. This study also analyses outcomes in aggregate to estimate the impact of cumulative adversity on various risky health behavioural factors among adolescents and young adults.

Data and Methods: Data were drawn from the second wave of Understanding the lives of adolescents and young adults (2018-2019) ‘ survey conducted in two states of India. Bivariate and multivariate analysis were conducted to full fill our objective.

Results: The findings show that nearly 30% of the boys and 10% of the girls had violent behaviour. Substance use prevalence was much higher among boys (34.11%) than girls (6.65%). More boys had negative gender attitudes. Majority of the study participants had multiple ACEs. Around one in five girls (18.81%) had three or more ACEs, whereas the same prevalence for boys was 16.26%. A strong association between ACEs and health risk behaviours in adolescence and young adulthood was also found. Adolescents and younger adults who experienced three or more ACEs were at significantly the highest risk of risky health behaviors than those with no childhood adversity experience

Conclusion: The study findings underlined the need for implementing outcome-oriented approaches to adolescents’ health care and behavioural risks. A potential model could be to create awareness among family members, caregivers and communities to be more empathetic towards the children. Also, the decision-maker needs to work towards ensuring the protection of their rights and preventing their exploitation by formulating guidelines and strict laws.

Paper ID-25: Death Registration Coverage in India: Results from Nationally Representative Survey

*Nandita Saikia, Krishna Kumar and Dr Bhaswati Das
International Institute for Population sciences, Mumbai*

Objective: To investigate the disparity and predictors of death registration in India.

Methods: We used National Family Health Survey (NFHS-2019-21) data. Based on eligible household members’ reports, we estimated death registration coverage among 84,390 deaths in all age groups across the country. We did multilevel binary logistic regression to examine demographic and socio-demographic predictor variables of death registration at state, district, and individual levels. We used GIS software for spatial mapping of the level of death registration at the district level, disaggregated by sex.

Findings: The death registration at the national level is 71%. We found that out of 707 districts in 2019, 122 and 53 districts recorded death registration level below 40 percent among females and males, respectively. There was a considerable difference in the death registration level by sex (male-74% and female-66%). We found, a higher death registration level among old age (65-98 years) people (71%). Death registration level was higher in urban areas compared to rural areas (83% vs. 66%). We found death registration level was higher among households with BPL cards (70%), bank accounts (71%) and covered with health insurance (77%). Females, children, rural populations, people from disadvantaged castes, poorest wealth quintile, Muslims, and not having BPL cards have a lower likelihood of death registration in India. District-level predictors were not statistically significant in the study.

Conclusion: Demographic and socioeconomic characteristics of the deceased are significantly associated with their death registration. We suggest periodic awareness programs on death registration procedures and facilitating easy access to death registration offices in lower performing districts and areas among the marginalised population groups.

Paper ID-33: Identifying Health-Relevant Behaviours and Prevalence of Iron-Deficiency Anaemia among Adolescent Girls in Rural India: A Mixed Method Approach

*Priyanka Yadav and Mr. AYUB KHAN
Research Scholar
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Adolescent girls are at risk of iron deficiency and anaemia due to various factors including high requirements for iron, poor dietary practices, high rates of infection and worm infestation, as well as pregnancy. Focusing on adolescent girls in rural India, this study aimed to describe the health-relevant behaviours and to find out prevalence of iron-deficiency anaemia relevant context required for effective intervention planning in future. We placed a special emphasis on iron because anaemia has been identified as a significant problem in

adolescent girls in India. Interview modules designed to get socio-demographic information, a qualitative approach for dietary practices, menstrual hygiene and knowledge about anaemia were recorded. The overall anaemia prevalence was extremely high 67.8% of which 61.2%, 36.0% and 2.8% were mild, moderate and severely anaemic. The risk of anaemia is higher among adolescent girls in their late adolescence period 15-19 years ($p < 0.05$). Menstrual cycle of 69.6% adolescent girls with mean age at menarche 12.4 ± 0.947 years were started but knowledge about anaemia was very poor among the girls as only 22.0% heard about iron-deficiency related anaemia. Study also showed that 20.1% of girls whose menstrual cycle started, had knowledge about menarche and mostly aware about it by their mothers. The prevalence of only napkins users during periods was only 39.0% while nearly 46.0% used both napkins and clothes. Study further concludes that strengthening education and health systems to provide adolescent girls the knowledge, skills and services to manage their health-related behaviours, menstruation with dignity and making an environment where adolescent girls live with quality of life. Keywords: Anaemia, Menstrual Health, Adolescent girls.

Paper ID-34: Neonatal, Post-Neonatal, Child, And Adult Mortality Attributable to Household and Ambient Air Pollution in India

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Background Ambient and household air pollution in India is a foremost environmental risk factor that affects human health.

Objective This study first investigates the geographical clustering of ambient air pollution and then examines the associated mortality risk attributable to ambient and household air pollution using nationally representative survey data in India.

Methods Data on fine particulate matter (PM_{2.5}) concentration has been extracted from the Greenhouse Gas Air Pollution Interactions and Synergies (GAINS) model developed by International Institute for Applied Systems Analysis. Household air pollution, mortality and socio-demographic data were extracted from the National Family and Health Survey-5, 2019-21, India. The PM_{2.5} data was then integrated into the NFHS-5 data. Binary logistic regression analysis was carried out to see the difference in age-group mortality by different pollution parameters.

Results The districts with PM_{2.5} concentrations above the national ambient air quality standard (NAAQS) level of $40 \mu\text{g}/\text{m}^3$ show a higher risk of neonatal (OR 1.86 CI 95% 1.415 - 2.439), post-neonatal (OR 2.03 CI 95% 1.391 - 2.954), child (OR 2.20 CI 95% 1.002 - 4.824) and adult death (OR 1.13 CI 95% 1.062 - 1.209). The absence of a separate kitchen shows a higher probability of neonatal (OR: 1.19 CI 95% 1.088 - 1.305) and adult death (OR 1.06 CI 95% 1.028 - 1.089). Second hand smoking predicts a higher risk of post-neonatal death (OR 1.25 CI 95% 1.118-1.405) and child death (OR 1.22 CI 95% 0.988-1.497).

Discussion Our study advocates that there is a strong positive association between ambient and household air pollution and mortality risk. The PM_{2.5} pollution significantly contributes to the mortality risk in all age-groups. Children are more vulnerable to household air quality than adults. In India, policymakers should focus on reducing the anthropogenic PM_{2.5} emission at least to reach the NAAQS, which can substantially reduce disease burden and, more precisely, mortality.

Paper ID-39: Migration Is Pathway to Development: What Restrict People to Migrate?

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In developing countries like India migration is a potential means to development and improve living standards. This study intends to investigate the impact of migration on food security and expenditure pattern and what is the obstacle that restricts poor people from migrating using the Middle Ganga Plain Survey, 1028 Data. The result shows that the out-migration from Middle Ganga Plain has a significant positive impact on household food security and expenditure pattern like food, education, and health. Data also suggest that 28 percent of people are involuntary non-migrants means they intend to migrate but, due to some circumstances, they cannot.

The main reasons are lack of social and family support, network, and money. The involuntary non-migrant belongs to the marginalized category, and they are far behind from the migrant household in terms of food security and expenditure pattern. Migration is means to survival for the majority of people of the Middle Ganga Plain e.g. Eastern Uttar Pradesh and Bihar. While a large number of people still unable to migrate due to lack of social network and money and far behind from migrant households in terms of household food security and expenditure pattern. Therefore, a proper governmental policy and incentive to those involuntary non-migrants would be an option to promote migration and development from this region.

Paper ID-41: Awareness, Knowledge, and High-Risk Sexual Behaviors of Sexually Transmitted Infected Patients Attending a Tertiary Care Centre: A Cross Sectional Study

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Background Sexually transmitted infections (STIs), include a range of clinical syndromes that can be acquired/transmitted through sexual activity and may be caused by various types of pathogens, including bacteria, fungi, viruses, and parasites. STIs are major public health problems in both developed and developing countries, but prevalence is apparently higher in developing countries. The aim of this study is to access the awareness, knowledge, and high-risk sexual behaviors of sexually transmitted infected patients.

Materials and Methods: This was a cross-sectional study carried out on 194 sexually transmitted infected patients aged 15-60 years at STI clinic of the Department of Dermatology & Venereology, of Sir Sunderlal Hospital Institute of Medical Sciences, Banaras Hindu University, Varanasi.

Results: The findings of this study show that (96.9%) of respondents were knowledgeable about HIV/AIDS whereas lower percentages were noted for Hepatitis B (50%), Syphilis (35.1%), Herpes (30.4%) Gonorrhoea (21.6%), Chlamydia (14.9%). On analyzing the various factors associated with high-risk sexual behavior among clients attending STI clinic, marital status, sexual orientation, and occupation were found to be significantly associated with high-risk sexual behavior ($P < 0.05$).

Conclusion: It can be concluded that occupation may be considered a significant risk factor for acquiring sexually transmitted infections. The unskilled and unemployed on one hand and those employed in occupations, which require frequent travel outside from usual place of residence, constitute the high-risk group. This study revealed that there was a low percentage of participants who were adequately aware of the common types, symptoms, and complications of STIs. Keywords: STIs, Men who have sex with men (MSM), sexual behavior.

Paper ID-51: Association of Thyroid and Life Style Behavior: Study Among Adults in the Highly Thyroid Prevalent States in India

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The term Thyroid is quite common because its prevalence is notably high around the globe. The disorder related to Thyroid is a major public health burden in these days. There is a wide disparity can be seen among men and women regarding the thyroid disorders. According to an estimate based on various studies of thyroid disease, about 42 million people in India suffer from it. Our nation has now become the abode of diseases like diabetes, hypertension, cardiovascular diseases, cancers and stroke which has slowly and steadily affected the health of a vast majority of the population posing a challenge in the health sector and also the economic burden it imposes to the society. So, it is relevant to focus on NCDs. This study aims to focus on Thyroid and its associated factors. Those who aged 45 and above were taken into consideration. The prevalence of Thyroid in India found to be 3.24%. There were 4 states which shows high prevalence, they are, Kerala (9.49%), West Bengal (9.21%), Jammu & Kashmir (6.11%) and Maharashtra (5.18%). So, this study focused into these 4 states. People were categorized into 2 age groups (45-59, 60 and above) for the study. It is found that in both age groups women have Thyroid than men. Other socio-economic characteristics such as, Caste, Religion, Educational status, Marital status, Place of residence and MPCE quintile were studied in order to find the prevalence of Thyroid. Literatures showed that diseases such as Diabetes, Hypertension and Cholesterol are associated with Thyroid. It is found that these diseases are associated with Thyroid, but its prevalence is less. Also, life style behavior was taken into consideration for the study. Habits such as tobacco consumption, alcohol drinking and physical activities, yoga, meditation do have impact over Thyroid. The study taken into considering total sample of 2161 people those who have self-reported thyroid in 4 states of India.

Paper ID-52: Is the Prevalence of Tobacco Use High Among Older Adults with Chronic Disease Vulnerability in India? Evidence from A Large-Scale Sample Survey

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The risk of developing serious health problems and dying early increases with continued smoking, especially among older adults with chronic diseases. Therefore, the present study examined current tobacco use prevalence and determinants among senior people with at least one chronic condition. The Pearson chi-square test and multivariate logistic regression were used to accomplish the study objective. According to the results of the current study, current tobacco usage is significantly predicted by factors such as gender, educational attainment, employment status, religion, caste, place of residence, geographic region, and religiosity and spirituality. It is more prevalent among men, those who are illiterate, and people who are employed. Geographically, it is a pressing problem in the central, eastern, and northern regions, especially in rural areas. To address the tobacco epidemic, it should be important to implement effective measures through boosting health awareness campaigns and elevating grassroots efforts. Keyword: Tobacco consumption, older-adults, chronic morbidity, India

Paper ID-53: Multivariate Decomposition of Gender Differentials in Successful Aging Among Older Adults in India

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Background Successful aging is considered a viable solution to the burdens placed on healthcare systems and financial and social security in societies with aging population. The present study aimed to determine the prevalence of successful aging and explore the factors contributing to gender differentials in successful aging among older adults in India.

Methods This study utilized data from the nationally representative Longitudinal Ageing Study in India, conducted in 2017-18. The study is based on a sample of 15,098 older men and 16,366 older women aged 60 years and above. Descriptive and bivariate analyses were carried out. Proportion test was used to evaluate the gender differentials and reflect the statistical significance in the associated factors. Multivariate decomposition analysis was conducted to identify covariates contribution in explaining the gender differences in successful aging.

Results There was a significant gender difference in successful aging among older adults in India (Difference: 8.7%; p-value<0.001] with 34.3% older men and 25.6% older women experiencing successful aging. A proportion of 88% of gender difference in successful aging was explained by the differences in the distribution of characteristics (Coef: 0.082; p-value<0.05). Considerable gender gap in successful aging would be reduced if women had similar levels of work status (28% reduction) to their male counterparts. Bringing the level of frequent physical activity in women to the same levels observed in men would reduce the gender gap by 9%.

Conclusions The findings suggest that women had a lower score in successful aging, which is attributed to several socioeconomic and behavioural factors including not working status and physical inactivity. More studies must be done to explore the reasons for such differences and what particular factors in low-income countries create differences among older men and women in achieving successful aging.

Paper ID-63: Low Birth Weight and Infant Birth Weight Classification in India Using Machine Learning Algorithms

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One of the crucial factors for determining the infant survival rate is birth weight. The global epidemic of Low Birth Weight (LBW) is particularly worrying in underdeveloped nations since it threatens the lives of infants everywhere. It is the gold standard for gauging of development of infants. LBW defined as the birth weight of an infant is below 2500 gm. Infants with LWB have a 25-fold higher risk of death than normal birth weights. About 14.6% of the infant born worldwide have LBW. Prevalence rates of LBW are highest (13.7%) in Africa

and lowest (17.3%) in Asia. These infants had a higher risk of dying or suffering permanent damage in the first month of life, including the inability to reach full physical and mental maturity, impaired intelligence, excess body fat, increased risk of cardiovascular disease and diabetes, and premature demise. In India, the rates of LBW are: 16.4% in NFHS-4, 20% in NHFS-3, 22.9% in NFHS-2, and 25.2% in NHFS-1. By using the NFHS -5 dataset, this study provides a detailed setup of birth weight estimation and LBW classification. Multiple subsets of features were combined to perform predictions with and without feature selection techniques. Furthermore, the synthetic minority oversampling technique was employed to oversample the minority class. Based on the results, Random-Forest is the most effective classifier for predicting LBW, having achieved an accuracy rate of 91.60 percent, a recall rate of 91.60 percent, a ROC-AUC of 96.80 percent, a 91.60 percent F1 Score, a Hamming loss of 1.05 percent, and an 81.86 percent Jaccard-score. This study found that the Random-Forest classifier is the most successful at predicting the occurrence of LBW. In India, the four most important risk factors for low birth weight are the sex of the infant, time between marriage and birth, the mother's work, and her age

Paper ID-68: International Migration, Remittances and Household Development In Middle Ganga Plains: A Comparative Perspective of UP and Bihar Using MGP Project Data 2021

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Migration is a dynamic, fluid, and complex process that has evolved across space and time. One of the three important components of population dynamics, migration, is likely to increase when the other two components of fertility and mortality stabilize and plateau. Migration plays a pivotal role in determining the demographic structure of a location, the spatial redistribution of a population while serving as an economic equalizer (Munck 2008), and triggering sociocultural and political change across the place of origin and place of destination. The study discusses international migration, remittances, the effect of migration on the economy of the households at the origin. The study examines the lives of the wives of the migrants who were left behind at the place of origin to ascertain the degree of autonomy experienced as a result of male out-migration. Objectives of this study is to explore nature and pattern of International migration in Middle Ganga Plains of UP and Bihar, to study the role of migration and remittances in economic mobility and poverty reduction of the household and to study the role of international migration on status of left behind women. Using the secondary data from the Middle Ganga Project (MGP), 2021 also known as Causes and consequences of out-migration from Middle Ganga Plain this study focuses on International migration from the Middle Ganga Plain (MGP), which consists of the state of Bihar and Eastern Uttar Pradesh (Eastern part of the state of Uttar Pradesh). A majority of the households in Bihar receive less than Rs 25,000 annually, which reflects the low earning capacity of migrants, most of whom are engaged in menial jobs. Both internal and international migrant households in Eastern UP receive substantially higher remittances than their counterparts in Bihar.

Paper ID-71: Linkages of Intimate Partner Violence, Coercive control, Alcoholism and Mental Well-being: A Community-based Study in Delhi

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Purpose: Violence against women can be conceptualized as an issue relating to the exertion of power and social control over women. Intimate partner violence not only damages the victim physically but also psychologically resulting in long-term consequences. Thus, the study aimed to understand the community level scenario on IPV and alcoholism and how coercive control mediates this linkage, and impact on mental well-being was observed.

Methods: Based on the urban slum setting of Delhi, the study adopted a mixed method approach. The quantitative analysis included univariate and bivariate analysis. Also, a generalized structural equation model

was built to carry out the mediation analysis and effect of IPV on mental well-being. The narratives from the qualitative data were used to supplement the quantitative results.

Results: Around 76% women reported to experience physical IPV among those whose husbands drink alcohol. The coercive control emerged to be an important factor that amplified the tendency towards IPV. The results show that with increasing number of coercive control acts, the physical, emotional and sexual IPVs increased. Most women were of the opinion on banning alcohol and closure of alcohol shops. Among women who sought help did not receive required urgent support legally.

Conclusion: There is a need for community-based organisation to create awareness on alcoholism and its adverse effects such as violence; engage with grassroots level workers and women in community to make them aware and the need to fight against it without tolerating via songs, women's legal counselling and by raising community slogans.

Paper ID-78: Extent and Pattern of Reimbursement on Inpatient Care in India, 2017-18

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The present study exhibits the socio-economic variations in reimbursement received from different health insurance schemes after hospitalization in India prior to Ayushman Bharat scheme. we used information based on 17612 hospitalized and insured individuals from National Sample Survey 75th rounds data, 2017-18. We undertook three-level random intercept Tobit models that showed the association between health insurance reimbursement and its relevant covariates and the extent of heterogeneity in insurance reimbursement behaviour across the communities and states, respectively. First, one in every fifth individual had received any reimbursement on hospitalization and it was lowest for the population insured with government funded health insurance schemes (GSHI). Second, only one-third of the total health expenditure received as reimbursement at the national level. For the GSHI schemes, it was the lowest, with almost one-eighth proportion received as reimbursement. Third, substantial state variation exists in the reimbursement received and reimbursement as a percentage of total expenditure. For instance, north-eastern states, like Mizoram, had the highest percentage of people who received any reimbursement. In contrast, southern states like Telangana and Andhra Pradesh received one of the lowest percent of reimbursement. Fourth, the multilevel model reveals that even after adjusting explanatory variables in the full model, the substantial amount of Intra Class Correlation remains which infers that due to various unobserved factors, the variation cannot be explained. It can be concluded that not only the increase in the coverage of health insurance was needed, but at the same time, it was mandatory to establish a smooth mechanism for reimbursement. It also needs to focus on reducing the asymmetry in information and mistrust among people and on addressing the issue of poor governance to make the insurance schemes operational.

Paper ID-83: Temporal Patterns in Infant Death Clustering Among Families: Findings from India Human Development Survey

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Despite considerable research and knowledge about the determinants of infant mortality, the majority of the children are unable to survive their first birthday. Abundant evidence shows that the risk of dying is never shared equally among the population, and some families have a greater risk of infant mortality than others. The present study examined the clustering of infant deaths among Indian families. We used the pooled birth history of mothers from the India Human Development Survey round-I (conducted during 2004-05) and round-II (conducted during 2011-12). We performed bivariate analysis and estimated random-intercept dynamic regression models to complete the study objectives. The use of dynamic models allows us to adjust the fact that the index child's mortality risk depends on the mortality risk of preceding children. Further, the use of two-level random-intercept models allows us to account for the variation in the risk of infant mortality due to unobserved characteristics at the family level (mother-level). From preliminary analysis, clustering of infant deaths was

observed among children born to the same mothers. Further, the risk of infant deaths of index children was correlated with the mortality risk of the preceding child.

Paper ID-86: An Empirical Study of Labour Out-migration and Return Migration in Jharkhand: Evidence from the Pandemic

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Decline in employment opportunities in rural areas leads to temporary and permanent out-migration of rural dwellers in India. It is more prevalent in the lean season of agriculture from rural to the urban areas for or in search of employment. Jharkhand is one of the poor states of India which is historically known for seasonal migration and recent trends show that abject poverty drives people from rural areas to migrate, sometimes seasonally and sometimes permanently to other states. Also, state government data showed that a large number of migrants returned to Jharkhand during the pandemic in 2020. This study is an attempt to understand the recent pattern of labour out-migration from Jharkhand, estimate the number return migrants and examine the problems faced by the return migrants during the COVID-19 led lockdown. This study presents results of a household sample survey (of 430 households) conducted in a remote district of Jharkhand which observed huge outflow of labour migrants to the other states and 36% of the surveyed household have at least one labour out-migrant (either temporary or permanent) working in other states. During pandemic almost 80 % of migrant households observed return migration and more than 60% of households report the decline in income during the first wave of the pandemic. More than one third of return migrants reported to have travelled without any proper transport facilities and had issues of food shortage. Qualitative results also suggest that return migrants did not find better job prospects in their villages and started moving to their destinations just after few months of their return. Results warrant a proper policy for the protection of migrants' rights in the cities not only during emergency situation like COVID but forever.

Paper ID-89: The Choice of Mate Selection in India: An Evidence from Matrimonial Advertisements

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The present paper aims to study the marriage market in India through the analysis of matrimonial advertisements placed in different newspapers. This study uses four newspapers covering national and regional advertisements. The advertisements placed in the months of August and September of three years from 2015 to 2017 have been selected for the data. The total samples of 2558 are selected using the multistage systematic sampling method. Different statistical methods univariate, bivariate, and multivariate techniques have been used for the data analysis. The result of the study presents the patterns of choice for mate selection in matrimonial advertisements placed in India. The binary logistic regression estimated the odds ratio of salary stated by the males and females to attract prospective mates during placing the matrimonial advertisement. It shows that taking the males as a reference category, the advertisements placed from the females' side are less likely to mention their salary to attract a suitable bridegroom (OR: 0.50, $p < 0.01$). Further, the result shows that advertisements placed by males primarily prefer beautiful and fair complexion brides, whereas, advertisements placed by females show a preference for well-settled grooms with handsome salaries over their complexion. Those males who are open to inter-caste marriage and want highly educated mates do not mention beauty attributes for prospective brides. The bivariate result of caste stated and caste required shows that majorly scheduled castes and scheduled tribes mention caste as no bar. In contrast, other castes majorly choose the same caste prospective mates. The result of multinomial logistic regression shows that advertisements placed by divorced and widowed people have less reservation for the same caste mate. Similarly, those who are going for late-age marriage explicitly mention caste is no bar for the mate selection.

Paper ID-91: Trends in Financial Risk on Indian Households Due to Out-Of-Pocket Expenditure on Medicines 2014 to 2017-18

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With increasing longevity and rising incidence of chronic conditions, the dependence of the Indian population on regular medication is also likely to be greater. Disease-modifying treatments for some conditions such as multiple sclerosis may cost as much as ₹30,000 (US\$ 400) to ₹100,000 per month and medicines for some lifelong conditions such as diabetes or cardiovascular diseases may cost more than ₹100 per day. Without any universal prepayment mechanisms and insurance coverage being primarily for hospitalizations, payments for medicines are predominantly made out-of-pocket by households. Out-of-pocket expenditures (OOPE) on medicines pose serious financial risk for Indian households. Protection from financial risk due to health expenditures is one of the targets of the United Nations Sustainable Development Goals and is also linked to the overall poverty reduction goal. This study takes a look at the change in out-of-pocket expenditure on medicines and the change in the associated financial risks between 2014 and 2017-18.

Paper ID-92: Quality of Life and Coping Methods Adopted by Cancer Patients: A study of Two Agricultural States of India, Punjab and Bihar

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Cancer treatment is often associated with increased distress for the patient, along with feelings of anxiety, fear, depression, and helplessness. Although these outcomes remain essential, there is a need to assess the impact of cancer and its treatment on patients' health-related quality of life. Hence, in low resource setting, it is a challenge for the medical team and the patient's family members to provide psychological, informational and emotional support throughout the fight against the disease. This paper examines the coping methods and quality of life adopted by cancer patients in the state of Punjab and Bihar. Data and Method: A total of 300 cancer patients confirmed for their illness were interviewed using a semi-structured interview schedule in the state of Punjab and Bihar. Quality of life was measured using standard instruments; the Medical Outcomes Study- Short Form Survey Instrument (MOS-SF-36), a brief health status measure for measuring the quality of life. Depression scale, social support, religious coping, general health and socioeconomic details were studied by interviewing patients after taking their informed consent. Results: Strong family support, positive thinking and purpose in life played a key role in fighting the disease. An appropriate health-seeking behaviour, good general medication and emotional support from family and friends were revealed to be very important factors for coping. The quality of life was also found to be not only the outcome of the disease and its treatment but is also highly dependent on each patient's socio-economic characteristics. As it is a long-term disease and is increasing at a rapid rate the government should build more infrastructure in the interior part of the state so that it's become more accessible and can be diagnosed at an early stage which gives more chances for survival.

Paper ID-93: Double Burden of Diet Intake: An Analysis of Metabolic Complication Indicator Among Women in India

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India contributes a third of the global burden of undernutrition and is important in achieving has become an obstacle in achieving SDG of the 2030 agenda. The usual food intake pattern of an individual is closely associated with nutritional status. Objective: The data on usual food pattern for healthy life was utilized to understand body fat and abdominal obesity, and its association with social determinants affecting usual pattern of nutritional intake among Indian women. The National Family Health Survey -5 was used to understand the factors affecting disparity in nutritional intake. Additionally, the study sought to answer that whether nutritional accessibility was affordable to all or to specific group only. It also studies the nutritional intake status among women of increased risk of type 2 diabetes mellitus, myocardial infarction, stroke, and premature death. Result: The usual food pattern assessed with the recommended food and was coded - low, moderate, and high. Result suggests that the women at substantially increased risk of metabolic complications were more likely to consume

rich food compared to those who actually need it i.e. those women with low BMI. It was further added with other factors such as affordability [belonging to richer class and eating] and living in urban region compared to poor and rural women [$p < 0.001$]. The conscious richer urban women with higher education were found to be at increased risk of type 2 diabetes mellitus in India. This paper advocates the availability of proper guidelines related to diet intake can help in reducing health risk among adults as those with lower BMI were not eating while richer, more educated and living in urban were found to consume food on daily or weekly basis. Despite the national representativeness the result suggests the self-reported food pattern, which can be under-or over reported to specific food.

Paper ID-94: Anaemia Among Tribal Women of Reproductive Age Group: Issues and Challenges

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Background: Anemia is a major public health problem in India. Epidemiology of anaemia varies among different regions due to various socioeconomic and other influencing factors. There is paucity of studies on anaemia among the tribal women who have a different food pattern and adverse cultural practices. Hence this study was carried out to estimate the prevalence of anaemia and its association with eating patterns among tribal women of reproductive age 15 to 49 years.

Materials and methods: Community based cross-sectional study was done in 18 tribal villages of Thalavadi block, Tamilnadu, from July 2021 to October 2021. Prior Institutional ethics committee permission and approval from state Government was obtained. Cluster sampling method was used and 407 reproductive age women out of 472 were enrolled. Informed written consent was obtained and using a semi-quantitative questionnaire detail on socio-demographic, maternal and reproductive characteristics, food frequency was collected. Anthropometric measurement was done and Haemoglobin level was assessed using Haemoglobin Photometer. Anaemia was diagnosed using WHO criteria and Standard scales were used for classifying wealth quintiles and BMI. The association between anaemia and possible risk factors was assessed by univariate analysis using chi square test. Those risk factors that were significant in the univariate analysis were subjected to multivariate logistic regression analysis.

Results: Prevalence of anaemia in the study participants was 93.6 % (95% CI: 95.3-91.9). After adjusting for possible confounders, low intake of protein (<55 gram / day) (adjusted odds ratio (aOR):4.04, CI: 1.33-12.27) and food frequency of peas less than 2 times per week (aOR: 4.19, CI: 1.16-15.13) were significantly associated with anaemia.

Conclusions: The study revealed prevalence of anaemia was very high among the tribal women and those who consumed less protein and low food frequency of peas were more prone to develop anaemia. Hence to reduce the burden of anaemia along with the on-going national programme, measures to improve dietary awareness among the tribal people could help to alleviate the condition. Keywords: Anaemia, Nutritional deficiency, Tribal women.

Paper ID-97: Survival Analysis for Cohort of Bhopal Gas Disaster Victims During 1985-2015

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Abstract: Context: After the gas tragedy on the night of 2nd/3rd December 1984 at Bhopal, the Indian Council of Medical Research (ICMR) started following up on four population cohorts with different levels of post-disaster mortality from 3-6th December 1984. Aims: The present study is undertaken to estimate the survival time and to explore leading causes of death among exposed and non-exposed groups. Settings and Design: Survival analysis is generally used to evaluate factors associated with the time to an event of failure or death among any covered population.

Methods and Material: To identify the treatment effects in Bhopal Gas victims to reduce the mortality rate, a retrospective cohort analysis with exposed and non-exposed was conducted on the outcomes of 92,320 individuals from 1985 to 2015 in Bhopal, India. Statistical analysis used: Basic survival analysis methods, Kaplan's Meier method and multifactor Cox proportional risk regression model was used to analyze mortality risk factors.

Results: During the past 30 years, the survivability was 87.25 percent, and the mortality rate was 7.2 percent for the cohort population of Bhopal Gas victims. Cox regression analysis showed that exposed males and aged 21 years & above (at the time of the disaster) were risk factors for higher mortality during the period.

Conclusions: During the initial two phases, the mortality was higher in the exposed group, but over time, their survival and thus mortality turned out to be the same in both groups. Key-words: Cohort, Gas victims, Survival Analysis.

Paper ID-99: Status of Co-morbidities, Food Practices and its Effect on Hypertension in Rajasthan

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Background: Hypertension is a severe risk to human beings' health due to its association with many comorbidities. Various research works have explored hypertension prevalence, socio-demographic determinants and treatment. However, the status of comorbidities, food practices and their effect on hypertension are lacking in Rajasthan. Hence, study was undertaken to study the status of comorbidities, food practices and their effect on hypertension.

Materials Methods We intended to fulfil this research gap by analysing the fifth round of National Family Health Survey data (NFHS-5). We also investigated the prevalence of those comorbidities if the respondents suffered from hypertension. We utilized Pearson's chi-squared test, and univariate and multivariate regression methods to analyse the association between disease distribution and risk factors.

Results Normal Systolic BP people were diagnosed with 16% low and 13% high diastolic readings. However, in normal diastolic, 10% and 42% of people were diagnosed with low and High Systolic Readings. Anaemia, diabetes and heart disease have a significant association with systolic BP. Similarly, cancer, anaemia and diabetes play a significant role in diastolic reading. People who are on treatment for heart disease or cancer have been diagnosed with a significant change in diastolic BP. However, people currently taking prescribed medicine to lower blood glucose have been diagnosed with a significant change in both systolic and diastolic readings. Systolic BP has a significant association with fish and fried food and is found to be high among people who eat daily. However, diastolic BP has a significant association with fish and chicken/ mutton and is found to be high in daily eaters. Normal range of Systolic and Diastolic readings varied by the age of individuals.

Conclusion Awareness of hypertension and related comorbidities, and duration of treatments among women, food habits is a major risk factor for cases of hypertension and related comorbidities.

Paper ID-105: Association Between Contraceptive Use and Interpregnancy Interval in India: Evidence from Pooled Data

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Many women in developing countries do not use contraception after birth and so they are more likely to become pregnant once fecundity return. However, still, it is unknown the contribution of contraceptive methods for postponing subsequent pregnancy in India. In this condition, it is become essential to understand the role of contraceptive methods for interpregnancy interval (IPI). IPI is the duration from the outcome of pregnancy to the conception of the subsequent pregnancy. Further, we want to understand the practice of contraceptive use and its association with IPI. We used the reproductive calendar canvassed in National Family Health Survey

(NFHS)2005-06, 2015-16, and 2019-21, a nationally representative survey pooled data, to examine the associations between contraceptive use and IPI, for the 149,449 women sample. We used bivariate and multinomial logistic regression to examine the associations. About 23% of women used any contraceptive methods after the previous pregnancy. Approximately 60% of women conceive their subsequent pregnancy <18 months. Women using contraceptive methods had lower odds (RRR:0.21;95%CI:0.20,0.23) of having an IPI of <6 months than 18-23 months than women not using them. Women using contraceptive methods had higher odds (RRR:1.42;95%CI:1.35,1.50) of having IPI of 24-59 months than at 18-23 months compared with those not using contraceptive methods. Women who are using modern and traditional contraceptive methods had higher odds (RRR:1.45;95%CI:1.37,1.54) (RRR:1.38;95%CI:1.29,1.47) respectively of having IPI of 24-59 months than 18-23 months and in comparison, with those women not using any contraceptive methods. The finding concluded that using modern contraceptive methods increases the duration of IPI in India over traditional methods. However, there is a need to more focus on using modern methods after the pregnancy outcome to increase the IPI.

Paper ID-117: Medication Non-Adherence Among Inpatients in India: Insights from Two Cross Sectional Surveys

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Background: As per World Health Organization (WHO), medication non-adherence is the leading cause of preventable morbidity, mortality, and healthcare costs. Medication adherence commonly refers to medication or drug compliance, but it can also apply to other situations such as medical device use, self-care, self-directed exercises, or therapy sessions. What we know about medication non-adherence is limited due to data limitations. This study is the first of its kind to put non-adherence behavior in perspective at the country level. Data and

Methods: The study uses the 60th and 75th rounds of NSS. Descriptive statistics and logistic regression models are used to explore predictors of medication non-adherence. This study uses information on inpatients only.

Results: Though the prevalence of medication non-adherence was improved by 11.81% percentage points from 2004 to 2018, still it was found to be notably high (11.53% in 2018). Age had a significant association with discontinuation behavior. Adherence behavior improved with age. Females had a comparatively higher prevalence (12.18%) than males (10.89%). Across all religious groups, the prevalence was close to the national average. Among caste groups, scheduled tribes reported the highest non-adherence (15.54%) than other groups. Having insurance coverage was associated with better adherence behavior. People belonging to the lowest wealth quintile had the worst adherence behavior. Medication non-adherence was almost double among people who went to public health care (15.52%) than those in private. Maternal health-related issues were associated with greater non-adherence, followed by infections. Life-threatening diseases such as cancers and tuberculosis were associated with better adherence.

Results from logistic regression models provided results in accordance with the bivariate analysis.

Conclusion: Overall, socio-economic differentials in medication non-adherence have improved over time. Non-adherence behavior in different health issues has a different level of improvisation over time. In India, there are no policies to address medication non-adherence. There requires a policy intervention that addresses the issues

Paper ID-122: The Burden of Disease and Epidemiological Transition: A Study of Elderly in Indian States

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Omran's seminal paper on epidemiological transition in 1971 described the changing burden of communicable and non-communicable diseases. While most developed countries have completed the transition, developing countries like India face a double burden of communicable and non-communicable diseases. However, there is a stark difference in the stage of epidemiological transition in the states, and in their burden of diseases. The present paper attempts to place Indian states in various stages of the epidemiological transition, and to assess the

prevalence and determinants of communicable and non-communicable diseases among the elderly. The study uses the first wave of data from the Longitudinal Ageing Survey of India. About 45 percent of the elderly in India suffer from non-communicable diseases. There is a large variation in the burden of disease among the elderly in the states of India. The lowest prevalence of the non-communicable disease among the elderly is observed in Nagaland (16 percent), followed by Arunachal Pradesh (24 percent). The highest burden of non-communicable disease is in Kerala (66 percent), followed by Punjab (58) and Goa (57 percent). A little over one-fourth of the elderly population in the country suffer from communicable diseases. While more than half of the elderly suffer from communicable diseases in Chhattisgarh, it is only five percent of the elderly in Nagaland. The dominance of non-communicable diseases over communicable diseases is the framework of epidemiological transition. In this regard, the states of Chhattisgarh, Madhya Pradesh, Mizoram, Uttar Pradesh, Rajasthan, and Bihar continue to be dominated by communicable diseases. States categorised as yet to start, started, and completed epidemiological transition, would be added to the socioeconomic and demographic predictors for the prevalence of communicable and non-communicable diseases in logistic regressions. Such analysis would isolate the effects of various covariates while controlling for the stages of transition.

Paper ID-123: Are the Poor Left Behind? Estimating the Income-Related Inequalities in Healthcare Coverage in India

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To monitor the progress towards Sustainable Development Goals, it is imperative to monitor the coverage of health intervention in population subgroups as national averages are unable to reveal whether there exists inequality of any kind. Moreover, socioeconomic and regional inequities can pose a threat to reaching universal coverage of health interventions and further health progress. On this ground, the study aims to measure the magnitude of inequalities in the coverage of various Reproductive, maternal, new-born and child health related (RMNCH) interventions in the Indian States. The study uses National Family Health Survey (NFHS) data conducted in 2019-21 for the analysis. Though the measurement of intervention coverage can be possible by single indicators, we use a summary measure i.e., composite coverage index including 8 RMNCH indicators due to various advantages. To reveal the inequality pattern, the study uses both simple measures like difference and ratio and advanced measures like slope index of inequality (SII) and (RII). The results of the study underscore an erratic distribution in terms of coverage of CCI across states and across wealth quantiles. The coverage of different indicators of RMNCH varied across the states as well as wealth quantiles. Coverage is lowest for ARI followed by DFPS and ANC. It reveals a pattern of pro-rich inequality which suggests a higher coverage among the richest section of society.

Paper ID-127: Demystifying the Equivocal Association Between Sleep Disorder and Frailty? Findings from A Cross-Sectional Survey

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Introduction- The study is an attempt to investigate the relationship between sleep disorder and frailty among older Indian adults. And to explore the interactive effects of sex in the possible association.

Methods- The study used Longitudinal Ageing Study in India (2017-18) data. Descriptive statistics and cross-tabulation were presented in the study. Also, a binary logistic regression analysis was used to fulfil the study objectives.

Results- As per Model-1 older adults with sleep disorders had a 90% higher likelihood of being frail than their counterparts [UOR:1.90; CI: 1.80,2.00]. Unadjusted interaction showed that women with sleep disorders had a 20% significantly higher likelihood of being frail than older men with sleep disorders [UOR: 1.20; CI: 1.10,1.30].

Conclusions- The study has clinical relevance since sleep complaints offer a means for identifying those who are vulnerable to frailty, and through appropriate intervention, understanding the causes of sleep disorder can help to delay and, in some cases, reverse frailty.

Keywords: Sleep disorder; frailty; older adults; LASI; India.

Paper ID-136: Emigration and Debt: Perspective from Return Migrants in Kerala Migration Survey 2018

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Migrants often take debt to finance expensive cross-border migrations, and remittances sent home are frequently used to repay household debt. In the Indian state of Kerala, emigration is also driven by debt, and migrants face financial difficulties as a result of their debt burden. So, this present study aims to know the pattern, predictors of debt migration, and its impact on the household economy in Kerala by using the data of the Kerala migration survey, in 2018. Bivariate and multivariate analyses (binary logistic regression) were performed, and the debt-to-income ratio (DTI) was computed to fulfill the objective of the study. The result indicates that 45.52 percent of migrants in Kerala emigrated by taking debt. Half of the debt migrants fully rely on debt followed by their savings and debt while non-debt migrants manage their migration expenses with their savings followed by the family. Debt migrants spend more money than non-debt migrants on the process of migration. Landholding, schooling, and cost of migration is the major determinant of debt migration. Landholding and cost of migration are positively related to debt migration, while schooling is negatively associated. Debt migration may not be a profitable or sustainable endeavor, as non-debt migrants' annual savings and monthly expenditures are higher than debt migrants. The debt to income ratio (DTI) shows that the financial health of 19 percent of households is in severe condition, 11 percent is in manageable condition, and 69 in a safe condition. The financial health condition of those households in the safer condition is mainly from non-debt migration households. Schooling and higher income in the agricultural sector may reduce the percentage of debt migration. Governments in both sending and receiving countries can reduce debt migration by monitoring and regulating migration costs.

Paper ID-138: Physical Multimorbidity Patterns and Healthcare Utilization Among Middle-Aged and Older People in India: Does Health Insurance Matters?

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Objective: The present study aims to explore the epidemiology of physical multimorbidity patterns and their association with healthcare utilization among Indian middle-aged and older people. Additionally, the role of health insurance in the use of healthcare services was explored.

Methods Data for the study were drawn from the Longitudinal Ageing Study in India (LASI) wave 1, 2017-18 (N=65,366; aged 45 years or above). Measures for healthcare services included inpatient and outpatient care and private and public healthcare facilities. A list of 19 chronic diseases was included in the study. Latent Class Analysis (LCA) was used to identify different multimorbidity patterns. Bivariate and multivariable logistic regression were used. All the analyses were health insurance stratified.

Results The adjusted odds ratios (ORs) for inpatient visits increased from 2.37 to 9.27% and 1.96 to 4.4 in middle and older age groups respectively. For middle age people with health insurance, the ORs for private services utilization were higher at all levels of multimorbidity rising from 1.7 (aOR: 1.7, 95% CI: 1.42-2.03) for those with one disease to almost 6 (aOR: 6.08, 95% CI: 3.57-10.34) for those with 4 or more diseases, compared to those with no disease. We identified 5 multimorbidity patterns including relatively healthy, metabolic disorder, hypertension/gastrointestinal/musculoskeletal disorders, hypertension/gastrointestinal disorders, and complex multimorbidity. Complex multimorbidity was associated with increased healthcare utilization outcomes. Health insurance stratified analysis found more healthcare use among middle-aged than older people.

Conclusion Multimorbidity patterns from this finding may support the creation of targeted policies and interventions to combat the growing burden of physical multimorbidity in India. India needs an integrated care policy that incentivizes primary healthcare clinics to manage chronic illness patients. Health insurance may be one of the means by which the issue might be mitigated.

Paper ID-141: Out of Pocket Healthcare Expenses Among the Urban Poor in India And Its Implication on Universal Health Coverage

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This study was undertaken to estimate Out of Pocket expenditures (OOPE) and resultant Catastrophic Health Expenditure (CHE) along with their determinants among the urban poor. A cross-sectional survey was conducted among 11,000 individuals from 2,400 urban households in 4 geographically diverse states of India. The average annual household healthcare OOPE was INR 6,689 (US \$97). Mean expenditure on hospitalization was INR 27,025 (\$392), with 95% confidence interval ranging from INR 22,734 (\$329) to INR 31,815 (\$461). Households spent INR 26,850 (USD 350) per hospitalization, which was catastrophic for 10% of the households, further pushing 4.7% below the poverty line. Hospitalization rates were found to be significantly lower among males as compared to females (OR 0.75, $p < 0.05$). The CHE was higher among males (10.8%), non-Hindus (14.8%), those over 55 years of age (12%), illiterates (12.1%), non-enrolled in health insurance schemes (10.4%) and those belonging to poor tertiles (11.7%).

Paper ID-142: An Analysis of the Contentment and Acceptability Indices of NRHM Among Rural Households of Assam

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In every country the government initiatives for upgrading the public health mostly keep its focus on the rural people. The introduction of NRHM (later becomes a sub mission of NHM) comes with the aim to provide affordable, accessible and available health care to the rural masses so as to have dramatic changes in the health status of the nation. Assam is covered under the mission as one of the high focus state and completed more than a decade in the state. The mission has changed the infrastructural mechanism of healthcare system to fulfill its goals. In this article, as a qualitative research work, people's perspective regarding the services provided by NRHM is trying to give the required focus regarding their acceptability and contentment. The ordinal responses of the respondents of the sampled villages pertaining to various questions put in a scale between extreme positive to extreme negative. The consolidated mean score is considered as Acceptability index and Contentment index (as the case may be). The responses to each of the question are put into a scale of five points i.e. +2, +1, 0, -1, -2. Attempt is made to cover various socio-economic sections of people of the rural Assam in the study. Based on primary data collected from the four villages of two representative districts of the states the study reveals the different level of acceptability and contentment among different section of people. Both the indices move in the same direction representing positive relation between two.

Paper ID-143: Age Structural Transition and Changes in Workforce in India

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Age structural transition is a by-product of demographic transition. The advancement of demographic transition results in age structural transition characterized by decline in child population and increase in the working age and old age population. Increase in the working age population identified as demographic dividend's can be considered as one of the powerful factors to boost up the economy of a nation. work participation rate is also an indicator of economic development. Therefore, this study examines the age structural transition and changes in workforce in India and its major states. Data were taken from the published reports of census of India, SRS and economic tables. Potential supporting ratio, dependency ratio, work force participation, changes in the demographic and economic indicators were used for the analysis. It has been observed that the declining fertility, mortality rates have changed the age structure of India's population, among the major states, potential supporting ratio is increasing over the decades from 1971-2011. Kerala and Tamil Nadu had crossed the supporting ratio and it is more than one in 2011, which means that these states have started the demographic dividend, Further analysis in Kerala shows that after 2051 the demographic dividend will end. Relationship between supporting ratio and GDP growth rate reveals that the demographic dividend had a positive impact on economic growth. Rate of growth of workforce had always been higher than that in population growth during

the last decades, it means that there must be an increase in work participation rate. There is a wide gap existed between male and female work participation rate. Changes in work participation rates indicates that the coming decades will face a massive increase in the working age population. Adequate employment opportunities need to be generated for the development of the country.

Paper ID-144: Assessment of Trends and Future Demographic Impact on Breast Cancer: A Comparative Study of Delhi and Chennai Cancer Registries

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A rapid increase in the incidence of breast cancer among women is observed globally and in India. Though breast cancer is curable, the lack of early diagnosis leading to the increase in case fatality makes the issue more severe in India. Assessing the past trend and projecting the future cancer burden is essential for the effective delivery of cancer-related services. Published reports of Population-Based Cancer Registries provide the registered incident cases of cancers. In this paper, registered incident cases of breast cancer data from 1990 to 2014 for the two PBCRs - Delhi and Chennai - is obtained from the PBCR reports and with the help of Lee-Carter mortality modelling, age-specific breast cancer incidence is projected up to the year 2026. Breast cancer incidence projections with age structure fixed in 2014 to projections accounting for demographic change are compared. This study revealed that Breast cancer incidence among women is increasing tremendously in Delhi and Chennai along with age and time. Although there is no change in the pattern, there is an upward shift in the incidence of cases over time. The projection of breast cancer incidence in 2026, accounting for demographic impact will be around 34% in Delhi and nearly 5% in Chennai. The obvious increase in breast cancer incidence among women indicates an urgent need to strengthen existing services and facilities to control future morbidity and mortality due to breast cancer.

Paper ID-148: Older Migrants and their Characteristics: A New Aspect of Migration Study in India

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Background: Being aged and having a migrant feature might cause a double risk of vulnerability in poor economic and health status. In India, the concentration of the older population and older migrants increases continuously but due to a lack of data on migration health and ageing, there is a huge literature gap on the migration of older persons. This study focus on a new area of research in migration study in India

Objective: the main objective of this study is to examine the level and pattern of older migration and explore the socio-economic, demographic and health characteristics Data and Methodology: The data for this study we used from the first wave of the Longitudinal Ageing Study in India (LASI, 2017-2018). The total sample size for the present study was 65,452 older adults aged 45 years and above (male 30468; female 34984). Migrants are classified based on the duration of residence (DOR) and the place of the last residence (POLR) at the place of enumeration Descriptive and bivariate statistics were used for the examination.

Results: A total of 55.01% of the older population is internally migrated and 1.31% of Immigrants and 43.68% are non-migrants. More than 55% population of India has migrant characteristics and, in this migration, most of the persons migrated before 25 years, and only 4.15% migrated in the last 0 to 9 years. The urban population has more migrants than the rural and this is also the same in the case of male and female migrants. The ST population has less migrated than the other cast group. Most of the migrants have no education and currently not working

Conclusion: The present study focuses on a new aspect of research in the field of migration studies. The present study could be helpful to fulfil the research gap in migration, ageing and health. Key Word: Older Persons, Ageing, Migration, Internal migration, Health

Paper ID-151: Correlates of Obesity Among Adult Women in Kerala: A Study Based on NFHS-5

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This paper aims to study the extent of obesity among adult women and to examine the correlates of obesity in Kerala. The analysis is based on 10609 non-pregnant women of age group 15-49 in NFHS-5 data for Kerala. BMI was used to define obesity ($BMI > 30.0 \text{ Kg/m}^2$). Covariates included in the study are age, education, wealth index, marital status, religion, caste, residence, diet variables and behavioral variables. chi-square and Logistic regression methods were used to estimate the effects of these variables on obesity. About one out of 10 (10.0%) non-pregnant women aged 15-49 years are obese in Kerala. Obesity is more prevalent in the 40-49 years age group (14.1%), and less prevalent among those aged 15 to 19. The prevalence of obesity is the highest among Muslims (12.2%), followed by Christians (9.9%) and Hindus (8.9%). Obesity is as high as 11.3% per cent of the richest women. In comparison to rural females, who have an obesity prevalence of 8.7%, urban females have a higher prevalence of 11.7%. Women who are married are more likely to be obese (12.2%), while women who have never been married are less likely to be obese (2.8%). The proportion of obese women with only an elementary education is 11.1 %. Obesity is more prevalent among the forward caste groups, with a rate of roughly 10.2%. The frequency of reading newspapers and the frequency of watching television were found to have a significant association with BMI. The logistic regression analysis showed that age, place of residence, marital status and religion are strong correlates of obesity. In an era of the increasing prevalence of non-communicable diseases, rising figures of obesity is a cause of concern and warrant urgent action.

Paper ID-153: An Individual-Specific Approach to Multidimensional Child Poverty in India: A Study of Regional Disparities

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Child poverty has recently been deemed a crucial component of poverty by development economists and policymakers. The global multidimensional poverty estimates indicate, in India, more than one-third of the under-five children experience multidimensional poverty. Using the recent Demographic and Health Survey data of India, 2019-21, Alkire-Foster's methodology was applied to estimate and decompose multidimensional poverty among children aged 0-59 months across its six regions. Based on child-specific SDG targets 15 indicators were selected covering five broad dimensions for constructing the multidimensional child poverty index (MCPI or M0). It is observed that the deprivation rates across the indicators varies widely across the regions. In terms of both headcount ratio (H) and M0, Eastern ($H=49.4$, $M0=0.222$), Central ($H=44.2$, $M0=0.19$), and North-eastern ($H=43.9$, $M0=0.184$) regions have remarkably higher values, and the Southern region ($H=11.2$, $M0=0.042$) have exceptionally lower values. At the national level, poor children were more deprived in the dimensions of standard of living and Early Childhood Development. Except for Western and Southern regions, all regions show a similar pattern. Unavailability of TV/Radio, not being vaccinated in time, inadequate sanitation, unclean cooking fuel and subpar housing condition are the leading contributors to M0 of all regions with varying magnitude and order. The contribution of drinking water, electricity and assisted delivery is remarkably lower in all the six regions. The findings imply that in order to eliminate multidimensional child poverty and safeguard children's rights, social policy must be developed with an emphasis on the age, region, dimensions and indicators of MCP. Keywords: Multidimensional Child Poverty; Headcount Ratio; MCPI; Region; India

Paper ID-155: Out of Pocket Expenditure on Institutional Deliveries in India

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The well-being of the mother has been an integral part of population policy in the country. According to WHO, household out-of-pocket expenditure (OOPE) on health comprises cost-sharing, self-medication, and other expenditure paid directly by private households. Despite the significant funding for the state and government programs to provide maternity care, institutional delivery expenditures continue to be high. OOPE for deliveries is a serious concern for policymakers. Studies investigating the factors of out-of-pocket expenditure on institutional deliveries are scanty in the country. The paper uses data from the NFHS-5 to investigate the magnitude and factors associated with OOPE for institutional deliveries in India. The mean OOPE on deliveries in the country is about 9500 rupees, with significant variations between the states. The lowest OOPE for deliveries is observed in Rajasthan, with a sum of rupees 4685, whereas OOPE in Kerala (Rs. 24,527) is almost six times that of Rajasthan. The states of Manipur and Goa follow Kerala in incurring high OOPE on maternal deliveries. The expenditure has been mainly on hospital stays, transportation, and medicine. States of central and eastern India have lower OOPE compared to the South and North East. To determine the factors affecting OOPE, General Linear Model has been used as the predictors consist of continuous and categorical variables. The result showed that the age of the mother, place of delivery, type of delivery, health insurance coverage, number of children, wealth, and years of schooling significantly impact OOPE. Financing the OOPE and the covariates of distress financing would constitute the second part of the paper.

Paper ID-156: Association of Anthropometric Measurements and Physical Activity with Chronic Conditions Among Elderly in India

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Introduction: The purpose of this study is to find out the association between Anthropometric parameters and chronic conditions among elderly in India.

Data and Methodology The study uses secondary data of the longitudinal Ageing Survey's first wave in India (2017-2018). The national sample for older people aged 60 years and above considered for the analysis. The prevalence of seven chronic conditions included in the study is based on the self-reporting of the respondents. The chronic conditions included in the study are cardiovascular diseases, chronic respiratory diseases, Bone or Joint disorders, Cancer, Diabetes, cholesterol and other chronic conditions and multimorbidity. Multimorbidity is a case of having two or more morbidities mentioned above simultaneously. Body Mass Index (BMI), Waist Circumference (WC) and Waist Hip Ratio (WHR) are the anthropometric parameters used in this study. Descriptive statistics and Binary logistic Regression are used to assess the association of anthropometric parameters with chronic conditions among physically active and inactive elderly in India.

Results Based on the binary logistic regression unadjusted and adjusted model for physically active elderly shows that an Indian elderly is 4 times more likely by obesity, 2 times more likely by high risk WC and 71% more likely by high risk level of WHR to develop any chronic conditions than their reference categories. Adjusted model for physically inactive elderly shows that an elderly is 3times more likely by obesity, 2 times more likely by high risk WC and 84 %more likely by high risk WHR to develop any chronic conditions than their reference categories.

Conclusion Our study shows that overweight and obesity, high risk WC and High risk WHR are highly significant risk for developing any chronic conditions among elderly in India. Awareness about the importance of physical activity and maintaining a healthy life style should be provided from an early age at community levels for healthy ageing.

Paper ID-157: Excess Mortality Estimates of Covid Pandemic in India: A Sub-National Level Analysis Using Data from CRS

*Mr. Jay Prakash
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The mortality estimates due to the Covid-19 pandemic has been the subject of debate among the scholars, program managers and policy makers. Undercounting observed due to the many disruptions in providing health services and reporting of data. As per the records from CRS, India registered 8.1 million deaths during 1st January to 31 December 2020 which is higher by 0.47 million from the previous year. The present study aims to examine variations in the excess deaths at the sub-national level from the lens of gender, residence and geography using latest available data from CRS for the years 2019 and 2020. Excess deaths due to the Covid-19 were analysed at sub-national levels. District level analysis are performed for the 6 States where excess mortality was registered by more 50 thousand. These states account for 85 percent of all excess registered deaths. In India, all the States/ UTs did suffer due to the pandemic at diverse extent. Our analysis shows that out of 36 States/UTs, total number of deaths increased in 24 States during 2019 and 2020. Maharashtra reported highest number of increases in deaths (by 114 thousand excess deaths) followed by Bihar, Gujarat, West Bengal, Andhra Pradesh, and Tamil Nadu (all reported more than 50 thousand excess deaths). Overall, more males (60%) died than females (40%) and more deaths reported in rural areas (58%) than in urban areas (42%). Age distribution of registered deaths reveal that excess deaths occurred in the age 55 and above in most of the states. Overall, about half of the deaths did not receive any medical attention. Prompt action by the government of India and timely imposed lockdown helped in averting many deaths in the first wave of Covid-19 during the year 2020. The high-risk districts need priority in addressing the pandemic situation in future.

Paper ID-159: Reading Household Deprivation in India - A Multidimensional Approach

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Deprivation indicates more than poverty, and this study aims to assess improvement in well-being and identifying mobility in the course of improvement, by combining multiple domains of deprivation experienced by Indian households, alongside its temporal transition. Data from the first and second rounds of the India Human Development Survey (IHDS) and Human Development Profile of India (HDPI) have been used to capture the transition of household deprivation over almost two decades. An aggregated measure was constructed using PCA by giving appropriate weights to factors on the basis of proportion of variance explained. The percentage of households that were severely deprived was found to have increased from 18.95% households in 1993-'94 to 22.11% in 2004-'05 to 24.32% in 2011-'12. Over this period of time, except households that were either severely or moderately deprived in 1993-'94, the condition of households at all the remaining levels of deprivation were found to have worsened.

Paper ID-161: Disrespectful Health Care During ANC among Women of Balarampur District, U.P.

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Disrespectful and abusive (D&A) practices during ANC/child birth emerged a major barrier in achieving quality of care. Its prevalence varies between 15 to 98% all over the world. The aim of this study (i) To find out the prevalence of disrespect and abuse during ANC services utilization and (ii) To find out the associated characteristics Materials & Methods: This study is conducted in the rural area of Balarampur district, U.P using cross sectional study design. The data was collected through pretested and structured schedule method. The characteristics of the study subjects were summarized by computing univariate analysis. Bivariate analysis was conducted for the prevalence of D&A during ANC by the socio-demographic characteristics of respondents. Chi-square test, relative risk at 95% were calculated. Binary logistic regression was employed to find determinants of disrespect and abuse during ANCs. 5% level of significance at two tailed tests is considered for significance. Results: The findings of this study are based upon 364 antenatal women who received the ANC

services during pregnancy from the health care facility. More than half (56.5%) pregnant women experienced at least one disrespect and abuse during ANC services utilization. Younger age group, SC/ST category, middle wealth index and less than four ANC visits pregnant women had significantly higher experience to D&A during the visits. Conclusion: It is concluded that facility-based services utilization is dependent on women characteristics and behaviours of staffs, facilities available at the centre.

Paper ID-168: Change in Prevalence of Micronutrient Deficiency Among Children in India

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One of the crucial indicators of public health is the micronutrient. The requirement of micronutrients is in micrograms; however, the deficiency of it leads to several chronic diseases such as osteoporosis, osteomalacia, thyroid deficiency, colorectal cancer and cardiovascular diseases. One-fourth of children are at risk of subclinical vitamin A deficiency worldwide. More than 300 million children are anaemic, and micronutrient deficiencies contribute to approximately 10% of all under-5 deaths globally. The coexistence of deficiency of micronutrients arises in developing countries. There are various government, and non-government programs are implemented to overcome this issue, but only a handful of countries have achieved the target. Our study addresses two research question. How do temporal and socio-culture, ecological and contextual factors affect the intake of micronutrients among children of age 6-23 months in India? Second, what is the spatial heterogeneity of micronutrient deficiency in India? This study is based on the two rounds of the National Family Health Survey, NFHS- 4 (2015-16) and NFHS-5 (2019-21). The independent variable for this study is the consumption of vitamin A, iron supplementation, micronutrient powder and iodine among children aged 6-59 months, and dependent variables are children's age, sex of the child, Mother's educational status, Birth order, breastfeeding status, wealth status of the household, Caste, Religion and region. Descriptive analysis, logistic regression, and spatial analysis are used. The findings show that deficiency of micronutrients among children reduced over the course of four years (2015-16 to 2019-21). Mothers' educational attainment and economic status are inversely proportional to the deficiency of micronutrients among the children. The highest education level of the mother has lower odds of vitamin A deficiency in their children (OR=0.68; p<0.001) and iron deficiency (OR=0.78; p<0.001) in 2015-16. The spatial analysis reflects that the EAG states are more likely to suffer from micronutrient deficiency.

Paper ID-171: Impact of Education on Women's Autonomy in India

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The SDG-5 emphasizes ensuring the full and effective participation of women in all levels of decision-making in economic, political, and other public life. This paper aims to assess the impact of women's education on the autonomy they enjoy in making three kinds of decisions-health care for self, major household purchases, and visits to her family and relatives. This study utilizes the data from 3 rounds of NFHS. Unit of analysis is women of reproductive ages of 15-49. Dependent variables are women's participation in making three kinds of decisions-health care for self, major household purchases, and visits to her family and relatives, separately and altogether. Independent variables included are: educational attainment, Age, place of residence, number of children, marital status, age at marriage, religion, caste, wealth quintile, Regions etc. Descriptive statistics, Multiple logistic regression models were used to analyze the relationship between educational attainment and other explanatory variables with women's autonomy. Both women's educational attainment and autonomy in decision-making have improved significantly in the last 15 years through all the socio-economic groups and states, however, degree of change varies across the groups and states. Women's increased education is positively associated with autonomy in their own healthcare decision-making; however, their more schooling shows non-significance with other outcome measures. Interestingly, rich women are less likely to have the autonomy to make decisions in own healthcare. Women's empowerment in India is heavily dependent on many different variables that include geographical location, educational status, social status, and age. Autonomy of women has a great link with education, age, access to resources, and communication with their husbands as well. Women are becoming more autonomous due to enhancement in their education, exposure to media,

awareness, high access to resources, strong communication with their husbands, freedom from domestic violence, and freedom of movement.

Paper ID-172: Migration, Remittances, and Poverty Reduction in Rajasthan, India

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This paper examines the effect of migration and remittances on the socio-economic conditions of remittances receiving and non-remittances receiving households. The study utilizes the nationally representative data of National Sample Survey (NSS) 64th round, and 2nd round of Indian Human Development Survey (IHDS). This paper begins with a discussion of migration, remittances, and poverty at the household level. A huge diversity exists in the utilisation of internal and international remittances at the areas of origin. The estimate reveals that internal and international remittances not only reshape the life chances of remittances receiving households but also fulfil the diversified non-food necessities. The result from the multivariate logistic analysis shows that households from rural areas received higher remittances compared to the urban area. Thus, it gives strength to absorb the risks and shocks of catastrophic health, marriage expenditure and incidence of crop failures to the rural households. In line with an optimistic view, the findings of the present study show that remittances-based migration enhances the socio-economic status and reduces poverty of migrant households. Based on propensity score matching technique, the results also show that the remittances play a significant role in reducing poverty at the household level.

Paper ID-176: Impact of Mid-Day Meal, Food Security and Dietary Diversity on Stunting Among School Age Children

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Malnutrition, especially under-nutrition, is a major public health problem affecting millions of people. The school-age period is nutritionally significant because these are the formative years in the life when major physical, psychological, and behavioural changes take place. The present study provides a snapshot of nutritional status of children. The role of the Mid-day Meal Scheme, Dietary diversity, and household food security status have been explored. This study was carried out in Uttar Pradesh, which includes information of 455 children of 5 to 14 years. Overall, 32 percent of children covered in the study were stunted. The prevalence of stunting was higher among the girls, SC, Muslim and elder children. More than 33 percent of children who always eat MDM in the school were found stunted in comparison to 29 percent of children of those who did not eat or occasionally eat MDM. Dietary diversity dose not shows any variation on stunting. However, 20 percent of children of food secure household and 30 percent of food insecure without hunger households were stunted. Whereas, a higher proportion of children (35%) of food insecure with hunger households were stunted. Results of logistic regression indicate that there is no significant association between the stunting among children and their participation in the MDM Scheme. Further, the children from food insecure with hunger households were 2.13 ($p < 0.05$) times more likely to be stunted than children of food-secure households. Age, religion, and type of household emerged as the significant determinants of stunting. Study indicates that children who eat MDM were more likely to be stunted. It may be because most of the children who participate in school lunch belong to poor families, food insecure and households with low dietary diversity. Food security at the household level revealed a significant and positive effect on stunting.

Paper ID-175: Use of Information Technology in The Production of Real-Time Data for The Management of Large-Scale Programs - A Note on India'S Deworming Program

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The WHO estimates that 220 million children in India between the ages of 1 and 14 years are at risk for Soil-transmitted helminths (STH). To curb its spread, the MoHFW, Government of India launched the National Deworming Day (NDD) program in February 2015. Since then, NDD has emerged as the largest 'fixed-day' public health program for the treatment of intestinal worms. Evidence Action is working with the Government of India to deworm up to 260 million preschool and school-age children through National Deworming Day (NDD), under the banner of our Deworm the World Initiative. Currently, Evidence Action is working in 11 states. Driven by our commitment to evidence, scale, and cost-effectiveness, Evidence Action has focused keenly on developing robust data collection and monitoring processes to accurately assess how many children the program reaches (coverage data) and how well the program is delivered in schools and preschools in Anganwadis across the country (process monitoring data). Over the years, information technology (IT) has played a vital role in managing large-scale deworming programs. Over the years, for reducing human error and improving data quality, Evidence Action has worked with the Government to progressively digitize data collection, improving our monitoring efficiency and the quality of program data. This paper intends to highlight the convenience and feasibility of using electronic systems like Survey applications and NDD tele calling applications for the large-scale multi-state data collection on deworming. Results showed that the use of technology has improved overall program delivery, and increased cost efficiency, coverage, and real-time preparedness for NDD, thereby signifying increased accountability for all the stakeholders involved. The paper suggests that with progressive digitization the deworming program can be scaled up to massive heights with improved monitoring efficiency.

Paper ID-177: Differentials on Fertility Indicators of Tribal and Non-Tribal Populations in Manipur

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In spite of so much emphasises given to backward areas for seventy-five years of Indian independence, its north-eastern states are nowhere near a target at national socio-demographic goals. It is more prevalent in Manipur, the easternmost state internationally bordering with Myanmar. With a unique feature that a maximum number of dialects with least number of populations', the tribal people in Manipur are having more serious demographic imbalances than other tribes in the country. Research Question: What are the differences in the levels of fertility indices of women residing in between valley and hill areas? Objective: It is to investigate the regional variations in the fertility indicators between hill and valley populations. Methodology: A community-based study was conducted under cross sectional mode during the twelve months period from September, 2018 to August, 2019 taking 1177 eligible women having at least a live birth under cluster sampling scheme in two districts of Manipur namely Thoubal (valley) as non-tribal population and Chandel (hill) as tribal population. Multiple regression models are utilized to identify the causal factors of the differentials in fertility indices. Findings: Among the variables, the significant variations have been found in age at marriage, desire of son, post-partum amenorrhoea, contraceptive uses etc. each at $P < 0.001$ and also in age at menarche, infant and child mortality, still birth, age at menopause etc. each at $P < 0.01$. Conclusion: The management of these indicators at a level consistent with the national target of stable population in India by the next decade is highly needed to have a linkage with sustainable development goals to be achieved by 2030. Keywords: age at marriage, sex preference, contraceptive, regression models, P-value.

Paper ID-178: Trend and Levels of Son Preference and Its Association with Women Empowerment Among Married Women Aged 15-49 Years in India, 2005-2021

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The son preference is a well-documented ancient practice and is a widely accepted phenomenon in South and East Asian societies. In patriarchal societies, sons are seen as the economic assets of the family, bearer of the surname, providing old-age insurance to their parents, whereas daughters are considered as financial burden. So far very limited studies have been conducted in India on the relationship between domestic violence and son preference or how domestic violence affects son preference. Therefore, the current study aims to examine the relationship of son preference with the women's autonomy and domestic violence in India. The study utilized three rounds of the National Family Health Survey (NFHS); NFHS-3 (2005-06), NFHS-4 (2015-16), and NFHS-5 (2019-21). Son preferential attitude among Indian women was assessed through, a dichotomous variable 'Son preference': YES (ideal number of boys greater than number of girls) and NO (ideal number of boys less than or equal to number of girls). Pooled conditional logistic regression models were fitted on the likelihood of preferring more ideal sons than daughters to assess the effect of women's empowerment, demographic and socioeconomic predictors. Educational status of the couples and the educational gap between them plays a significant role in the son's preferential attitude. Compared to the both the couples being non-literate, the odds were 0.56 times lower (95% CI: 0.49-0.63) among couples with wife better educated and was 0.62 odd times (95% CI: 0.58-0.66) lower when both of them were equally educated. Further, higher age at first cohabitation of the women was negatively associated with son preferential attitude (OR=0.84; 95% CI= 0.80, 0.88). The odds of son preference were lower among women with decision making capacity in the household ;29% higher among women experiencing any violence and 45% higher among women experiencing all three violence.

Paper ID-182: Mediating and Moderating Effects of Social Engagement on The Association Between Psychological Disorders and Cognitive Functioning in Older Indian Adults: Evidence from LASI Survey

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This study aimed to examine the mediating and moderating effects of social engagement on the association between psychological disorders and cognitive functioning in older Indian adults by utilizing a national representative survey. Methods: The study used data from the first wave of the Longitudinal Aging Study in India (LASI) conducted during 2017-18. The analytical sample included 26,757 older adults. Structural Equation Modelling (SEM) was used to assess the mediating effects of social engagement in the association between psychological disorders and cognitive functioning. For SEM analysis, Spearman's correlation coefficient was used to calculate the correlations between observed variables. Furthermore, linear regression analysis was used to derive the association of individual social engagement factors and psychological disorders with cognitive functioning. Furthermore, moderating effects of social engagement on the relationship between psychological disorders and cognitive functioning were assessed. Results: The results for the adjusted models depict that older adults with greater social engagements had significantly greater cognitive functioning than individuals with low social engagement. Moreover, indirect effect of social engagement in the relationship between psychological disorders and cognitive functioning was significant and indicated that 16% (-0.011/-0.071) of the variance in cognitive functioning was produced by social engagement as a mediator. Moreover, the interaction between high psychological disorders and high social engagement. After adjusting for various covariates, significant high social engagement moderating effects were obtained on cognitive functioning (0.79; 95%CI: 0.24,1.35). Conclusion: The current study provides an empirical framework for researchers through testing the mediating and moderating effects of social engagement between psychological disorders and cognitive functioning in older Indian adults. Considering the probable mechanisms, it can be stated that these findings may help design effective social integration interventions aimed at improving psychological and cognitive health in older adults in India.

Paper ID-195: Completed Fertility Level of Women in Manipur as International Border State

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Rationale: Experienced the heterogeneity in stages of demographic transition, Manipur is also one of high fertility states in India. Despite the immense values in 12 strategic themes in order to achieve the national socio-demographic goals for stable population in respect of National Population Policy (NPP)-2000, no community based study for identifying the causal factors of completed fertility is witnessed in Manipur. **Research Question:** What is the set of causal factors of variation in high completed fertility of menopausal women in Manipur? **Objectives:** It is to evaluate the socio-demographic determinants of differential in the completed fertility of elderly married women aged 50-55 years in Manipur. **Materials and Methods:** A retrospective cross-sectional study of 1217 ever-married women after experiencing their menopause was conducted in the two districts of Manipur valley Imphal East and Imphal West under cluster sampling scheme. The survey was performed during the period from October, 2018 to June, 2019 taking 11th July 2018 as reference date of the survey. Multiple binary logistic regression models are used in the community based empirical data. **Findings:** The completed fertility (3.2) is found to vary with education ($P<0.01$), sex of 2nd birth ($P<0.01$), and also couple's desire of son ($P<0.01$) in the population. **Conclusion:** With identification of the determinants, the present findings may be baseline information for future researchers relating to maternal health development which might again be linked with the national target of population control in India.

Paper ID-206: Tobacco and Alcohol Attributable Mortality in India: A Systematic Review

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Background: It is an established fact that tobacco and alcohol consumption lead to mortality. However, few studies quantify the burden of tobacco and alcohol consumption among Indian men and women. Despite numerous efforts to control and reduce the prevalence of tobacco and alcohol consumption and the fact that there exist a significant time lag between consumption and associated mortality, this study aims to bring together all existing literature estimating mortality that is attributable to the consumption of tobacco and alcohol among Indian men and women. **Method:** A systematic review was conducted by using Google, Scholar, Medline (Pubmed) and Cochrane library database until 2021 using combinations of different keywords. National and sub-national studies estimating mortality attributable due to tobacco use and alcohol consumption were included in the study. Tobacco consumption includes both smoking and chewing tobacco. Studies on tobacco and alcohol prevalence and studies from outside India were excluded from the review. We included studies from 1990 to recent times to review mortality attributable due to tobacco and alcohol consumption. **Result:** 8 national and 7 regional studies estimated mortality attributable to tobacco consumption while only 7 national and 4 regional studies were obtained which quantified mortality attributable to alcohol consumption among the Indian population. Smoking was associated with a reduction in median survival of 8 years for women (99% CI, 5 to 11) and 6 years for men (99% CI, 5 to 7). Alcohol attributable age-standardized DALY's in India increased over time from 1574 DALY's to 1722 DALY's per 100000 between 1990 and 2013. **Conclusion:** Recent estimates on mortality attributed due to tobacco consumption and alcohol consumption are missing in India. Additionally, gender and regional estimates on tobacco and alcohol related are necessary to develop targeted approach since consumption of tobacco and alcohol varies by gender and states in India.

Paper ID-207: Identifying the Health Expenditure Heterogeneity in India: A Finite Mixture Model Analysis

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Studies found that higher health care expenditure is associated with higher socio-economic consequences, but few studies have examined the heterogeneity of health expenditure. Using National Sample Survey, we analysed how a unit change in health have a different gradient on health expenditure by different characteristics. We identified three such classes. In this study on Indian context, we analysed the gradient of health expenditure for a change in health status. In our analysis, it was found that there exist three classes of latent distribution, which explains health expenditure distribution. These classes are mutually exclusive in nature, but we found that class I have lower average expenditure while class III have higher average expenditure, however when condition on disease or health status of person we found that irrespective of the socio-economic status people tend to spend more health care expenditure when the health status happens to worsen.

Paper ID-210: Income, Income Inequality and Health Inequality in India: A Pooled Analysis of India DHS 1992-2021

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Health inequalities have been a reason for concern at the national and international levels because of the spillover effects it creates on the overall well-being of a population. In the developing country context, like India, health inequalities research has been widely focused on income-related inequalities, without much emphasis on how income translate to health inequalities. This study examines the relationship between income inequality and health inequality in India. Five rounds of the National Family Health Survey are pooled and used in this study. Concentration Index, Wagstaff Inequality Decomposition analysis, and Fixed Effect Pooled OLS regression are used. The study finds that there exist wide inequalities both within and across the states and these inequalities have increased over time. The Wagstaff decomposition analysis showed that wealth contributed the highest to the income-related health inequalities across all the indicators over time. However, the pooled regression results showed a positive association between the state-level Gini coefficient and the health inequalities, the association wasn't statistically significant when controlled for the background characteristics. Given the abysmally low health status of the population in India, the persistence of inequalities poses serious threats to development and also makes targeted policy interventions difficult.

Paper ID-212: Measuring the Financial Impact of Disabilities in India

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Background: People with disabilities are vulnerable because of the many challenges they face: attitudinal, physical, and financial. The National Policy for Persons with Disabilities (2006) recognizes that Persons with Disabilities are valuable human resources for the country and seeks to create an environment that provides equal opportunities, and protection of their rights. There are limited studies on health care burden due to disabilities. Aim: The present study examines the socioeconomic and state-wise differences in the prevalence of disabilities and related household economic burdens in India. Methods: Data for this study was obtained from the National Sample Survey (NSS), 76th round Persons with Disabilities in India Survey 2018. The survey covered a sample of 1,18,152 households, 5,76,569 individuals, of which 1,06,894 had disability of any kind. This study performed secondary data analysis, using descriptive statistics, and bivariate estimates. Results: The finding of the analysis showed that prevalence of disability of any kind was 22 persons per 1000. Around, one-fifth (20.32%) of the household's monthly consumption expenditure was spent on out-of-pocket expenditure for disability. More than half (57.1%) of the households were pushed to catastrophic health expenditure due to one of the members being disabled. Almost one-fifth (19.1%) of the households who were above the poverty line were pushed below the poverty line after the expenditure of the treatment of any of the member of the household. Percentage shortfall in income from the poverty line was with (11.0%) due to disability treatment care expenditure. Conclusion: The study provides an insight on the socioeconomic differentials in out-of-pocket expenditure, catastrophic expenditure for treatment of any kind of disability. To attain SDG goal 3 that advocates healthy life and promote well-being for all at all ages, there is a need to recognize the disadvantaged and those who are disabled.

Paper ID-219: Association of Obesity and Bone Disease Among Older Adults in India

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Background India is experiencing a demographic transition due to increased longevity and reduced mortality. The need for long-term care increases with rise in chronic conditions in older ages. Obesity and bone diseases have increased substantially worldwide in the last three decades, particularly among older adults. However, the literature discussing the coexistence of obesity and bone diseases among Indian older adults is scarce. The current study examines the gender differences in the coexistence of obesity and bone diseases among Indian older adults by using data from a recently released nationally representative survey. The bivariate and multivariable analysis is done to analyse the determinants of obesity and bone diseases. Further, stratified logistic regression is used to investigate gender differences. A total of 65,173 individuals above the age of 45 years were analysed. The prevalence of obesity is 29.2%, and the prevalence of bone diseases is 16.4% among adults aged 45 and above. However, almost 12% of the individuals had both obesity and bone diseases. The odds of having bone disease among obese men is 1.1 (OR: 1.10, CI [1.09,1.11]) times more than others, whereas in obese females, the odds increase to almost 2.2 times (OR: 2.15, CI - [2.14,2.16]). The co-existence of obesity

and bone diseases appears to be associated with place of residence, marital status, having relatively high wealth and educational status. The findings of this population-based study show that obese women are more likely to suffer from bone diseases in later life, suggesting the need for better management and further research. The investigation of the relationship between obesity and bone is conducive to finding new targets for treating bone-related diseases, including osteoporosis, fractures and rheumatoid arthritis.

Paper ID-225: Domestic Violence against Women in India: A Regional Perspective of Indian States

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BACKGROUND: This paper deals with the forms of domestic violence which is ever faced by women in India. Domestic violence has become gradually more salient issue in developing countries as concern rising among the young researchers and policymakers who are interested to work in women's health and empowerment. Women are vulnerable to many forms of violence among which domestic violence is common form in developing countries. Most of the time, woman is a subject to inequality and always looked down as an inferior gender. **OBJECTIVES:** 1. To study the trend of domestic violence among regions of India. 2. To analyze different types of violence among regions of India. 3. To suggest policy implications. **DATA SOURCE AND METHOD:** i,§ Secondary data from National Family Health Survey (NFHS): round5,4&3. i,§ This study categorized the Indian states among 6regions as- northern, central, eastern, north-eastern, western and southern. Based on it, the data was categorized in three forms- physical violence, sexual violence and spousal violence ever. **RESULTS:** The percent of women who have ever experienced physical violence since age 15 has increased to 28.7% (NFHS-5) as compared to 26.8% (NFHS-4) but was high as 33.5% (NFHS-3). Experience of sexual violence has also increased to 6% (NFHS-5) as compared with 5.5% (NFHS-4), which decreased from 8.5% (NFHS-3). The spousal violence has also declined from NFHS-3 to NFHS-4 but increased during NFHS-5. These data show that domestic violence has declined during NFHS-4 but d increased during NFHS-5 in India. **CONCLUSIONS:** The problem of domestic violence has generated hundreds of separate interventions in social & health service and law enforcement settings. That's why it is a necessity for the policy makers to make policy including professional health care providers, so that they can also contribute to the society.

Paper ID-226: Predictors of Life-Course Risk Factors of Activity of Daily Living and Instrumental Activity of Daily Living Among Urban Older Adults in India

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Varanasi

The main goal of this study is to assess early life risk factors associated with Activity of Daily Living and Instrumental Activity of Daily Living in older adults using the life-course approach. The LASI Wave -1 data is used in this study, and it covers 72,250 individuals. Descriptive analysis and multinomial logistic regression have been done. The dependent variable is the relative risk ratio of having multiple ADL and IADL, and early life-risk factors such as poor health, financial status, and other factors were used as predictors. The multinomial logistic regression results show that ADL and IADL issues significantly increase with age. Females, in comparison to males, were significantly more likely to have one ADL or more than one ADL difficulty than those with no ADL. People with two or more morbidities suffered from more likely with one ADL and two or more ADL difficulties. The risk of two or more IADL difficulties was nearly 6.7 times higher in people aged 75 or above than aged 45 to 54. Uneducated people had 4.7 times more chance of one IADL difficulty than their counterparts. Fair health during childhood had significantly 1.3 times more chance to had one IADL than people who had good health during childhood. There was a significantly higher rate of ADL and IADL problems in the following groups: the elderly, women, the lonely, those with lower income, those with lower levels of physical activity, those who did not exercise, those who did not maintain social contacts, and those with a higher rate of chronic diseases. Special focus is needed on this group to improve these people's quality of life, and action can be taken in the care of elderly people, such as involving the social network and reducing the need for help with ADL/IADL.

Paper ID-230: Adult Children's Educational Attainment and its Association with Older Parents' Life Satisfaction in India

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Life satisfaction is a vital element of successful ageing and an important construct in the psycho-social study of ageing. In previous research, resources of social network members have been found to be associated with one's life satisfaction. In this study, we investigated whether having educated children relate to parental life satisfaction or not. The study also examines gender differences in the association between offspring education and parental life satisfaction. Data from the Longitudinal Ageing Study in India (LASI, 2017-18) wave-1 were derived for this study. A total of 28,649 older parents aged 60 years or more were included in the analyses. Multivariable Ordinary Least Square (OLS) regression models with interaction analyses were used to meet the objectives. Education of the highest educated child was found to be significantly associated with parental life satisfaction. A one-year increase in years of education of the highest educated child was associated with 0.12 ($\hat{\beta} = 0.12$, $SE = 0.01$) unit increase in life satisfaction score among the older parents. According to the interaction estimates, increase in parental life satisfaction for every unit increase in child education was 0.05 ($\hat{\beta} = 0.05$, $SE = 0.02$) units higher among mothers than fathers. The association between child education and parental life satisfaction was independent of child's sex. The findings of the study imply that children's education is a significant predictor of parental life satisfaction, and it could play a crucial role in shaping the health and well-being of older adults in India.

Paper ID-241: Dynamics of Internal Migration in India Using Circular Visualization: Evidence from 1991-2011 Census Data

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Introduction: Internal migration is essential to understand the population dynamics and multifaceted relationship between population and the development of a nation. Bilateral migration flows effectively represent contemporary migration patterns and facilitate future trends. The study explains the changes, trends, patterns and causes of internal migration in India using circular visualization over the period 1991-2011. **Data and methods:** The present study is primarily based on secondary data, from the Census of India 1991, 2001 and 2011. We have used the chord diagram plot to visualize India's recent state-wise migration from 2001 to 2011 using the circlize package. **Results:** Migration flows indicate that the mobility of the Indian population has gradually increased over the years. There is a gradual feminisation of migration in the country. Migration matrices constructed for intercensal periods (1991-2001 and 2001-2011) show that more than one-third of the internal migrants have migrated to the three states of Maharashtra, Delhi and Gujarat in all periods. It also shows that over one-third of all intercensal internal migrants originated from the states of Bihar and Uttar Pradesh during the intercensal periods. The total number of internal migrants was 141.9 million based on the place of last residence in 2011; this had been four times more since 1991 (35.2 million). Economically motivated migration constitutes 47%, 40.5% and 33.3% among males and just 5.1%, 3.5% and 3.5% among females census 1991-2011, respectively. **Conclusion:** Indian censuses record that in 2011, 450 million persons were migrants based on the place of last residence, which constituted about 37 percent of the country's total population. The socioeconomic changes in the last two decades have greatly affected the mobility of the population. The destination of migrants is a few developed and urbanized states which need particular attention in policy planning.

Paper ID-243: Homebased Long-Term Health Care of Elderly in India: Issues & Challenges

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One of independent India's successes, improving life expectancy at birth from about 30 years in the 1950s to the 70s in the 2000s, has also exposed a major flaw in the country's policymaking process: abject neglect of state support for the elderly (Tripathi 2022). Societal changes, including the rising number of nuclear families, smaller family sizes, and migration for employment by the economically active population, have impacted the care for the elderly at home by their family member/s. The current study using primary data from 6 states of India under the ICSSR-IMPRESS project shows, the majority of older adults are providing LTC to their 60-plus

family members, which raises their chances of burnout and decaying health. Further, around 40 percent of the caregivers are working. Our results also point out the overwhelming proportion of women involved in providing care, particularly daughters-in-law. LTC of the elderly in India is a shared responsibility between family members. On average weekly, they spend 16 hours on ADL and 10 hours on IADL support. Our results suggest the mental and physical health of caregivers is impacted. The LTC work has almost eroded every aspect of their life, personal, professional, and social. These results indicate that India should use the lessons from classically developed countries and design its own LTC for home-based caregiving by family members.

Paper ID-258: An Assessment of Subjective Wellbeing Through Life Satisfaction and It Correlates with Physical, Mental and Social Health Status Among Elderly in India

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Background: Life satisfaction refers to the assessment of one's own life subjective well-being in terms of self-perceived favourable qualities. It is widely associated with an individual's health status and social well-being but rarely gets the attention it deserves. The present study attempts to determine the constructing factors for self-rated life satisfaction, such as socio-demographic, economic, health behaviour, physical health, social health, and mental health among older adults in India. Methods: We examine the data on the elderly population from LASI-wave-1, 2017-18. We apply descriptive statistics, chi-square test of association and a hierarchical multiple logistic regression model to examine the association and determine the adjusted effect of predictor variables on the likelihood of an individual being satisfied with life. Results: Level of high Life Satisfaction (LS) was found to decline with age but on a small scale. The analysis shows a higher share of low-LS in urban areas (8.2%) when compared to rural areas (12.9%) of India. Other contributing factors like education and wealth revealed a linear proportional relationship with life satisfaction. Further, important factors significantly explain life satisfaction through the state of physical and mental health, the presence of chronic diseases, friends and family relations, dependency, and events of trauma or abuse. While comparing respondents, we find varying degrees of life satisfaction by gender, education, marital status, expenditure and other socio-economic features. We also find that besides physical and mental health, social support and well-being play a pivotal role in achieving higher life satisfaction in older adults. Conclusion: Overall, the findings are consistent with observations from numerous empirical studies done on life satisfaction. This work contributes to the study of the subjective well-being of elderly individuals in India based on self-reported levels of life satisfaction and further narrows the gap in knowledge about associated behaviour.

Paper ID-269: The Symbolic Regression Analysis of Mortality Trends for Major Non-Communicable Diseases in India

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An attempt is made to overview in the trends of mortality of major non-communicable diseases at Indian level using the data from Institute for Health Metrics and Evaluation (IHME) from 1990-2019. The Symbolic Regression is employed through software called Turingbot and determined models that depicts the trend and pattern of major non-communicable diseases. The resultant models are the combinations of mathematical operators, analytic functions and state variables. The validity of the models is evaluated with suitable statistical measures such as co-efficient of determination, mean relative error and root mean square error and the model's predictive power are checked using cross-validation technique. The analysis of the study shows that the optimal models for all diseases are the combination of algebraic and trigonometric functions. For cardiovascular diseases, the model that is fitted has coefficient of determination 0.975887, mean relative error 0.0194808, root mean square error 44216.2 and size or complexity of the model is 9. For Cancer, the model that is fitted has coefficient of determination 0.991352, mean relative error 0.0134365, root mean square error 9962.7 and size or complexity of the model is 12. For Chronic respiratory diseases, the model that is fitted has coefficient of determination 0.972439, mean relative error 0.0180008, root mean square error 19218.1 and size or complexity of the model is 13. For Diabetes, The model that is fitted has coefficient of determination 0.993522, mean relative error 0.0169719, root mean square error 3320.18 and size or complexity of the model is 19. The non-communicable diseases considered here are cardiovascular diseases, Cancer, Chronic respiratory diseases and

Diabetes and all the models corresponding to these diseases showed an upward trend in the mortality rates from 1990-2019. Government of India will have to necessary actions like funding for health policies and better prevention and control strategies.

Paper ID-275: Assessing Inequities in Out-of-Pocket Expenditure Among Cancer Patient in India: Evidence From 75th Round of National Sample Survey, 2017-18

Miss. Sasmita Behera, Ph. D scholar, NIT Rourkela

Jalandhar Pradhan, Associate professor, NIT Rourkela

Background: Cancer patients in India often face the burden of paying out-of-pocket (OOP) for their treatment that is not covered by any health insurance. Moreover, inequities in OOP payment are also found among these patients. This study aims to determine horizontal and vertical inequity in OOP expenditure associated with cancer hospitalisation in India and analyse the demographic and socio-economic determinants of these expenditures. **Methods:** Data has been retrieved from 75th round of the National Sample Survey Office (NSSO), conducted by the Government of India between July 2017 and June 2018. To analyse horizontal and vertical inequity, mean predicted OOP payment has been used across the MPCE quintiles and other demographic and socio-economic variables. The Generalised Linear Regression Model (GLRM) has been applied to study the determinants of OOP expenditure. **Results:** The result of vertical inequity shows that the predicted mean OOP expenditure is more for lower-income quintiles, indicates a regressive nature of health financing for cancer treatment in India. Non-SC/ST people have a higher percentage of OOP expenditure as compared to their SC/ST counterparts in the poor and middle-income quintiles, whereas for the richer income quintiles, OOP expenditure is higher for SC/ST population. The mean OOP cost is also higher for the male respondents than the female across all the quintiles. The result of GLRM shows that predicted OOP expenditure is significantly associated with residence, gender, insurance coverage, and level of care. **Conclusion:** India is experiencing a higher burden of OOP expenditure for cancer hospitalisation and widespread inequities in paying for this expenditure. Indian government and policymakers must act to remove these underlying barriers to provide affordable, equitable, and universal cancer care for the entire population. **Keywords:** Horizontal inequity, India, Cancer hospitalisation, vertical inequity, out-of-pocket expenditure.

Paper ID-276: Coping Strategies Adopted During Covid-19: A Study Among Married Couples in Tamil Nadu

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Sudden outbreak created many psychological problems, social panic and it also worsen the mental health conditions. The survey was conducted in Tamil Nadu during the pandemic period to examine the COVID-19 related coping mechanisms and associated factors in the study locations. The lockdown restrictions had impacted among the significant proportion of the study population's mental health status and among them a major proportion of were cope up by 'engaged with family members'.

Paper ID-277: Social Security for Short-Term Migrants (Women): A Need of Contemporary India

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Migrants constitute a 'floating' and invisible population, alternating between source and destination areas and remaining on the periphery of society. In India, internal migration has been placed at a very low priority by the government, and policies of the Indian state have largely failed in providing any form of legal or social protection to this vulnerable group. Seasonal migration for livelihood and employment is a growing phenomenon in India and social security is an important need of migrants, especially when we talk about women migration because women are more vulnerable in both of the aspects: Health and Security. The current study is based on short-term migration and these migrants are different from non-migrants in various aspects like their lifestyle differences, health-seeking behaviour, food behaviour, WASH condition, etc. because they changed their location or usual place of residence at various times and for various locations. Although we are lacking a rich source of migration data but some data based on NFHS we have seen the social status of short-term migrant and non-migrant women in India. The results show the accessibility of social security among short-term migrants (STM) and non-migrant women (15-49 y) and men (15-54y) in India. Approx. three-fifth of the STM women have a bank account which is higher than non-migrants (NM) (52.68%) as per the NFHS-4 data. Coverage of health insurance is very low in the Indian scenario, which is only 21 percent for both STM and NM women and only 20 percent for both STM and NM men. Although there must need a strong institutions and policy recommendations for the migrants and their social security, especially for women. **Key Words:** Short-term migrant, Non-migrant, Social security

Paper ID-280: Decomposing Hindu Muslim Differences & Trends in Family Planning Methods in India

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Abstract: Background: Religion influences the rituals, norms and culture in society. It impacts moral, ideological, and decision-making issues that affect everyone at some time in their lives. Objective: The study aims to investigate the Hindu-Muslim trends and differences in using family planning methods in India and the contributing factors to those differences. Data Sources: The study utilizes data from the third, fourth and fifth rounds of the National Family Health Survey (NFHS) (2005-06, 2015-16 and 2019-21) of women of the reproductive age group (15-49). Materials & methods: The analytical sample size for the study was 87920 (NFHS-3), 499627 (NFHS-4) and 487662 (NFHS-5) reproductive age group women aged 15 to 49 years. Descriptive statistics were carried out to present the initial results. Multinomial logistic regression and multivariate decomposition analysis were used to find the associations between explanatory variables and family planning methods and to identify the contributions of covariates that explain the Hindu-Muslim differences in family planning methods. Major findings: Multinomial logistic regression analysis revealed that religion is an important factor in family planning methods. Muslim women are 66% more likely to follow traditional family planning methods than Hindus, whereas Hindu women follow modern family planning methods. Also, differences in family planning methods can be observed according to age group, education, social category, wealth quantile, place of residence, parity and region. The significant contribution to the Hindu-Muslim gap in family planning methods was in differences in marital status (14.35% contribution), parity (12.22% contribution), watching television (5.45% contribution) and age group (1.31% contribution) among Hindu-Muslim reproductive-aged women. Conclusion: The findings suggest that affordable modern temporary methods and extension of private sector family planning services will increase contraceptive use. Due to a lack of education and awareness among Muslims, Muslim women still lag in using modern family planning methods compared to Hindus.

Paper ID-282: Mental and Motor Development of Children (0 To 42 Months) At Anganwadi Centers of High Burden District of Central Regions of Uttar Pradesh, India

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The study is part of research project funded by ICSSR. Abstract: the present study helps in understanding the need of sensory stimulation at the age of zero to 42 months of children and how rural parents and urban slum parents can benefit their infants with early sensory stimulation to achieve their developmental milestones and healthy brain development. Indian Education System had realized the importance of early childhood education and has implemented its concerns through various policies in needed areas for its betterment. Research have shown that zero to two years of stage is also very crucial and important with not just nutritional needs but also sensory stimulation thus we need to make the Indian society aware about it and take necessary steps for it. Thus, the project study is aimed to assess mental and motor development of infants and giving intervention to those assessed with developmental delays. Method: Cross-sectional Descriptive Research Design and purposive random sampling was done. The mental and motor development assessment of children was done by Bayle Scale Indian version. The intervention included knowledge about nutrition and sensory stimulation that can help infants in attaining their developmental milestones. The finding would also be helping in widening the perspective of early childhood concerns to the starting stage of children in rural areas. Key words: cognitive development, motor development, developmental delay, rural mothers, urban slum dwelling mothers, malnourishment.

Paper ID-288: Caesarean Section Deliveries in A State of India: Evidence from National Family Health Survey 2019-21

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Abstract Background: Caesarean section is the most essential and lifesaving procedure for mothers and new-born babies during a complicated pregnancy. In India, 22 states exceed the caesarean section rates recommended by the world health organization, which is 15 percent. The study aims to explore the status of caesarean section in Maharashtra. Also, investigate the determinants of caesarean section by different socioeconomic factors and find the inequality in caesarean section. Data & Method: The study used data from the fifth round of the

National Family Health Survey 2019-21. Univariate, bivariate and logistic regression were used to determine the caesarean section determinants. Oaxaca Decomposition is used to find inequality in the caesarean section among public and private health facilities. Result: The level of caesarean section increased from 5.4% to 25.4% from 1992 to 2021. Western region found the highest caesarean section 41.9% compared to another region. Amravati has the highest increase rate of caesarean section 25.6% in private health facilities. Caesarean sections are common among richest households (38.8%), highly educated mothers (39.9%), aged 35 years and more (33.9%) and living in urban areas 30.6%). The place of residence, household wealth, mother education, and body mass index are the major contributing factors to increase inequality among public and private health facilities. Conclusion: The study concludes that caesarean sections are higher among highly educated women, had more than one birth, done ultrasound tests before delivery, belong to urban areas, and have high family income. It should avoid unnecessary caesarean sections. Keywords: caesarean section, inequality, regions, Maharashtra

Paper ID-289: Regional Variability of Gender Divides in Self-Rated Health (SRH) Among Indian Older Adults: Evidence from Longitudinal Ageing Study in India

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Gender inequalities in socioeconomic and health status are challenging issue in LMICs, particularly patriarchal societies. Although it is widely known that Indian women have poorer self-rated health (SRH), few studies have been conducted to examine the gender inequalities in SRH across geographical region. As a result, the current research aims to investigate the regional variability of gender differences in SRH among Indian older adults. Using data from 64,655 respondents aged 45 and over in the first wave of the Longitudinal Ageing Study in India (2017-18), the proportion of poor SRH is calculated. Furthermore, the Sopher's Index was used to determine regional level gender inequality in poor SRH. Multi-level logistic regression is used to estimate the adjusted likelihood of poor SRH among women. Women were reported more poor SRH (62.5%) than males (54.4%), and gender inequality (0.15) was considerable in India. Gender inequality in poor-SRH was found to be considerable in every region, with the highest levels in the North (0.18) and the lowest in the Central (0.12). Multi-level logistic model suggested that, gender was a key predictor in poor-SRH in India (aOR=1.14; 95% CI=1.04-1.16). Women were 14% (aOR=1.14; 95% CI=1.03-1.27) and 10% (aOR=1.10; 95% CI=1.02-1.19) more likely reported poor-SRH than men in the Northeast and the South region, respectively. Gender disparities in poor SRH were significant in India. Gender disparity was found to be significant in urban areas compared to rural counterparts in most of the regions. The research suggested that India design a regional strategy to improve women's health. Keyword: Regional variability; Gender disparity; Self-rated health; older adults; India

Paper ID-293: Intimate Partner Violence as Determinant of Unintended Pregnancy Among Currently Pregnant Ever-Married Women of Rural India: Evidence From NFHS-5 (2019-21)

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Intimate partner violence as determinant of unintended pregnancy among currently pregnant ever-married women of rural India: Evidence from NFHS-5 (2019-21). Introduction One in three women experience IPV worldwide. IPV adversely affect victim's physical, sexual, psychological and reproductive health. Unintended (mistimed or unwanted) pregnancy is one of the potential consequences of IPV which can further result in induced abortion, maternal depression, psychological issue and anxiety. In this study, we aimed to investigate the association between different types of IPV and unintended pregnancy in rural India. Data and Methods The data comes from the fifth round of the National Family Health Survey (2019-21). The study sample included 2251 currently pregnant rural women aged 18-49. The dependent variable was unintended pregnancy and the primary predictor variable was type of IPV. Regression analysis was used to investigate the association between unintended pregnancy and different types of IPV and to examine what all other factors were significantly associated with unintended pregnancy. Result The unintended pregnancy was more prevalent among women who experienced IPV. Women who had experienced physical or sexual IPV were 1.64 times and those who experienced both physical and sexual IPV were 2.55 times more likely to report unintended pregnancy compared to woman who had never experienced any kind of IPV. Woman who had three and four or more children were eight and ten times more likely to report unintended pregnancy than woman who had none.

Conclusion The strong association between types of IPV and unintended pregnancy in rural India found in this study suggests the need to strengthen existing interventions and programs aimed at reducing both IPV and unintended pregnancy. Key words Intimate partner violence, physical violence, sexual violence, unintended pregnancy, NFHS-5, India

Paper ID-294: Role of Intimate Partner Violence in Increasing Sexually Transmitted Infections Among Women in India: A Propensity Score Matching Analysis

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Background: Intimate Partner Violence (IPV) against women can have direct consequences on women's health. Despite evidence from many developing nations that IPV is linked to both reproductive tract diseases and sexually transmitted infections (STIs), no research has yet been done to prove this connection in the context of India. Therefore, a quasi-experimental approach known as propensity score matching (PSM) is used to explore the causal link between IPV and self-reported STIs in India. Data & methods: A nationally representative sample of 63851 women age 15 to 49 years is obtained from the National Family Health Survey-5 (2019-21). In this study, the treatment variable is taken as 'ever experience of physical, emotional, or sexual violence'. The outcome is self-reported STIs. The study uses PSM with common support to accomplish the objective of the study. Based on the available literature, many available variables have been included in the model for matching. Results: About 32% of sampled women reported any physical, emotional, or sexual violence at the time of the survey. Among all sorts of IPVs the prevalence of physical violence is highest among women (29%). Women who experienced IPV in the last 12 months were 2 times more likely to self-report STIs compared to those who did not experience any IPV. After PSM, it is found that the women who suffered IPV, especially sexual and emotional violence, had 15% and 11% higher STIs than those who did not experience any sort of IPV. Conclusion: To reduce the burden of STIs in women which is one of the key health targets of the Sustainable Development Goals 2030, imperative efforts and interventions must be intensified in India to reduce IPV. Also, it is important to screen for STIs among women who present with IPV particularly those with sexual violence.

Paper ID-298: Understanding the Association Between Social Capital and Depression Among School-Going Adolescent Girls in Varanasi City

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Background: An adolescent acquires physical, emotional, cognitive, social, and economic resources through various forms of social capital that are the foundation for their overall health and well-being. However, social capital is a neglected determinant of mental health in low- and middle-income countries including India. Therefore, this study intends to examine the association of social capital on mental health i.e. depression among school-going adolescent girls in Varanasi. Methodology: Study is based on the primary data collected in Varanasi district of Uttar Pradesh, India. Nearly 350 adolescents and their parents were personally interviewed. Depression was categorized on a Likert scale using information from 7 questions asked in general mood section from the kidscreen-52 scale. Exposure variables were divided into three categories namely household, parental, and adolescents' personal characteristics. Percent distribution, cross-tabulation, and ordinal logistic regression were used to analyse the data. Results: Almost one-sixth (14.3%) of the adolescent girls reported severe depression and one-fourth (24%) reported low depression. Higher level of social capital was found to be associated with lower level of depression among adolescent girls. Nearly one-sixth (17%) of the adolescent girls with low social capital reported severe depression, whereas, only 7 percent of adolescent girls with high social capital reported severe depression. Wealth index, caste, type of family, mass-media exposure, and parental education were important associative factors. Conclusion: It is vital to strengthen routine school health check-ups and implement mental health screening programs in schools. Additionally, parents must be made aware of their role as a preventive factor.

Paper ID-302: Utilization of Maternal Health Care During COVID-19 In Assam, Kerala A Comparison with India And Kerala

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The COVID-19 pandemic has caused disruptions in the use of maternal healthcare, which could lead to stillbirths and maternal fatalities. The objective of this study is to find out whether maternal health care was disrupted due to pandemic situation in the selected areas viz. Assam and its two districts; Kerala, a socio-economically and demographically developed state and India, the country as a whole. Data are collected from Health Information Management System, National Health Mission, Govt. of India. The COVID-19 period is considered for a period of 5 months from April 1, 2020 to August 31, 2020. Data were compared with those of pre-COVID-19 days, from October, 2019 to February 2020, just before the pandemic. Results of student t-test shows significant reduction of Antenatal Care (ANC) registration and number registered within 1st trimester (within 12 weeks) in Assam and Kerala at 5% level of significance. Moreover, number of Pregnant Women received 4 or more ANC checkups reduced significantly at 1% in both the selected states and selected districts and reduced at 5% in India. Regarding institutional delivery, while Assam including both the districts experienced significant reduction at 1% and India experienced reduction at 5% but picture is different in Kerala where number of institutional deliveries was found more during covid period compared to pre -Covid period. However, post-partum care was significantly reduced. Analysis of the result indicates that this Pandemic has resulted in step back of whatever progress the country has achieved towards Sustainable development goals. There is urgent need to re-strategize and re-prioritize the maternal and child health care. Policy efforts and implementation are needed at global level, national level, and state as well as at community level. Keywords: Maternal Health Care, COVID-19, ANC, Institutional Delivery and Post Natal Care

Paper ID-310: The Impact of Household Dependency Ratio and Economic Status on Health Insurance Preference of Labourers in An Urban Economy

*Dr. Sampurna Bhuyan, Assistant Professor
Guwahati, Assam*

The Impact of Household Dependency Ratio and Economic Status on Health Insurance Preference of Labourers in an Urban Economy Dr. Sampurna Bhuyan Assistant Professor Girijananda Chowdhury Institute of Management and Technology Guwahati Assam Abstract: Urban economy is significantly different from its rural counterpart in any region or state in respect of the availability of employment opportunity which can either be in organised or unorganised sectors. It is also different in terms of possession of assets, drinking water facility, and sanitation and so on. As both industry and service sector in the urban area is not capable of absorbing the entire labour force, more and more number of workers are seeking low productivity jobs in the unorganized sector which in turn results in low health security and low economic status for the workers and their families. Again owing to changes in lifespan and a delayed marriage resulting childbearing at a later age has put tremendous pressure on middle-aged adults who have to take care of their young children and elderly parents at the same time (Wassel&Cutler, 2016). In this paper we want to explore the effect of economic status and dependency ratio on the preference for health insurance of the labourers in an urban economy and to examine the scope for public policy intervention. The findings suggest that more than sixty percent of labour force in our study area that is Guwahati in Assam, the largest city in the state is under unorganised sector and they are insecure in terms of health care coverage. The paper tries to address the issue from primary source of information and thus may provide a great scope for further policy making. Key Words: Economic Status, Health Insurance, Health Security, Labour Market, Probit Regression, Unorganised Sector

Paper ID-317: Disability Among the Elderly Population and Institutional Support: A Case-Study from Pune City

Dr. Malika B

In case of elderly, the probability of disability due to ill-health is higher. The disabled elderly population is in great need of various types of help for their existence. Hence in this paper, a humble attempt is made to find about the care of the disabled elderly in the institutions meant to care for them by using case-study method. The objectives of this paper are as follows: (1) To present data from the census on disabled population among the elderly at national and state level by type of disability; (2) To explore how the disabled elderly are taken care by institutions such as old age homes in Pune city and to document their experiences in the form of successes and failures; and (3) To make some recommendations having policy implications. According to Census of India 2011, the 60+ population accounted for 8.6 per cent of India's population (103 million). Growing at around 3 per cent annually, the elderly population will rise to 319 million (19 Per cent) in 2050. Seventy-five per cent of the elderly people suffer from some or other chronic disease. Forty per cent of the elderly people have some form of disability. Twenty per cent of them have issues related to mental health. Pune city has many institutions for the care of elderly. This study was conducted by visiting a few institutions in this city. To get insights, interviews of the care-takers, members of the management and the disabled elderly themselves, were conducted in the selected institutions. Later, from the findings of the study, certain recommendations having policy implication are made.

Paper ID-321: Nutritional Status and Related Health Outcomes Among Older Adults in India

Jyoti

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With ever-increasing life expectancy comes an increased risk of health problems and illnesses many of which can be prevented, delayed, or improved by maintaining a healthy diet. Nutrition is a key contributor to maintaining good health and reducing the risk of chronic disease. Eating a balanced diet, together with maintaining a healthy body weight, are critical for maintaining good health in people of all ages, but they are especially important for healthy aging. Nutritional Risk, although studied extensively for reproductive-age women and children, is largely ignored within the health policy landscape for older people. Reduced mobility, sadness, isolation, loneliness, and dietary inadequacies all influence the health of older persons, potentially increasing their health risk. While nutrition has a substantial impact on health and quality of life, malnutrition and its related co-morbidities can increase the likelihood of long-term health problems in older adults, raising socio-economic and healthcare concerns significantly. Against this background, this study intends to estimate the prevalence of malnutrition among older adults, across selected spatial and socio-demographic characteristics. It also studies if malnutrition is a predictor of health outcomes and contributes to enhancing the health risk among older adults in India. Lastly, we identify and profile the food-insecure cohort among older adults. Data from the Longitudinal Ageing Study in India survey is used to carry out the study. Nutritional status is assessed using the Body Mass Index and classified into Underweight, Overweight and Obese. Regression analysis is carried out to study the relationship between nutritional status and health outcomes among older adults. The tests of statistical difference including t-tests, ANOVA, and Chi-2 are used to compare groups wherever suitable. Differences are observed in the prevalence of malnutrition across spatial and socioeconomic characteristics. Also, malnutrition has a significant association with health-related outcomes among older adults.

Paper ID-322: Projection of Total Fertility Rate for All Districts of Uttar Pradesh: A Non-Parametric Approach

Miss. Hricha Rai, Research Scholar

Azamgarh UP

Prof. Brijesh P. Singh

Projections of the demographic indicators at the national & state level have been made for many years in India but for decentralized planning, projections are needed for smaller subsections. So, here in this paper, an attempt has been made to present a simple nonparametric technique to extrapolate the demographic indicator Total Fertility Rate (TFR) at granular levels to a recent future where the projected value of that indicator is available

at the gross level only by applying a data mining technique. The approach has been used to project the total fertility rate of women in the districts of Uttar Pradesh, India for the year 2026. From this study, the TFR of Uttar Pradesh is found to be 1.98 for the year 2026 which is below the replacement level of fertility. But still, there are 28% (20 out of 71 districts) of the districts having TFR above the replacement level of fertility.

Paper ID-324: Assessment of Effectiveness of Targeted Intervention Programme Under National AIDS Control Programme Among Injecting Drug Users Across India

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Background & Objective: High HIV prevalence among Injecting Drug Users (IDUs) remains a cause of concern and are considered as key drivers of concentrated epidemic in India. The present paper aims to assess the effectiveness of the Targeted Intervention (TI) programme on the risk behaviours among IDUs across regions of India. **Methodology:** This paper used the data from the Integrated Biological and Behavioural Surveillance (IBBS) 2014-15 among the IDUs in India. Descriptive statistics and propensity score matching analysis was carried out to understand the effectiveness of the TI programme on the risk behaviours (new needle/syringe used and needle/syringe shared in the last injecting episode) by accounting for the covariates. **Results:** The matched samples estimate i.e., Average treatment effect on treated (ATET) of new needles/syringe used and shared in last injecting episode by those who received needles/syringes from peer educators and Outreach Workers (PE/ORWs) and those who did not receive was 2.8% (CI: 0.05-5.6) increase in the use of new needles/syringes and 6.5% (CI: -9.7- -3.3) decrease in the needles/syringes shared in last injecting episode indicating that IDUs who received new needles/syringes from PE/ORWs are more likely to use new needle/syringe and less likely to share needle/syringes to those who did not receive needles/syringes. The results vary across the different regions of India. **Conclusion:** One of the major aims of National AIDS Control Programme (NACP) in India is the prevention of the new Infections among High-Risk Group population and control the spread of the HIV infections in India. TI programme proves to be effective initiative in the behaviour change among IDUs as substantiated by use of new needles/syringes and decreased sharing of needles/syringes and thereby curtail the spread of HIV infection. Region to region variation is also seen in the effectiveness of TI programme and the programme may further be expanded to accelerate the programme services to prevent HIV/AIDS.

Paper ID-326: Spatial Clustering of Diabesity Among Adolescents and Adults in India: Emerging Public Health Concern Among Adolescents in India

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Type 2 diabetes is on the rise in both adolescents and adults, and it's linked to the obesity epidemic. As obesity and diabetes are strongly linked and share a pathophysiological relationship between two hence the term diabesity. Therefore, the present study aims at unveiling areas/districts at high risk of obesity, diabetes, and diabesity along with those having a high association between the two using spatial analysis. The study utilizes secondary data i.e., NFHS-5 conducted in 2019-21. From spatial analysis, the majority of districts from the northern and southern regions had a proportion of more than 30% of individuals who were overweight/obese. Further, for diabetes, the majority of districts from the western, southern, and eastern regions had proportions suffering from diabetes greater than 5%. Similarly, when diabesity was concerned, the southern region had the highest number of districts having a proportion of more than 5% suffering from any diabesity. Moreover, the district-wise association between diabetes and obesity adjusted for other covariates, an odds ratio of being diabetic was found to be more than 1.5 times in almost half of the districts among obese individuals compared to non-obese individuals all over the country. The study contends that it is essential to prevent these conditions among those living in districts where this association was very high. The present study is pertinent in terms of establishing, diabesity in India as a state/district subject. In the longer run, this association could extend to other NCDs related chronic conditions. Which would then lead to the early start of complicated cardiometabolic illnesses, disrupting an individual's social and economic well-being. As a result, suitable interventions pertaining to high-risk districts in India are required to be taken to prevent the aftermath of such conditions when it is in their early stages.

Paper ID-330: Association of Maternal Height and Stunting Among Under 5 Children in India Using NFHS Data: Suitability of WHO Growth Standard in Indian States.

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Association of Maternal Height and Stunting among under 5 children in India using NFHS Data: Suitability of WHO Growth Standard in Indian States. Association between maternal height and stunting is well established in anthropometric studies. This study highlights the suitability of WHO Growth Standard in Indian states using maternal height from 2005-21 using NFHS 3,4 and 5 data. Maternal Height is chosen as an independent variable with the categorization; Very Short (<145), Short (145-149.9), Average (150-154.9), Tall (155-159.9), Very Tall (≥160). Stunting was defined as having a HAZ less than -2.0; children with HAZ -2.0 are considered non-stunted. Binary Logistic Regression was used to show the association between maternal height and stunting. State-wise average height of the mothers was calculated and compared with WHO MGRS Sample across the last three rounds of NFHS. Each cm increase in maternal height is associated with 1% decrease in odds of being stunted. Maternal Height is negatively associated with stunting. In comparison to mother who has Very Short height, odds of child being stunted is significantly 33% less for Short, 52% less for Average, 65 % less for Tall, and 72% less for Very Tall mother. The average height of Indian mothers is around 151.5 cm from 2005 to 2021. It was observed that Meghalayan Mothers have the shortest height among all the Indian states i.e. 148.7 cm, which is around 8 cm shorter than WHO MGRS Indian average and 12 cm shorter than global average. It is important to note that secular change in average height in India is around 0.2-0.5 cm increase per decade in India. In this situation, either we are overestimating the stunting prevalence in some of the Indian states or it will take decades to lower the stunting prevalence in those states.

Paper ID-333: Socio-Economic Status Measurement Scale for Rural Population: A Caste Wise Analysis

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Socio-economic status is an important determinate of the level of knowledge, skill, health status and income condition which means for their living. It is a combination of social and economic variable and serves to understand the way people survive and making a living in poor urban and rural area of a country. The present study is purposed to develop a new SES scales to measure the socio-economic status of rural households. Further, this scale is applied to analyse the socio-economic status of different groups of the population living Eastern rural Uttar Pradesh. There are basically five broad components of variables were considered for the computation of SES of a household. These five components have further various variables. The selection of variables and appropriate weights for each variable were decided on the basis of literature reviews, group discussion with Expert's researcher experience etc. The socio-economic status scores have been calculated for each household and five equal intervals of SES score have been constructed such as 0-20, 20-40, 40-60, 60-80 and 80-100. The minimum SES score is 0 and maximum SES score 100. On the basis of the results, we can conclude that there is wide variation in SES score among different caste groups and the relative position of different caste groups are in expected line (maximum score of upper caste and minimum for SC/ST followed by lower caste group).

Paper ID-335: Gestational Diabetes: Prevalence and its Associated Risk Factors Among Indian Women

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Gestational diabetes mellitus (GDM) is a type of diabetes that occurs with onset or first recognition during pregnancy. GDM not only influences immediate maternal and neonatal outcomes but also increases the risk of future type 2 diabetes in both mother and infant. Thus, it is essential to detect and treat it from the inception when mothers suffer from diabetes during pregnancy. This study analyzed data from the fourth round (2015-2016) and the fifth round (2019-2020) of the National Family Health Survey. Percentage prevalence is obtained to get the estimate of GDM prevalence in India and across the states. Relative prevalence is obtained to find which states are contributing more to the overall prevalence of GDM. Further, Poisson regression analysis was conducted to examine the risk factors for GDM among pregnant women. The State Goa (west) and the Union territory Lakshadweep (South) show the highest prevalence of GDM (4.88% & 4.65%) in India. In contrast, Andaman and Nicobar, Chandigarh, Dadra & Nagar Haveli and Daman Diu, Manipur, and Sikkim have zero per cent prevalence of GDM. The population distribution of women with GDM is concentrated in the states of Jammu & Kashmir, Uttar Pradesh, Meghalaya, and Karnataka. There has been an increase in the prevalence of GDM from 2015-16 to 2019-21 in almost all the states of India except Andaman and Arunachal Pradesh, Bihar, Gujarat, Kerala, Odisha, Tamil Nadu, West Bengal and Telangana. The prevalence has also increased across all the age-group (except 15-19 years, where it declined), religious groups, caste groups and Type of place of

residence. Age group, Religion, Body mass Index, thyroid disorder and heart disease are found to be the risk factors for GDM among women in India. Thus, it is essential to curb this disease from its inception and save a generation ahead.

Paper ID-336: Uptake of Post-Abortion Contraceptive Method in India: Evidence from National Family Health Survey 5

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Putting an end to the silent pandemic of unsafe abortion is a major public health concern globally. Adoption of post-abortion contraception is documented as a significant contributor to reduce the number of unintended pregnancies and number of induced abortions. This study aimed at investigating the post abortion contraceptive behavior of Indian women exploring the determinants of post-abortion contraceptive uptake. Retrospective calendar data for 6,862 women aged 15-49 years from fifth round of National Family Health Survey (2019-2021) was used for the study. Multinomial logistic regression method was used to model the determinant factors to post-abortion contraceptive uptake. 72.6% women reported adopting no method of contraception after the abortion procedure. 14% women preferred adopting short term modern methods. Women in early reproductive age group which is the most vulnerable group in experiencing unintended pregnancies are less likely to adopt any contraceptive method after abortion. Uptake of post abortion contraception is quite low in India. Effort should be taken in the direction of bringing awareness through provision of targeted contraceptive counselling after abortion. Keywords: Abortion, Counselling, India, Post-abortion contraception.

Paper ID-339: Rural-Urban Gaps in Neonatal Mortality in India

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Background: Globally, child mortality has been reducing substantially. However, it has recently concentrated on the neonatal period constituting 62% of all under-five mortality. There are considerable rural-urban neonatal mortality differentials at the national and state levels. With this background, this paper aims to identify the existing gap in rural-urban neonatal mortality and its associated factors in India.

Methodology: Using NFHS-5 data, binary logistic regression and Fairlie's decomposition technique was applied to understand the factors associated with neonatal mortality and the relative contribution of different co-variates to the rural-urban gap in neonatal mortality.

Results: Rural Indians (27.4% live births) still contribute 1.5 times more neonatal deaths than urban counterparts (18% live births). The rural-urban gap is maximum in Chhattisgarh (17.3%), followed by Manipur (17%), Jharkhand (12.7%), Tripura (12.2%), Uttar Pradesh (10.1%), and it is negative in Mizoram (-6%), Uttarakhand (-5.6%), Arunachal Pradesh (-5.6%) and West Bengal (-0.6%). The result shows there is no disadvantage for the rural children due to their place of residence if they belong to economically well-off household or their mothers are educated. After controlling the wealth index, the place of residence becomes an insignificant factor in neonatal mortality. Children born to mothers with the richest wealth quintile [OR:0.45, CI:0.35,0.60] and highest educational qualifications [OR:0.69, CI:0.54,0.89] were less likely to die in the first month of birth than those born to the poorer mothers. It is the wealth index rather than the place of residence that determines neonatal mortality. Economic (59.13% contribution) and educational differential (19.45% contribution) are the main reasons for this gap.

Conclusions: The existing rural-urban gap in neonatal mortality suggests that social and health policies need to be reached by rural children from poor families and uneducated mothers. Moreover, there should also be an effort to strengthen the rural economy and the quality of education.

Paper ID-341: Integrated Child Development Service (ICDS) Coverage Among Severely Acute Malnourished (SAM) Children in India: A Multilevel Analysis Based on National Family Health Survey 5

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Severe acute malnutrition (SAM) is fatal for children, and those who survive are maimed both intellectually and physically. The last three National Family Health Survey in India shows an increase in the prevalence of SAM among under-five children. Given the specific mandates under ICDS (Integrated Child Development Service) for SAM children, it is important to validate the coverage efficiency of ICDS on SAM children. Therefore, this is an attempt at examining the possible association between the coverage efficiency of ICDS on SAM children. This study also tries to find out the determinants of ICDS service utilization among SAM children. The study uses data from the National Family Health Survey 5. Descriptive statistics was used to estimate the SAM coverage under ICDS. Multilevel Logistic Regression was used to identify the determinants of ICDS service utilization among SAM children. The burden of SAM is more among older children (3+ age). Coverage of ICDS was more among younger children and among the poorest households in the rural areas. Results from multilevel logistic regression showed that age had a significant relationship with the outcome variable. SAM children living in the rural areas had a significantly higher odds of being covered under ICDS service (OR 1.57; CI: (1.35, 1.82)) than their urban counterparts. Pregnant and lactating mothers who received ICDS services were significant determinants of SAM coverage under ICDS. There is no evidence that ICDS is more efficient in identifying and covering SAM children than other non-SAM children. Despite special provisioning in place for SAM children, coverage of different ICDS services was similar to that of non-SAM children, and were in fact lower than non-SAM children for some categories. The study suggests that improving coverage of ICDS services among pregnant and lactating mothers would increase the coverage of ICDS services among SAM children.

Paper ID-342: Estimate of India Excess Mortality in India

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The estimates by The Lancet places India at first having the highest number of cumulative excess deaths due to COVID-19 at the level of 41 lakh based on vital registration system data from 12 States. The estimates by WHO also comes around 47 lakhs for the period between January 1, 2020 and December 31, 2021. Indian government, however, has posed outright objection towards the use of mathematical models in the estimation of excess mortality by the WHO, when authentic data is available in the country. It is in this light, we have tried to provide empirical estimate of the excess mortality attributed to COVID-19 during the period between January 1, 2020 to December 31, 2020 by using information from multiple official data sources. We have used number of registered deaths in the year 2019 and 2020 from CRS, population projections for the years 2016 and 2021 by the Registrar General of India (RGI), crude death rate (CDR) estimates for 2019 and 2020 from Sample Registration System (SRS). As per our estimate, India has witnessed an excess mortality of 0.5 death per thousand population during the first wave of pandemic (CDR of 6.0 in 2019 to 6.5 in 2020). Our computations estimate the excess deaths in India during 2020 with respect to 2019 as 7 lakh, with Tamil Nadu, Bihar, Maharashtra, Karnataka, Gujarat and Andhra Pradesh having the highest number of excess deaths, ranging between 1 and 2 lakh. During the same year, India's official tally of COVID-19 deaths was 1.5 lakh, almost 4.7 times less than our estimate of excess mortality.

Paper ID-19: An Assessment on Association Between Major Chronic Illness and Functional Limitations Among Older Adults in Kerala

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Chronic diseases among older adults have an important influence on their functional limitations. Understanding the role of chronic morbidities in functional disability among them is pertinent for policies and programmes aimed at their well-being management of chronic morbidities. This study assesses the relation between major chronic diseases and the functional limitations among the older adults in Kerala. Data were taken from the Longitudinal Ageing Study in India (LASI) survey conducted in the States of India in 2017-18. Considered only the sample of Kerala state has been used for the bivariate and multivariate analysis. 52.1 percentage of the elderly have Hypertension, 35.5 percent have Diabetes, 27.8 percent have chronic Bone/Joint and 12.2 have suffering Heart disease. 78.3 percentage of the elderly have suffering at least one chronic morbidity. 24.5

percent elderly have difficult any one functional limitation-ADL and 41.5 percent have difficult any one functional limitation-IADL. Multivariate analysis collaborated the bivariate findings that older adults with major chronic diseases are significantly more likely to have the ADL and IADL limitation. Periodic assessment of the health status of the elderly and provision of required preventive as well as curative measure for a healthy older population should be a policy priority.

Paper ID-343: Awareness, Treatment, And Control of Hypertension Among Kerala Women Aged 25 Years and Over

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Awareness, treatment, and control of hypertension among Kerala women aged 25 years and over. Hypertension is a leading public health issue. It is a significant contributor to cardiovascular morbidity and mortality. Adequate control of hypertension is important to prevent these adverse conditions. In Kerala, very few studies examined relevant socioeconomic factors relevant to hypertension. So through this study we aimed to shed light on the prevalence, awareness, treatment, and control and associated factors of hypertension among Kerala women. The main objective was to estimate the rates of awareness, treatment and control of hypertension among women age 25 and over and to assess the differences in these rates across socio-demographic groups, their dietary pattern and behavioural risks. We used a nationally representative survey (NFHS 5) data of 8088 women aged 25-49 years. We distinguished those who (i) reported have hypertension' (aware'); (ii) reported taking medication (treated'); and (iii) had measured systolic BP <140 and diastolic BP < 90 (controlled'). We also analysed the effect of dietary patterns adjusted by socio economic and demographic patterns on the prevalence of hypertension using crude and adjusted odds ratios. This study has shown that hypertension is highly prevalent among rural women and the disease is uncontrolled among the rural women than their counterparts. Hypertension prevalence was high, and Awareness, Treatment and Control were low among middle aged women than younger adults. Logistic regression models revealed that BMI > 25 kg/m², dietary pattern, history of diabetes were significant factors associated with hypertension. Hypertension is adequately controlled only among young women. Kerala needs more studies at the community level and gender specific to understand socioeconomic factors that determine uncontrolled hypertension in Kerala. These observations re-emphasize the need for hypertension awareness programs targeting the general public especially middle-aged women who are more prone to uncontrolled hypertension.

Paper ID-344: Rural-Urban Differences in Self-Rated Health Among Elderly: Mediating Role of Marital Status and Living Arrangements

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Globally, the ageing populations in less developed nation is increasing more rapidly than developed nations. As a result, by 2050, less developed regions will be home to roughly 80% of the world's older population. The ageing population in the Asia-Pacific region has been growing quickly and is expected to reach 1.3 billion people in 2050, according to regional patterns of population ageing. The rural-urban gap in socio-economic and morbidity status among the elderly is prevalent in India. These disparities may impact the levels and factors of self-rated health (SRH). The objective of the study is to compare the levels and determinants of SRH between rural and urban areas by considering the moderating effects of marital status and living arrangements. The present study used data from the Longitudinal Ageing Study in India (LASI) wave 1 (2017-18). Total sample of 30,633 older adults aged 60 years and above were selected for the study. Descriptive statistics, bivariate chi-square test, interaction effect of living arrangements and marital status and logistic estimation were applied to accomplish the study objectives. The prevalence of poor SRH was found 7% higher in rural areas compared to urban counterparts. A substantial rural-urban disparity in the patterns of poor-SRH also observed. Interaction effect of marital status and living arrangement on self-rated health, suggested that older adults who were currently unmarried and living alone were 38% more likely to report poor SRH than those who were currently married and co-residing in rural areas respectively. The present study found that elderly with unmarried and living alone status were more vulnerable in India, particularly in rural setting. The present study suggests the importance of reinforcing the concepts of care and support, as well as boosting the ability of families by providing incentives to minimize family members' financial and physical poverty.

Paper ID-345: Medical Attainment and Hospitalization Before Death Among Indian Tribes: An Evidences from Two Round of National Sample Survey

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India is the second-largest tribal populated country in the world where more than 100 million tribes are living across the country, spread in different geographical terrain and over all the region of the country. The latest global study evidenced poor health and social outcomes for indigenous/tribal populations compared to the non-tribal. Tribes have low level of health status, poor healthcare seeking behavior and less accessibility of healthcare services. This study found the poor medical attainment and hospitalization before death among indigenous/tribal populations compared to the non-tribal group. The medical attain before death was 57% in 2004 among tribes but is has been increased up to 70% in 2018. Another side, only 19% tribal people could get hospitalized before death during 2004 which was very low compared to Non-ST population. But it was increased almost thrice (64%) in 2018 than 2004. The hospitalization was very less especially among the elderly peoples, which is lower than the non-STs/SCs group in India. Moreover, study found many associated factor behind the low level of medical attainment and hospitalization among tribes such as transport problem, financial constrain and hospital care was not considered satisfactory etc. This paper focused on status of medical attention, reason for not received medical and hospitalization before death in India special focuses on tribes. To fulfill the objectives, the two round (60th and 75th round) of National Sample Survey (NSS) data is used which is a nationally representative on social consumption on health (SCH) which were collected in 2004 and 2018 respectively. Descriptive statistics and logistic regression were used to examine the medical attention and hospitalization before death among tribes in India. Key Words: Tribes, India, Death, Medical attention, Hospitalization and NSS

Paper ID-348: Prevalence, Socio-Demographic Determinants, And Self-Reported Reasons for Hysterectomy and Choice of Hospitalization in India

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Background There is limited evidence of hysterectomy in India because of a lack of data in large-scale, nationally representative health surveys. The current study evaluates the prevalence, determinants, and choice of hospitalization (Public vs. Private) for conducting hysterectomy in India among women aged 15-49 years in 29 states and seven union territories (UTs) based on the new large-scale population-based nationally representative dataset (NFHS 5).

Methods Cross-tabulations and percentage distributions were utilized to analyse the prevalence of hysterectomy and the choice of hospitalization (public vs. private) across different socioeconomic backgrounds and reasons for undergoing hysterectomy. A multivariate binary logistic regression model was also used to find statistically significant determinants of hysterectomy.

Results In India as a whole, 3.3 % of women aged 15-49 years had undergone a hysterectomy. The southern region stands out for the considerably higher prevalence of hysterectomy; particularly in the states of Andhra Pradesh (8.7%) and Telangana (8.2 %), the prevalence was very high followed by Bihar (6 %) & Gujrat (4 %). A noticeable fact that emerged was that the majority of the hysterectomies were performed in the private sector (69.6 %) in India. Age, place of residence, religion, caste, level of education, geographic region, wealth quintiles, parity, age at first cohabitation of women were found to be the socio-demographic determinants statistically associated with hysterectomy in India. The likelihood of hysterectomy was higher among women living in rural areas (AOR: 1.3, CI: 1.23-1.35), in the richest wealth quintile (AOR 2.6; CI 2.37-2.76) and in the southern region (AOR 1.6; CI 1.47-1.66). The reasons frequently reported for hysterectomy were excessive menstrual bleeding/pain, followed by fibroids/cysts.

Conclusion More research is needed therefore to unravel the complex dynamics of hysterectomy in India (and elsewhere) which could be used to help women make more informed choices and in turn advance their reproductive health and rights. Keywords Hysterectomy, Prevalence, Determinants, Public, Private, India

Paper ID-361: Elderly happiness, Expectation and Indian perspective: An assessment of utility basket approach based on Longitudinal Ageing Study of India ,2017-19

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This paper is an attempt to establish utility-based preference to ensure the quality of life among the elderly. It also differentiates the utility-based quality of care among two major age groups; Early ageing (60-74 years), and late ageing (75 years and above) Method-This paper is completely based on a secondary data source based on the Longitudinal Ageing Study of India. It consists of all the behavioural choices related to living conditions, happiness in life, health status, social affiliation and detailed information related to the quality of life. The utility index is a method that has been used to assess and investigate the quality of life among the elderly in Indian states. Result- With the complete study of the population age 60 and above; Mizoram (1), Kerala (0.92) Chandigarh (0.81), goa (0.655), and Puducherry (0.651) have a high quality of life. While Arunachala Pradesh (0) Telangana (0.161) Jammu and Kashmir (0.209), Rajasthan (0.238) and Bihar (0.253) are low-performing states. Besides that two different age level has a different picture. In the case of early ageing, some of the northeast states including Kerala and Karnataka have good performance. Similarly in late ageing (age 75 years and above) again these states are doing well with a little deviation of the score. Conclusion-Utility desire and satisfaction from the commodity are different for the different age groups. Happiness is completely subjective in nature and varies from individual to individual, while the utility is a way to assess the quality of care by some methods. In ageing life majorly 15 items (such as; food availability, living arrangement, spousal support, social connectedness, fear of crime etc.) have a significant role in good quality of life. This study definitely will help the nation to have a good policy to achieve healthy ageing. Keywords Quality of care, Elderly, Utility, Happiness.

Paper ID-368: Domestic Violence Among Female Who Migrated for Marriage from Other State: A Study Based on A Primary Survey in Jind District of Haryana

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Among the Indian states, Haryana has an adverse sex ratio against females. A key effect of the skewed sex ratio is 'male marriage squeezes', implying a shortage of brides and, therefore, an excess of bachelors in society. As a consequence, men of marriageable age are facing a crisis in finding local brides. Therefore, these men are bringing brides from north-western and eastern states. The primary objective of the research is to study domestic violence among married migrant women. This study is based on primary data. Fieldwork has been done in Jind district of Haryana from mid-June to mid Sept 2022. A sample of 150 brides who are married in Haryana from other states in the study area participated in the survey. We used snowball and purposive sampling to identify respondents at the village level. 10 key informants and 15 In-Depth interviews were conducted to get an understanding of the issues. Bivariate analysis has been done to see the demographic characteristics of the participants. Haryana has a patriarchal, patrilineal and patrilocal society that leads to more domestic violence in the state compared to others. From this study, we found that these females coming for married are mainly from Uttar Pradesh, West Bengal, Assam, Bihar, and Jharkhand. When we see the level of violence in the marriage of migrant women it's of extreme level. They have experienced through violence by their husbands as well as by other family members. They are also sexually exploited by their husbands and their brothers. Most of the migrant females married to drunkard men. Those women who are educated and still in contact with parental family are experiencing less violence due to parental support. They are helpless in a different socio-cultural state. There is a need for the legal protection of these brides so that they can live happier life. Keywords: Women, Violence, Haryana, Sex ratio, marriage migrant

Paper ID-369: Growth Estimation of Under-Five Children Using Statistical Models in Central Region of India

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Background and Aims: To determine the suitability of 11 basic statistical models for estimating child-growth of under-five children and to bring-forth estimated growth curves for mean height & mean weight by their selected birth-weight categories for Central Region of India.

Methods: The study used fourth round of National Family Health Survey-4 (NFHS-4) data of India, consisting of 75,645 under-five children, belonging to 3 Indian States – Chhattisgarh, Madhya Pradesh & Uttar Pradesh. The children of the Region were first divided into 4 sub categories according to their birth-weight: (i) < 2000gm, (ii) 2000-2499 gm, (iii) 2500-2999 gm (iv) 3000+gm, growth curve for mean height and mean weight were estimated for two sexes.

Results: The significant association of 7 socio-demographic factors studied, namely “age & sex of child, birth-order, BMI, mother’s highest level of education, place of residence and wealth index. Further, Cubic Model and Power Model, demonstrated best-fit to height & weight data of under-five children, belonging to different birth-weight categories, for estimating growth of boys & girls separately. These models enabled us to estimate mean height and mean weight, with 95 % CI, for boys and girls separately by different birth-weight categories.

Conclusions: Study concluded that 7 socio-demographic factors were significantly associated with birth-weight. Further, Cubic Model and Power Model were most suitable for estimating child growth in terms of mean height & mean weight for boys and girls -considering specific birth-weight categories.

Paper ID-374: Fertility and Family Planning in India, 1992-2021: Evidence from National Family Health Survey

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We analyse the relationship between fertility and family planning in India based on the inter-state/Union Territory variation in total fertility rate and contraceptive prevalence using the data from different rounds of the National Family Health Survey. The paper observes that fertility family planning relationship in the country based on different rounds of the National Family Health Survey is essentially different and there is a regression discontinuity between the first three rounds and the last two rounds of the survey as regards the fertility reduction effect of family planning is concerned. Evidence from the first three rounds of the survey suggests that 10 per cent point increase in contraceptive prevalence accounted for a decrease of 0.43 points in TFR whereas evidence from the last two rounds of NFHS suggests that 10 per cent point increase in contraceptive prevalence was associated with a decrease of 0.13 points in TFR. The paper also discusses policy and programme implications of the weakening of fertility and family planning relationship in the country.

Paper ID-375: Our Poverty Has No Shame; The Stomach Has No Shame, So We Migrate Seasonally": Pregnant Women Sugarcane Cutters from Maharashtra, India

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Pune*

In Maharashtra, the seasonal migration of sugarcane cutters and their involvement in sugarcane cutting is always a concern for all. Work conditions, work burden, and labor exploitation of sugarcane cutters are part of timely discussions. After migration, these workers have no security, housing, sanitation, or drinking water facility in the sugar belt. For women, there is no social and personal security. Women workers have to bathe, defecate openly, and drink untreated water. Even pregnant and lactating women are not an exception in facing adversity at the sugar belt. The present article reflects on the questions like why even pregnant and lactating women migrate in distress. Do pregnant/lactating women work for the sugar belt without any hardships? People at large relate the phenomenon of migration to human development or economic development. In the same way, one can

see internal migration or seasonal migration. Yet, based on the analysis, it is argued that we cannot connect the migration of poor, unskilled, illiterate, lower caste, landless, resourceless, vulnerable pregnant and lactating mothers to human development. Instead of economic growth or human development, we can relate their migration with survival at large. Keywords: Women sugarcane cutters, Seasonal migration, Migration of vulnerable people, Sugar belt, Reasons for migration

Paper ID-376: Patterns and Trends in Poverty Dimensions in Bihar, The Poorest State of India, 2005-06 to 2019-20: Challenges Ahead

Dr. Jayanta Kumar Basu, Kolkata

Background: The removal of nation-wide poverty has consistently been one of the main objectives of Indian policy. According to Multi-Dimensional Poverty Index (MPI), India with a poverty index of 0.296 and poverty ratio of 46.6 per cent is among 50 poor nations of the world. Bihar is amongst the poorest states in India, with poverty incidence of 42.6 per cent. This paper attempts to analyse trends and patterns of MPI in Bihar over last 15 years to understand the challenges ahead.

Objectives: To calculate MPI and Headcount Ratio for Bihar from NFHS-3 (2005-06), NFHS-4 (2015-16) and NFHS-5 (2019-21) and suggest the dimension-wise challenges ahead. Method: For computing the MPI and its components the STATA do-file developed by Alkire and Jahan (2018) has been used with proper modification, for 12 indicators, suitable for the NFHS Bihar data.

Results: The multidimensionally poor people in Bihar reduced sharply by more than three times (from 82.58% to 24.87%) during the last 15 years. In 2005-06, around 8 out of 10 people were MPI poor, which came down to only around 2 out of 10 people in 2019-20. However, in this period percent contribution of MPI in nutrition (20.9 percent to 27.8 percent) and school dropout (12.8 percent to 24.3 percent) indicators increased sharply.

Conclusion: Various poverty alleviation programmes have not been effective in reduction of poverty up to desired level in Bihar. Hence, there is an urgent need to have holistic approach for improving various social and economic dimensions (nutrition status and school dropout rate in particular) of the state for faster reduction in poverty. Further, the analysis suggests that district level decentralized plan is needed for poverty alleviation rather than a generalized state level approach as has been adopted so far.

Paper ID-378: Evaluation of HMIS Data Quality in Haryana

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High quality of data and quality assessment of HMIS data is extremely essential for public health intervention, key program changes & further strengthening of the national health plans. In this context, this desk research assesses the HMIS data quality for the state of Haryana with respect to four key dimensions: Completeness, Accuracy/ Statistical Outlier & Data Validation, Internal consistency and External consistency. This study uses the World Health Organization Data Quality Framework to calculate the dimensions of data quality. Evaluation of the data quality has been done using the HMIS portal data from 2015-16 to 2019-20. External consistency approach was calculated by comparing with household survey NFHS-4 & NFHS-5 estimates, result shows more than 33% discrepancy in the intake of IFA pills/tablets by the pregnant women for 180 days. Overall, analysis shows that Haryana performs better with regards to data reporting when it compares with the baseline periods. However, increasing trends in both outliers & validation errors in HMIS data have been observed in the state of Haryana. Thus, the study asserts that state has definite scope of improvement with respect to validation errors & outliers in HMIS data across all districts. Further, children immunization (BCG & OPV dose) also needs to be addressed seriously with regards to accuracy. The findings suggest that state/ district must engage in regular training, monitoring & evaluation at the concerned levels in order to ensure the data quality.

**Paper ID-380: Influence of Maternal Height on Birth-Weight, Baby Size and Gestational-Age in India:
Evidence from National Family Health Survey, 2015-16**

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Background In order to achieve the target set by Sustainable Development Goal (SDG), 2015-30 of infant and child mortality levels by 2030, long-term good health and development of the new born babies. An accelerated effort is still required in reducing the occurrence of low birth-weight, small baby-size and early gestational-age which is also proximate determinants of child-mortality and morbidity. Therefore, in this paper an attempt has been made to see the impact of mother's related factors, health care and some other related covariates on birth-weight, size of the child and gestational age with special reference to maternal height in India.

Methods For this study, data is drawn from the fourth round of the National Family Health Survey (NFHS-4), conducted in 2015-16. NFHS collect information on fertility, family planning, maternal and child healthcare, childhood immunization, infant and child mortality, nutrition, HIV/ AIDS-related knowledge and attitudes, women empowerment, domestic violence etc. Along with this information, they take data on birth weight and size of the child. The statistical analysis shows significant role of maternal height on LBW, size of baby and gestation period.

Results On the basis of analysis of nationally representative sample data for India, we have found that low birth-weight, small baby-size and early gestational age is highly associated with mother's related factors, health care-factors and some other covariates for India. Maternal height played a significant role to explain anthropometric measures of child, as the height of women decreases the relative-risk of having low birth-weight, small baby-size and early gestational birth getting increases and it was highest for 145cm-149.9 cm and <145 cm women in India.

Paper ID-386: Decomposing the Gap in Contraceptive Use Among Female Adolescents and Young Women Aged 15-24 In India: An Analysis of Appended Datasets Of NFHS-4 & 5

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The present study effectively aims to address the reproductive health needs of the young female population by assessing the predictors of contraceptive use and decomposing the inequality in its use among female adolescents aged 15-24 in India, using the appended datasets (IV and V rounds) of the National Family Health Survey. Descriptive statistics and chi-square tests were used. A Binary Logistic regression model was executed to investigate the predictors of current contraceptive use among female adolescents. A decomposition technique called Fairlie decomposition was employed to identify the primary causes of the difference in the prevalence of contraceptive use between the two survey periods (NFHS-4 & 5). The results showed that almost 96 per cent of young women knew about contraception. However, this knowledge of contraception did not articulate into use, as only 12 per cent of the young women in age 15-24 used contraception, majorly among younger ages (15-19). Low socioeconomic background acted as an obstacle to contraceptive use among adolescents. Uneducated women, women from the poorest strata of the society and belonging to disadvantaged social groups like the OBCs used less contraception due to their socioeconomic profile. It is apparent from the present study that contraceptive use and planned pregnancy were positively associated. Decomposition analysis results revealed that factors like decision-making of contraception, age, interaction with family planning worker, the intention of last pregnancy, place of residence and age at first sex contributed to the gap in contraceptive use from NFHS-4 to 5.

Paper ID-391: Recent Changes in Multidimensional Poverty in India: A Study of Geographical Patterns

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Introduction: Multidimensional poverty is a critical development agenda identified at the global and national levels. In the recent Report on Global Multidimensional Poverty (2022), India is home to 230 million global poor. However, Global estimation of multidimensional poverty can under-estimate poverty for a diverse country like India with wide-spread deprivations. Thus, this study focuses on identifying the level of multidimensional poverty in two periods to capture the change over time at the national level and across the states and UTs.

Methodology: This study used two rounds of the National Family and Health Survey (NFHS); NFHS-4 conducted in 2015-16 and NFHS-5 conducted in 2019-21. NFHS is a national-level cross-sectional survey providing demographic, socio-economic, and health-related information at household and individual levels. The

multidimensional poverty has been estimated using educational, health, and standard of living information across the states/UTs considered at individual level. The estimates are based on Alkire-Foster (AF) method of multidimensional poverty measurement. The results have been presented using incidence or headcount ratio (H), intensity (A), and the Multidimensional Poverty Index (MPI).

Key Findings: The proportion of multidimensionally-poor to the total population had decreased by around 14% from 2015-16 to 2019-21. Further, multidimensional poverty level at the 10% cut-off showed 90% (NFHS-4) and 83% (NFHS-5) multidimensional poor, and at 30% cut-off decreased to 36% in NFHS-4 and 21% in NFHS-5. In both the rounds, the contribution of health-deprivation was highest and education was lowest. The level of multidimensional poverty was highest in Bihar (NFHS-4:66%; NFHS-5:47%), while in NFHS-4 the lowest level was in Ladakh (2%), while, in NFHS-5 it was Lakshadweep (1%).

Conclusion: This study contributes in identifying vulnerable geographical units regarding multidimensional poverty. Harmonized efforts at national, state, and local level at improving the conditions of education, health, and standard of living will help in achieving Sustainable Development Goals.

Paper ID-392: Improvement in Quality of Health Management Information System (HMIS) Data for Maternal and Child Health Care

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The introduction of the National Rural Health Mission (NRHM), later known as the Nation Health Mission (NHM), has increased the demand for micro-level data on population and health for use in monitoring, planning and programme implementation. It is known that the quality of healthcare data impacts every decision made along the patient-care continuum. Therefore, the present study attempted to assess the quality of Health Management Information System (HMIS) data from 2017 to 2020 using the data obtained from the HMIS portal of the Ministry of Health and family welfare. For quality check missing data components and validity analysis has been done; The result of the analysis shows that over the period of time quality of HMIS data has been improved though in several states, data inconsistency across the three financial years, as well as over-reporting in key indicators of MCH, has been observed. From a policy point of view, Government should motivate researchers and policymakers to utilize this data so that confidence in the usability of HMIS data can be built like other national-level surveys such as NFHS..

Paper ID-395: Domestic Violence Against Women: A Gender-Based Violence in Himachal Pradesh

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Domestic violence is violence committed by someone in the victim's domestic circle. Gender-Based violence refers to harmful acts directed at an individual based on their gender. It is rooted in gender inequality, the abuse of power and harmful norms. The purpose of this study is to determine why women are the most common domestic violence victims in Himachal Pradesh Children behavior in the families where there is violence may suffer and what are Role of the health sector to preventing and responding to violence against women in Himachal Pradesh. With a literature review, this study employs a descriptive qualitative methodology to find out reasons and causes behinds this violence. As a result of this study, it is still believed that men and women have an unequal relationship and that males are superior to women in all aspects, leaving the wife or woman to handle primarily domestic issues. Another factor that leads to violence is the wife's reliance on her husband for financial support so that the husband uses force in an effort to demonstrate his manhood and so that the wife will no longer oppose his wishes. A subordinate view that is backed by sociopolitical dynamics anchored in a hierarchical, submissive level that justifies violence as a means of control is another factor contributing to this oppression. The study's conclusion is that domestic violence is a form of gender-based violence because it originated from an imbalance in the structure of power relations between men and women and was later defended by state law and religious doctrine as a result of readings of religious texts that were gender-biased.

Paper ID-396: Covid- 19 And Women Associated with Bamboo Craft in Assam

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Covid -19 pandemic had adverse impact on different sectors of the economy. The handicraft sector was no exception. The handicraft sector was worst hit by the pandemic and its subsequent nationwide lockdown. This paper tries to study the effect of Covid-19 pandemic on the traditional handicraft industry of Assam with special reference to the bamboo making craft where the participation of women folk is considered significant. The study was undertaken by collecting primary data through field survey in Nalbari district of Assam. A cross study was conducted in the pre and first phase of the Covid period in the year 2020. The study finds that though bamboo craft provide employment opportunities to a significant proportion rural population in the district, the economic conditions of most of the unit is dissatisfactory as is reflected by GVA (Gross Value Addition). The pandemic had worst affect on the women folk who were solely associated with the craft for their livelihood as contrast to their male counterpart who were also engaged agriculture and other allied activities. Most of the units faced shortages of raw materials and capital, reduced demand in the market, restricted transportation during the pandemic period. Though government of India had announced financial support to the Micro, Small and Medium Enterprises (MSME) in the form of collateral loan up to Rs. 3 lakh crore, it was not of much help to the manufacturing units as they fear that reduced domestic market will make it difficult for them to sell their product and will eventually push them into debt trap making their condition even worse than before.

Paper ID-399: Internal Migration Among Religious and Social Groups in India: Evidence from Census and National Sample Survey

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Paper examines the migration level and pattern among religious and social groups - Schedule Caste, Schedule Tribes and Others Social groups in India. Census migration data from 2001 and 2011 and National Sample Survey of 1983 to 2020-21 are used. The migration rate was observed higher among SC's and ST's than others. For the first time in 2001 and 2011 census, some information on migration of SC's and ST's are provided which indicates that around one forth per cent had reported to move within the state. Out of which about two third of SC's and one-fifth of ST's moved from rural to rural areas. The urban ward movement from rural as well as urban areas was much less among SC's and ST's. The proportion SC's and ST's movement in short distance migration was more pronounced than others groups. The NSS data from 1983 to 2020-21 are analyzed in detail and show changing pattern of migration within social groups and religious groups in terms of distance moved. Recent migration data of 2020-21 indicates impact of COVID-19 on changing pattern of migration in the country. NSS data shows religious difference in migration level and pattern over the time period. Among Hindu migration rate was observed higher than Muslim community. Similarly, other social groups show higher migration rate than other backward class followed by SC's and ST's.

Paper ID-401: Determinants and Challenges of Gulf Return Migration in Malappuram District, Kerala

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A vast majority of India's total emigration is to the Gulf countries, of whom Kerala's temporary migrants comprised 60 percent in 2018 (Rajan and Zachariah 2019). Return migration is more among the less educated, low skilled, temporary or failure emigrants, which is on the rise in the State in recent years. However, research works are scant on the issue and their challenges of re-integration into the home economy. In this context, the present paper attempts to explore the socio-economic characteristics of Kerala Gulf returnees, determinants of return migration, their work-related and other causes of return, and their post-return re-integration issues and economic challenges. The study is based on primary data collected from 300 Gulf returnee and non-returnee migrants each in Malappuram district, during February to June 2017. Percentages, ratios, averages, Lorenz curve, Gini coefficient, Garret ranking technique and logit regression have been used to study the objectives. The results showed that majority of the returnee migrants possessed poor human capital endowments and economic status. The regression result revealed that being a Muslim, better education, good health, and higher income and remittances significantly discouraged return migration, whereas increased land acquisition, higher

work experience and living in joint family significantly encouraged it. The main causes of return were double expenditure, work place discriminations, long working hours, hazardous and risky work conditions, and lack of social security schemes. The other reasons included health problems, to rejoin family, low income and retirement. Re-integration into the economy through employment was not very helpful, due to low skill acquirement. Loss of remittance affected household living standard, significantly widening post-return income inequality. A negligible percentage of the returnees receive Government pension or other benefits. The study suggests Government support to help the returnees cope up with employment and income losses, through training, credit facility and employment opportunities.

Paper ID-403: Early Marriages in Kerala: Is it an exaggerated story?

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Malnutrition, especially under-nutrition, is a major public health problem affecting millions of people. The school-age period is nutritionally significant because these are the formative years in the life when major physical, psychological, and behavioural changes take place. The present study provides a snapshot of nutritional status of children. The role of the Mid-day Meal Scheme, Dietary diversity, and household food security status have been explored. This study was carried out in Uttar Pradesh, which includes information of 455 children of 5 to 14 years. Overall, 32 percent of children covered in the study were stunted. The prevalence of stunting was higher among the girls, SC, Muslim and elder children. More than 33 percent of children who always eat MDM in the school were found stunted in comparison to 29 percent of children of those who did not eat or occasionally eat MDM. Dietary diversity dose not shows any variation on stunting. However, 20 percent of children of food secure household and 30 percent of food insecure without hunger households were stunted. Whereas, a higher proportion of children (35%) of food insecure with hunger households were stunted. Results of logistic regression indicate that there is no significant association between the stunting among children and their participation in the MDM Scheme. Further, the children from food insecure with hunger households were 2.13 ($p < 0.05$) times more likely to be stunted than children of food-secure households. Age, religion, and type of household emerged as the significant determinants of stunting. Study indicates that children who eat MDM were more likely to be stunted. It may be because most of the children who participate in school lunch belong to poor families, food insecure and households with low dietary diversity. Food security at the household level revealed a significant and positive effect on stunting.

Paper ID-405: Migrant Gig workers and the impact of Urbanization: A case study of Udaipur

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The penetration of technology in societies is bound to bring change. It will necessarily demolish the old existing structures and build new ones. Today, the pervasive rise in technology has led to the rise of several contingent forms of work like the “Gig Economy” which operates through platforms. These gig economy workers are mostly migrants as the process of ‘on-boarding’ in this economy is relatively easy which attracts the youth of today to migrant to urban settlements where gig economy operates. The process of rapid urbanization and demographic dividend of India which comprises mostly of working age group adds up in the proliferation of this economy. But on what foundation these new ways of employment are being built should be acknowledged since these new structures are going to set the momentum for the future. Today, all over the world labour unrest and protests especially among gig workers have become a common phenomenon. During the pandemic, all the loopholes in work and unemployment areas which we have been ignoring for decades started showing up and revealed the dismal picture of the state of labour in our nation especially the migrants. Increasing urbanization is linked to increase in migrant population and during covid - 19 the plight of migrant workers came into limelight which made us question the existing urban policy. This paper through case study of delivery boys is an attempt to unpack the plight of migrant gig workers and the impact of urbanization on the Gig Economy.

Poster Presentation Abstracts

Paper ID-1: Status of Double burden of malnutrition among Adult Women of West Bengal

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Background: Dual contribution of underweight and overweight is commonly known as dual burden of malnutrition. Prevalence of this dual burden of disease is increasing day by day among the population of developing countries. India is not the exception and so West Bengal.

Objective: This study has tried to present the state of double burden of malnutrition among women of West Bengal aged 15 to 49 years.

Method: Secondary data from 5th round of National Family Health Survey (2019-20) has been taken for analysis purpose. In this study, bivariate analysis and multinomial logistic regression was used to describe the present nutritional status of women of West Bengal and to find out the correlation with other societal factors.

Results: Analysis shows that prevalence of overweight as well as underweight is increasing throughout the districts of West Bengal. The prevalence of underweight is dominated in the western portion of the state whereas overweight is domination in the eastern and southern portion. Overweight is common for middle aged, working and married women. Whereas underweight weight is prevalent among 15-19 years adolescent, rural, unmarried women. Wealth Index, smoking habit, marital status, caste etc. are some of the important factors that determine the nutritional status of women in West Bengal.

Conclusion: West Bengal is posing warning regarding the unbalanced nutritional status of women aged 15-49 years. Public health policy, measures related nutritious food supplements etc. are needed to improve the situation.

Paper ID-13: Factors Affecting Neonatal Mortality

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Neonatal health care is an important components of health aspects for the survival of babies of concerned. Neonatal survival is a very sensitive indicator of population growth, health and development. The issue of neonatal death is serious national health concern, especially in developing countries where 9.6 percentage of the world approximate 5 million annual neonatal deaths occur. On this context, this study accesses the relationship between neonatal mortality and the socio-economic and demographic variables. For this study data were taken from National Family Health Survey (NFHS 5) and Sample Registration System (SRS). Bivariate and Univariate analysis were conducted for this study. It gives an equal importance to the effect of demographic, socio-economic and health variables which affect the neonatal mortality. Logistic regression analysis was used for this study to find the determinants in India. This study reveals that the age of mother is an important demographic factor associated with neonatal death. Highest percentage of neonatal mortality occurs at the age below 20 years. The children with higher birth order greater than four have higher risk of survival in the neonatal period. Several factors associated with neonatal mortality are found to be birth order, new born care, place of residence and anti-natal visit. To reduce the neonatal mortality, ensure Antenatal visit, Tetanus Toxoid injection during the maternity period. At the same time, improvements in socio-economic and demographic factors are essential to sustained long-term declines in NMR.

Paper ID-20: Severe Wasting Among Children in India

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Severe wasting, however, requires concerted medical attention along with appropriate nutritional intake. Wasting, defined as low weight-for-height, results from acute malnutrition and infections such as measles, diarrhea, pneumonia, meningitis, malaria, and other forms of fevers. The objective of the study is to find out the correlates of childhood severe wasting in India, and its regional variation. 2. To compare the change from NFHS 3 and NFHS 5. National Family Health Survey data 3 and 5 were analyzed using SPSS. Data from children below the age of five years were included in this study. Data on Demographic, socio-economic, and maternal health along with severe acute wasting of children aged below five years were included in the final analysis. Logistic regression analysis is used to find out the association between the maternal factors and the dependent variables it is done in two different models. In the first model, all the maternity factors were done separately with the severely wasting, and in the second model logistic regression was done with the independent maternity factors altogether with severely wasting. In the first model, severe wasting of the children under 5 years of age is taken as a dependent variable as individual characteristics like, the age of the child under 5 years of age were

taken as an independent variable. The results show that all the independent variables show statistically significant association with 95 % CI. Maternal variables like the age of the mother, education, occupation, mass media exposure and experience of domestic violence, and the number of children were taken. The results show that all the independent variables show statistically significant associations. Comparing the two models it is revealed that the age of the mother, children's age, Place of residence, caste, religion, education of the mother, occupation of the mother, mass media exposure of the mother, experience of domestic violence, anaemic condition of the mother, complications during pregnancy, financial aid received from the government and breastfeeding are directly associated with the children getting severely wasting. These variables show statistical significance with a $P < 0.05$ level of significance.

Paper ID-35: Differential determinants of birth spacing among urban Indian women

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Background Fertility in urban is more regulated behavior than rural. In urban areas, focus is given more on child quality, where parental investment plays a major role. Appropriate birth spacing reduces the risk of poor birth outcomes and maternal health. The present study examines the effects of different background characteristics on the duration of birth intervals in urban India.

Methods The present study will utilize urban samples from the fifth wave of the National Family Health Survey, 2019-21. Four close birth intervals are taken into consideration: marriage to fourth birth. Bivariate analysis is used to examine the median birth intervals. Further, the Cox proportional hazard model is used to explore the factors associated with different birth intervals.

Result A longer birth-interval is observed with an increase in the level of education, marriage age, and economic status. But in the case of marriage to first birth, the results are different. Media exposure, women's education level, contraception use, the husband's education level, and higher household economic capacity all contribute to a longer birth interval. Of all the covariates studied, the education level of husband and wife, use of contraception, and age at marriage influence the interval among different birth intervals. The effect of religion also has a significant effect on the different birth intervals.

Conclusion The study emphasizes on women education and use of contraception as important determinant keeping appropriate birth spacing which is vital for mother and child's health. The study suggests that intervention that aim to increase birth intervals, including family planning and reproductive health services, may be important for women and child health.

Paper ID-37: Nutritional status of under-five children: Identifying hotspots and cold spots in districts of India

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In India, undernutrition among under-five children is a major public health concern which has long-term effects on a child's development. District-level studies assessing nutritional status using recently released datasets are scarce. This study aims to analyze the extent and pattern of under-five child undernutrition using the latest household data from the fifth round of the National Family Health Survey (NFHS). The prevalence of undernutrition was calculated using descriptive statistics. Further, the geographical patterns and spatial clustering were identified by Moran's I Index and Local Indicators of Spatial Autocorrelation (LISA). The geographical patterns in undernutrition were analyzed to highlight the localized hotspots and cold spots. The results revealed that the highest level of under-five child undernutrition is predominant in the north Indian states like Uttar Pradesh, Bihar and Jharkhand, few districts in Rajasthan, Madhya Pradesh, Meghalaya, Gujarat and Andhra Pradesh. There are wide disparities in under-five child undernutrition indicators across different states of India. A higher degree of clustering in childhood undernutrition was observed in districts of India as Moran's I index is significantly high (0.62). This study illustrates the enormous variances and clustering in India's districts regarding childhood undernutrition. According to the geospatial analysis, three indicators of child undernutrition displayed distinct geographical trends in Indian districts. These recent figures for under-five child undernutrition depict the poor-performing districts and states, underscoring the need for coordinated interventions, especially in the hotspots.

Paper ID-44: Prevalence and Risk Factors of the Composite Index of Anthropometric Failure among children under five years of age in Uttar Pradesh, India

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Background: Malnutrition is a serious problem in many developing countries. It is one of the main causes of child morbidity and contributes significantly to premature mortality. Of the total malnourished children of India, Uttar Pradesh alone contributed about 40.0% of malnutrition.

Objectives: To assess the severity of malnutrition and identify the associated vulnerable risk factors of children under the age of five years using the Composite Index of Anthropometric Failure (CIAF) in Uttar Pradesh, India.

Methods: CIAF was constructed using child anthropometric data from the fifth round of the National Family Health Survey (NFHS-5, 2019-21). Descriptive analysis and logistic regression analysis were used to assess the odds of CIAF among various sub-categories of socioeconomic, demographic, family, maternal and children individual variables and to identify the most vulnerable factors. Choropleth maps were constructed and descriptive analysis of the district-level prevalence of CIAF was performed to identify the geographic clustering of malnutrition.

Results: Of the total 26670 children, overall, 55.1% of children were malnourished by CIAF method. The CIAF analysis shows that 19.3% of the children were stunted, 5.9 % were wasting and 1.9% were underweight only while 16.8% were stunting and underweight both, 6.6% were wasting and underweight both, and 4.5% were stunting and underweight both respectively. Analysis via usual method shows, 40.6% children were stunted, 29.9% were underweight, and 17.0% were wasted children. Child's age is the most prominent factor influencing stunting malnutrition followed by child size at birth, birth order, breast-feeding period and religion. Similar factors were found for the underweight and for wasted children.

Conclusions: It can be formally concluded from this study that child-related health planning and policymaking need to formulate in Uttar Pradesh considering the socio-economic and maternal factors of the parents along with identified risk factors of the children. Keywords: CIAF, Malnutrition, Children, NFHS-5, Uttar Pradesh, India.

Paper ID-57: Demographic transition at the national and sub-national level over the period of past half century in India

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Background: Demographic transition has been crucial leading issue that has been studied often by demographers. The demographic transition model explains how high-birth and death rates fall over the period to low-birth and death rates based on various countries' scenarios.

Objective: To assess and compare the fertility, mortality and demographic transition across states of India in the past few decades.

Methods: Present Study collated data from Sample-Registration-Systems (SRS) and SRS abridge life tables. Based on TFR and LEB for the period of 1990,2000,2010 and 2020, we have estimated Indexes: Fertility-Transition (FTI), Mortality-Transition (MTI), and Demographic Transition (DTI) for all study period. FTI, MTI and DTI have been estimated similar to HDI index methodology. By using index score, study compares fertility, mortality and demographic transition over the period and also across the states.

Result: Study found, India achieved advance-Fertility Transition (FT), almost 85% (FTI: 0.853) in 2020 whereas it was just at the stage of middle-FT 62% (FTI: 0.623) in 1990. For, Mortality Transition (MT) also significantly declined up-to 70% high-MT stage from middle-MT in 2020 which was at low-MT in 1990. DTI score were achieving transition from low-DT (54%) in 1990 to high-DT (77%) in 2020. Among all states, Kerala was only state at the high-DT level in even 1990; however, it has shifted to Advance-DT since 2000. While most western-states (Maharashtra and Gujarat), southern (Tamil Nadu, Andhra-Pradesh, Telangana, and Karnataka) northern (Punjab, Himachal-Pradesh, J & K, and Haryana) were found High-DT in 2010.

Conclusion: In India, fertility, mortality and demographic transition found significant variation across the states and over past four periods. As whole India, with such on-going family-planning-programme and policies for fertility, mortality and demographic transition has performing well. Only special focused should be given to most populous states: Uttar Pradesh and Bihar, still lagging behind in decade in terms of fertility and mortality transition.

Paper ID-61: Assessment of Childhood Undernutrition in India Using NFHS 3 and NFHS 5

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According to Global Hunger Index (GHI) 2022, India ranked 107 out of the 121 countries. The fifth round of National Family Health Survey has shown only modest improvements in different nutrition indicators, pointing the slow rate of progress. The objective of the study is to estimate the prevalence of childhood undernutrition over the past 15 years using composite anthropometric indices and identify the determinants associated with it. Data from the third (2005 - 2006) and fifth (2019 -2021) rounds of National Family Health Survey were used for the study. Univariate distribution, bivariate distribution, chi-square test and logistic regression analysis were utilised for the study. CIAF highlights the unexplored groups of childhood undernutrition. The results shows that according to conventional indices, 48 percent and 43 percent of the children were stunted and under weighed respectively in NFHS 3, which has declined correspondingly to 36 percent and 31 percent in NFHS 5 and the prevalence of childhood wasting remained unchanged. 61 percent of the children were undernourished in NFHS 3 by CIAF which had declined to 52 percent in NFHS 5. Stunting Index, Underweight Index and Wasting Index were also calculated to find the severity of stunting, underweight and wasting with respect to the total undernutrition. When the severity of childhood stunting and underweight decreased that of wasting increased over the study period. Mothers of higher age groups, who had no education, poor standard of living, those from rural areas, ST caste group, Muslim or Hindu religious group had higher rates of undernourished children, whereas mothers of 15 -19 age group had the highest prevalence of childhood wasting in both the data. The rates of childhood undernutrition increased with increase in birth order and decrease in their HB level. These results manifest the need of CIAF over the conventional anthropometric indices.

Paper ID-62: Consanguineous Marriage and its effect on maternal health In India: an evidence from NFHS-4

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Marriage is an important social institution, one of the crucial vital events and entry into reproductive life in India. Consanguineous marriage is common, where individuals favor marrying within their in-group. This study examines the association between consanguinity and women's reproductive health and various anti-natal, natal, and pre-natal complications in Indian society. Data used in this study comes from National Family Health Survey (NFHS-4) 2015-16. The ever-married women sample aged 15-49 has been used. Two questions indicating the relationship to current husband before marriage, Presence of any of the anti-natal, natal, or post-natal complications were asked to ever-married women who had given birth in five years preceding the survey. Multinomial Logit Regression analyses the relative risk of occurrence of any kind of pregnancy, delivery, and post-delivery complications of women with consanguineous and non-consanguineous. Considering consanguineous marriages, 43.7 % of women have any pregnancy complications, i.e., swelling of the hands, legs, or any other body part or visual disturbance or convulsion not from fever, whereas this percentage is slightly lower among women in non-consanguineous marriages. There are around 8.11% of women who are in consanguineous marriages have all three delivery complications (i.e., during delivery experience breech presentation, excessive bleeding, prolonged labour), whereas this percentage is 5.28% in women who are in a non-consanguineous marriage. Around 8.05% of women who are in consanguineous marriage have all the 2 Post-delivery complications (i.e., in the first two months of delivery, experience massive vaginal bleeding and high fever), whereas this percentage is 7.27% in women who are in a non-consanguineous marriage. The analysis suggests that women in consanguineous marriages experience adverse maternal health-related complications, i.e., during pregnancy, delivery, and post-birth, more than their counterparts, i.e., women in non-consanguineous marriages in India. There is thus an imperative need than ever before to generate awareness about the adverse health impact of unions within blood relationships in India. Keywords: Consanguineous marriage; Women; Pregnancy; India.

Paper ID-69: Socio-economic inequality in Utilization of MCH Services among Tribal Population in India

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Introduction: Despite increased initiatives, projects and programs by central and state governments, the utilization of health services by the tribal community has increased, still enhanced efforts are required to curtail the existing inequality in the utilization of MCH services. Hence, the current study tends to examine the magnitude of socio-economic inequality in utilization of maternal health services (full ANC and institutional delivery) among mothers from the tribal population of India.

Data and Method: The study utilizes the data from the latest two rounds of National Family Health Survey (NFHS-4 and NFHS-5). Concentration curve & index, logistic regression and Wagstaff decomposition were used for the analysis.

Result: The result revealed a substantial increase in utilization of full anc and institutional delivery among the tribal mothers during 2015-21 and the state variation was large. Results from the CC revealed a pro-rich inequality in utilization of full ANC and institutional delivery. The magnitude of inequality declined from 0.186 in 2015-16 to 0.121 in 2019-21 for full ANC while it declined from 0.109 to 0.065 for institutional delivery over the similar time period. Results from the decomposition analysis reveal the significant contribution of maternal education, media exposure and place of residence in explaining the inequality. Additionally, the result of the logistic regression reveals the positive association of maternal education, and wealth quintile on full ANC and institutional delivery, while rural place of residence and more than 2 children were found to be negatively associated.

Conclusion: Enhanced promotion of MCH services through mass media among the tribal community may be prioritized to improve the uptake of maternal health services in India.

Paper ID-72: Diabetes risk, progression, healthcare burden and impact on the mental health of diabetes patients in India

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Evidence from the International Diabetes Federation reports underlines the critical position of India as a hotspot of the diabetes epidemic, attributing shifts in population structure and urbanization as significant risk factors. The present scenario has generated a need to investigate risk factors, burdens, and associated complications. The study is based on data collected by wave 1 of LASI on adults in India. Apart from listing the common socio-economic, lifestyle, and anthropometric risk factors, the study also aims to identify the sequence of associated comorbidities in diabetes patients and create a disease network. The disease network will provide a brief glimpse into the pattern of diabetes progression in the Indian population. Further healthcare burden due to diabetes and each associated comorbidities is investigated through healthcare usage and out-of-pocket expenditure. The study also presents the impact on the mental health of diabetes patients through CIDI and CESD values.

Paper ID-76: Linkages between high-risk fertility behaviour and anaemia among ever-married women (15-49 years) in India: A study based on NFHS-5 (2019-21)

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Maternal malnutrition significantly impacts maternal and child health outcomes, and it increases the risk of the mother dying during delivery. High-risk fertility is a roadblock to reducing mother and child mortality. This research aims to determine the prevalence of high-risk fertility behaviour and anaemia among married women and the relationship between the two. The study analysed data from 224,748 ever-married women (15-49 years) who had at least one child in the five years prior to the National Family and Health Survey (2019-21). We have used descriptive statistics and binary logistic regression to determine how high-risk fertility behaviour is linked to anaemia. Finding suggests that approximately two-thirds of the women were anaemic, and more than 29% had at least one of the high-risk fertility behaviours. In total, 24% of the women were vulnerable to single high-risk fertility behaviour, whereas more than 5% were vulnerable to multiple high-risk fertility behaviours. After controlling for sociodemographic factors, the findings revealed a statistically significant link between high-risk fertility and anaemia. As a result, 6% of the women were likely to be anaemic due to high-risk fertility behaviour in general, and 7% and 4% of the women were likely to be

anaemic due to single and multiple high-risk fertility behaviour, respectively. This result shows that, as a whole, about 20.40 million women were likely to be anaemic due to high-risk fertility behaviour. According to the findings of this study, maternal high-risk fertility behaviour is a significant factor in raising the chance of anaemia in ever-married women for minimising high-risk fertility behaviour among Indian women, policy and choice-based family planning techniques should be employed, which might aid in the reduction of malnutrition in these children.

Paper ID-79: A study of the health and well-being of children in street Situations and intervention of CSOs

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Children in street situations (CSS) are defined as children who are living on the street independently or with their families either to work or to beg or just to wander. Many scholars argue that the children living in shelters run by civil society organisations are also falling into the category of the CSS. Poverty-induced migration is one of the major factors for children in the street situation. The study is a part of the first author's M.Phil. under the supervision of Dr. Pushpanjali Jha in the year 2019-2021. The main objectives of the paper are: (i) to comprehend the factors for CSS, (ii) to study the health and well-being of CSS, and (iii) to understand the interventions of CSOs for CSS vis-à-vis their health and wellbeing. The study was purely qualitative in nature, and one-to-one interview and an observation guide was used to collect data. The data was collected from the 20 children living in the two different shelters in Delhi. Convenient sampling was used to select the research participants of the study. Result: The three-level factors for CSS: Macro i.e., urbanisation, and poverty-induced poverty, Meso i.e., domestic violence, step-parents, alcoholic parent, and Micro i.e., substance abuse, physical and sexual abuse, and wanting to roam freely. The physical and mental health of the study population has been chronically compromised due to their past and present life. CSOs have provided intervention for both physical and mental health for the children living in the shelter. However, due to stigma associated with the study population and the lack of professionalism of CSO staff has a negative toll on these children. Moreover, there is a lack of funds in the post-pandemic period making the CSO and children more vulnerable in terms of the needs for their physical health.

Paper ID-82: Awareness of contraceptives and HIV among Sexually Active Youth in India: Evidences from National Family Health Survey (2019-2021)

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In India one's attitudes and behaviours are shaped by rigid traditional norms and not by proper-comprehensive sex education. Indian rigid norms prevent sex education with prejudice that it will lead to cultural degradation. This study shows youth's knowledge of contraceptives and HIV in the absence of sex education programs, especially knowledge of sexually active youth. This study used secondary data from the fifth National Family Health Survey. This study shows around 95% of sexually active youth are aware of HIV but out of them, about 70% do not have comprehensive knowledge of HIV. About 98% of the youth are aware of contraceptives, which reduces when it comes to knowing the source of the condom. Variation in knowledge with different background characteristics is also examined in this study. This study recommends sex education to children and youth as a need of the hour and should be imparted by trained parents and teachers.

Paper ID-84: Effects of different levels of wealth quintile on women's contraceptive use in India

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Abstract: Background: Reproductive health is an essential component of sexual life, pleasure, family planning, and women's rights in society. Fertility and wide disparities in wealth distribution are enormous issues in the Indian subcontinent. Family planning methods are useful for limiting fertility, but they are not always equally available in all parts of India.

Objects: This study investigates the effect of wealth on contraception use in India. Data and methods: The study was cross-sectional in nature and used India's NFHS-5 dataset, 2019- 21. It focused on currently married women of reproductive age. The current use of contraceptive methods is the dependent variable. For the analysis, chi-square and multinomial logistic regression were used.

Finding: Current use of modern contraceptives was higher among women in the richest wealth quintiles (21.30%) than among those in the poorest (16.34%) ($p < 0.001$). Women in the richest wealth quintiles (RRR = 0.83***; C.I = 0.74-0.93, $p < 0.001$) were more likely to use modern techniques than their counterparts in the poorest wealth quintiles. Traditional methods are less used by the rich quintiles.

Conclusion: This analysis shows how important it is to specifically address the individual and contextual effects of the poverty-wealth dimension in rural and urban areas separately in studies on contraceptive behaviour. Fertility was higher and the use of modern contraception was lower among women in the poorest wealth quintiles than among those in the richest wealth quintiles. The disparity in contraceptive use between women in India's poorest and richest wealth quintiles may be closed if contraceptives are made widely available at low or no cost. Keywords: Reproductive health, Family planning, Contraceptive, Richest, and lowest wealth quintile.

Paper ID-88: Intergenerational Solidarity and Psychological Wellbeing Among the Elderly in India

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Background: With the rapidly changing demographic scenario, India is on the verge of shifting towards ageing society. In light of the growing ageing population and changing family structure, the intergenerational family relations on the well-being of older parents take on added significance. The present study aims to illuminate the association between various dimensions of intergenerational solidarity (affectional and consensual) and psychological well-being among the older population (60 and above) in India.

Methods: Two indicators of psychological well-being were used using two self-reported measures: The cognitive dimensions or mental health using Centre for Epidemiologic Studies Depression Scale (Radloff, 1977) and the Life Satisfaction Index (Diener et al., 1985) based on the first round of the Longitudinal Ageing Study in India (LASI). Multivariate linear regression analysis was used to determine whether intergenerational solidarity (affectional and consensual) is related to life satisfaction and mental health.

Results: Our results suggest the average life satisfaction and mental health scores among the Indian elderly are 63% and 67% respectively. It was found that both affectional solidarity and consensual solidarity are positively associated with life satisfaction. Apart from this self-rated health, and individuals' socio-demographic characteristics (place of residence, living arrangements, wealth status, educational attainment) largely determine the psychological well-being among the Indian elderly.

Discussion and Conclusion: This study provides an insight into the lives of Indian elderlies by highlighting their psychological well-being through life satisfaction and mental health. With increasing age, cognitive health, family relationships, interaction patterns and role expectations from family members declines. Hence, a sense of companionship is required to enhance the well-being among the elderlies. Therefore, with increasing age as the health of individual decline, the family solidarity in terms of interaction among the family members, family consensus and close relationship with family members can enhance the overall well-being among the older population.

Paper ID-90: An Assessment of Maternal Indicators on Child Survival in India Over the Last Three Decades

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Despite a consistent decline in early childhood mortality rates in almost all regions of the world over the past few decades, it is still a matter of serious concern, particularly for developing countries like India. India's most important population problem is the inability to pinpoint the root causes of the prevalence of very high infant-child mortality. Hence this study examines the effect of maternal health indicators on infant and child survival in India. Data from three waves of the NFHS (NFHS-1, NFHS-3, and NFHS-5) were utilised to determine the shifting trend of maternity health indicators on child survival during the last three decades. The data were analysed using multiple linear regression and fourth-order correlation. Significant change was observed in infant and child mortality over the time period from 1992-2021. Infant mortality varies from 78.5 (1992-93) to 35.2 (2019-21) in India. The result shows that the highest percentage of women who received full Antenatal Care during the last pregnancy was in southern states. All maternal health care indicators were highly

correlated with different mortality measures. The results of multiple and partial correlations also strengthened this association. The value of R^2 was low on Child mortality in NFHS-1 and NFHS-3; it was changed into NMR. While in NFHS-5, the R^2 value was lower in all the early childhood mortality except child mortality (0.598). The partial correlation analysis shows the deviation of antenatal care variables, which are highly correlated to the mortality indicators from NFHS-1 to 5, i.e., Delivery assistance by health professionals was highly correlated with various mortality measures in NFHS-1; however, this correlation was changed in NFHS-3 and NFHS-5 to reflect antenatal care. Even though all maternal care factors have some effect on child survival, the study shows that maternal care services still need to be strengthened.

Paper ID-98: Income and life expectancy differential by social class in India: A cross sectional estimates from NFHS-4 and 5

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Objective: Though estimates of longevity are available by state, age, sex and place of residence in India, disaggregated estimates by social and economic groups are limited. This study estimates the life expectancy at birth and premature mortality by caste, religion and regions of India.

Design: This study primarily used data from the National Family Health Survey (NFHS-4 and NFHS-5), 2015-2016 and the Sample Registration System (SRS), 2011-2015. The NFHS-4 and NFHS-5 is the largest ever demographic and health survey covering all states and union territories in India.

Measures: The abridged life table is constructed to estimate the life expectancy at birth, adult mortality (15q₅₉) and premature mortality (0q₇₀) by caste, religion and region. Results: Life expectancy at birth was estimated at 66.4 years for Scheduled Castes (SC), 67.2 years for Scheduled Tribes (ST), 68.1 years for Other Backward Classes (OBC), and 70.4 years for others. Life expectancy at birth was higher among females than among males across social groups in India. It was higher among Christians (71 years) followed by Muslims (68 years) and Hindus (68 years). Premature mortality was higher among SC (0.34), followed by ST (0.33), OBC (0.30) and Others (0.26). The regional variation in life expectancy by age and sex is large.

Conclusion: In India, social and religious differentials in life expectancy by sex are large and premature mortality and adult mortality are also high across caste and religious groups.

Paper ID-102: Economic burden and financing strategies for cancer care in India

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Problem: Globally 9.3 million deaths occurred due to cancer in 2018. Currently, India has 13.9 lakh cancer cases, which are estimated increase by 12% by the year 2025. Treatment of cancer inflicts a heavy cost of care and may even impoverish households.

Methods: Using the national health survey data for 2017-18, this study estimates the burden of healthcare expenditure due to cancer and financing strategies to pay for treatment. Factors affecting the health care expenditure on cancer are examined using a two-part model.

Findings: Approximately, 37.4 % and 48.7 % of household's monthly consumption expenditure was spent on inpatient and outpatient cancer care, respectively. Households' own income/savings were used to pay for 92% of outpatient visits and money had to be borrowed for 17% of inpatient admissions. The likelihood of incurring expenditure on cancer cares greater at higher age-groups and income quintiles and is lower for females and people seeking care at private facilities. However, the mean expenditure is higher for those using private facilities or belonging to richer quintiles and lower in urban areas.

Conclusion: There is a need for early screening for cancer, and policies to impart financial protection for reducing the economic burden of healthcare for cancer among households in India.

Paper ID-110: A qualitative study on the health-seeking behaviour and its determinants among families in Urban Patna

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Background: Examining the factors impacting the health seeking behaviour and utilization of health services is crucial for developing countries where improved access to quality health care services is an important health policy goal. While several studies have assessed health seeking behaviour of certain population subgroups, there is little known about the health seeking behaviour of families as a social unit and the factors determining it.

Objective: This study explores health seeking behaviour of families residing in urban Patna with a focus on examining major factors that impact their health decisions and pattern of healthcare utilization.

Method: This paper is based on qualitative study of 50 research participants recruited from all four administrative divisions of Patna Municipal Corporation. Purposive snowball sampling techniques has been used and data was collected using face to face interviews.

Results: Findings from the study reveal that urban families use multiple methods for seeking treatment for their health problem(s). Most participants prefer using home remedies during common health issues such as viral fever, cough and cold, and digestive problems whereas allopathic medicines in case of prolonged health problems. Reliance on private health facilities over public along with trust upon family doctors were noted. However, the likelihood of when and where to seek treatment is influenced by various factors such as family income, health insurance status, severity of health problem, distance to health facility, internet reviews of health facilities and mutual decision of family members. An increasing trend of online consultation with doctors as well as usage of ayurvedic and natural products within families has been stated since the outbreak of Covid 19.

Conclusion: Findings from our study can be relevant to health planners, and various government or non-government organizations. Policymakers intending to improve access to and the use of health services may consider both individuals and families.

Paper ID-112: Gender differentials and socio-economic correlates of early marriage in India

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Background: Early marriage, which appears to be a paradox, is essentially a union between a boy and a girl before they reach the legal age of marriage (UNICEF). Child marriage or early marriage used interchangeably is widely recognized as a violation of health and human rights. Aim of the study: The present article examines gender differentials and socio-economic correlates of child marriage in India.

Methods: The present article utilized recent nationally representative cross-sectional sample survey data from a Fifth round of the National Family Health Survey (NFHS-5), the Indian version of the Demographic and Health Survey (DHS).

Key Findings: Every fourth of females and one-tenth of males fell prey to early marriage even as the percentage dropped. Early marriage was high among both gender who had no education than those who had education. Special variation has been seen among the gender, the highest rate of early marriage was observed in West Bengal (female) and Bihar (male). It was found that education, caste, wealth status and, place of residence explain nearly two-fourth of the inequality in the occurrence of early marriage among both genders.

Conclusion: It is suggested that for reducing the incidences of early marriages among both genders, while the reduction was high among female then males. It would be appropriate, that policy-makers to focus those regions and communities where the prevalence of early marriage is still high and it an accepted norm among both the genders.

Paper ID-121: Individual-level co-occurrence of overweight-obesity and anemia: evidence from a nationally representative survey of India

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Background: Anemia and Overweight/obese are simultaneous concerns of many countries around the globe, whereby the co-occurrence is evident to and studied in only few countries. We analyzed both men and women samples from the 2005-2006, and 2015-2016 National Family and Health Surveys, India.

Methods: Bi-variate analyse were performed to see the level of co-occurrence across the states of India. Multivariate logistic regression models were used to establish associations between household, individual characteristics, dietary intake score and co-occurrence of OWOB. Alongside spatial analysis was conducted to detect the geographical clustering of the co-occurring anemia-OWOB.

Results: India sees an increase in the co-occurrence of anemia and OWOB by 1.5% in 2015-16, mostly among women. A number of socio-demographic factors, namely age, gender, type of residence, wealth index, dietary intake score, as well as time, among others correlate with the incidence of co-occurring anemia-OWOB. The districts in India presents a picture of neighbourhood influence, with high concentration of co-occurring anemia-owob in parts of Southern and Northern region.

Conclusion: Combining knowledge on dietary intake and food-fortification/nutritional policies with affordable and accessible nutritional food focusing on adults may contribute consequentially in avoiding the growing public health concern in India.

Paper ID-124: Patient Compliance, Comorbidities and Challenges in The Management of Hypertension in India

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Background & objectives: As of now, only one-third of those with hypertension in India are unaware of the existence of this condition, and only a negligible share of those diagnosed can control it through medication. There is a need to understand the characteristics and behaviours of patients treated for hypertension for generating evidence for better management of this condition. In this context, the study examines the key factors associated with uncontrolled blood pressure levels in patients under medication for hypertension.

Methods: Data from the nationally representative Longitudinal Ageing Study of India (LASI) survey, 2017-18 is used for the analysis. This study is restricted to 12,353 respondents aged 45 years and above who were already diagnosed with hypertension before the survey and are under medication. Blood pressure level at the point of the survey was used to classify the respondents as hypertension under control (systolic<140 mm and diastolic<90 mm), Grade-1 Hypertension (systolic 140-159 mm or diastolic 90-99 mm), Grade-2 Hypertension (systolic 160-179 mm or diastolic 100-109 mm) and Grade-3 Hypertension (systolic 180 or above mm or diastolic 110 or above mm). Bivariate and multivariate logistic regression analysis is performed to study the association between hypertension control in these patients and their demographic, socioeconomic, and behavioural characteristics.

Results: A critical proportion of respondents is having uncontrolled hypertension of grade 1 (31 per cent), grade 2 (15 per cent) and grade 3 (2 per cent), despite taking medication for the same. As compared to their remaining counterparts the risk of uncontrolled hypertension is high in rural areas (OR=1.37, 95% CI, P<0.01), old-adults living alone (OR=1.63, 95% CI, P < 0.05), patients having no schooling (OR=1.18, 95%CI, P < 0.05), patients with obesity (OR=1.2, 95% CI, P<0.05), Moderate alcohol drinkers (OR=2.1, 95%CI, P<0.01), Abusive alcohol drinkers (OR=1.6, 95%CI, P<0.01).

Interpretation & Conclusions: Poor control over blood pressure levels among patients from rural areas, the poorest and most vulnerable sections support the governmental efforts initiated since 2018 to expand community-level screening and provisioning of NCDs, including hypertension. In addition, concrete efforts for health promotion within patients under medication for hypertension too are essential for better management of this condition.

Paper ID-126: Husband's migration status and contraceptive behaviours of women: Evidence from Middle-Ganga Plain of India

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Male out migration is negatively associated with contraceptive use in developing countries. This study aimed to examine the effect of male out migration on the contraceptive behaviour of women in Middle-Ganga Plain (MGP) region. The data has been collected from the Middle-Ganga Plain survey, which was conducted by the International Institute for Population Sciences (IIPS). The overall sample size was 1314 wives left behind and 1402 non-migrant wives. The result shows that female sterilization was the most common method used by the both left behind wives (30.9%) and non-migrant wives (34.6%). Among the left behind women the most common reason for not using contraception was husband is away from home (30.86%), in contrast the main reason for not using contraception among non-migrant wives was wants children (28.70%) followed by fear of side effect (10.85%). The result also shows that left behind wives were less likely to use any methods of contraception than the non-migrant wives. Left behind women were more tend to use the any modern methods (OR-0.74, 95%CI= 0.60-0.91) than the any traditional methods (OR-0.65, 95% CI = 0.49-0.85). Age, religion, family type, working status, marital duration was strongly associated with contraceptive use of women. These findings add to the body of literature already out there that explains how migration affects women's health. Therefore, there is an important need to develop and implement comprehensive education programmed and policy on contraception use.

Paper ID-130: The impact of adult out-migration on health and treatment seeking behavior of left behind older parents: an exploratory study in Sundarban delta region in India

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The objective of the present study is to assess the impact of adult out-migration on the health and treatment seeking behavior of left behind older parents. A cross-sectional survey was conducted during October, 2020 to December, 2020 among 400 left behind and 200 non-left behind older parents aged 60 years and above residing in Sundarban delta region of India. Data were analyzed using t-test, OLS model, instrumental variable model and Heckman Probit model. We considered five physical health markers- self-rated health (SRH), non-communicable diseases (NCDs), activities of daily living (ADLs), instrumental activities of daily living (IADL), acute sickness and two psychological health indicators- cognitive capacity and depression. Prevalence of NCDs and depressive symptoms steadily increased with adult children's out-migration. Conversely, a positive association was found between adult children's out-migration and older parents' mobility and cognitive capacity. We also noted migration has a negative impact on NCDs related treatment seeking among left behind older adults. However, results did not show any statistically significant association between migration and treatment seeking during acute sickness of elderly. Findings suggest more attention and efforts are required to ensure substantial welfare of this vulnerable cohort.

Paper ID-131: Multiple chronic diseases and cognitive Impairment: A rising public health concern in India

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With the increasing proportion of the older population worldwide majorly due to a gain in life expectancy and low fertility rates, the burden of chronic diseases is expected to increase in near future. For a large group of older adults, these concerns are further compounded by the presence of mental health and cognitive issues. The research investigates the importance of brain health, and the management of chronic conditions to help identify the needs and mitigate the future health burden associated with a growing proportion of older adults. This paper has utilized the LASI wave 1 dataset. The univariate, bivariate and logistic regression analysis has been applied to fulfill the research objectives. The findings reveal that older adults who are cognitively impaired reported having at least one chronic disease than those without cognition impairment. The prevalence of comorbid chronic diseases is higher in those with cognitive impairment than those without it. People residing at the urban place of residence, living with family, higher educated, currently working, and belonging to the richest wealth quintile have a higher likelihood to have better health than their other counterparts. Thus, the presence of

disparity between those with and without chronic diseases who have cognitive impairment appears greater in the later ages of older adults. Action needs to be taken to educate patients, healthcare professionals, and other stakeholders, about the importance of treating comorbidities, and addressing modifiable risk factors among patients with cognitive impairment.

Paper ID-139: Assessing the determinants of children ever-born in India among married Indian women: Evidence from the 2019-21 National Family Health Survey

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With the economic and social development, the population growth speeded up at alarming rates with plummeting death rates first and dropping birth rates at later stages. These socio-economic transitions have shaped the trajectory in the fertility and reproductive behavior of humans globally and India is not an exception. Therefore, this study aimed to estimate the magnitude and factors determining CEB in the country. This study utilizes data from the fifth wave of National Family and Health Survey (NFHS-5), a nationally representative survey conducted in year 2019- 21. This study focused on the number of children ever born to the ever-married women aged 15- 49years and the sample size was 542,623. Descriptive statistics was used to understand the sample distribution and to find the preliminary results. Bivariate analysis was used to investigate the pattern and distribution of children ever born by a number of socio demographic variables. Further, zero inflated Poisson regression models and negative binomial regression models have been used to estimate the number of children ever born to women in India. The maximum counts of CEB were found to be lower among younger women, women with higher educational attainment, when partner's educational attainment had higher level of education, women from richest wealth quintile, and women residing in southern region. It was found that both of the models performed equally for the modelling the children ever born. To conclude, evidences show that parental educational status have an important role to play in family decisions and thus needs proper attention. This study provides a framework for prioritizing the most important determinants affecting the number of children ever born of a plausible policy change.

Paper ID-146: Quality of Health Care Facilities for the pregnant women: A Diagnostic study of Tertiary Level Health Facility in Mangaldoi, Assam

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The main aim of this study was to understand the quality of maternal health services accessed by pregnant women and the factors for the health-seeking behavior of pregnant women in tertiary health care services in Mangaldoi district of Assam. 300 interviews with pregnant women belonging Below the Poverty Line (BPL) were conducted at the Mangaldoi Civil Hospital using a structured interview schedule. Interviews were conducted among pregnant women coming for Ante Natal Care services. Results suggest that around two third of pregnant were not satisfied with the quality of services provided at the facility. 32% percent said that the hygiene around the hospital was not up to the mark and that they could acquire infection. Nearly, 50% of the women said that the doctors did not communicate with them nicely and did not give enough time for consultation. Around 65% of the women were anemic at the time of the study and said they were not given proper food and pregnancy management advice. More than two-fifths (42.1%) of women said they will seek ANC services from private facilities. However, 93% said they would come to the district hospital for delivery. The main reason for preferring district hospitals over private facilities was the lower delivery cost (97%) and free ambulance services (89%). The study indicates that despite the government's push for affordable health care, access is restricted due to various cultural and economic factors.

Paper ID-166: Ill treatment and associated mental health outcomes among older female adults in India

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Background: Since older population in India continue to rely on family and social networks for care and support, understanding the mental health outcomes associated with ill treatment within and outside family may direct the development of policies and measures to aid the victims of ill treatment. The present paper examines the mental health consequences of ill treatment against older female adults aged 60 and above in India. **Methods:** Using data from Longitudinal Ageing Study in India (LASI) we employed bivariate and logistic

regressions on a sample of 16,366 older female adults to fulfil the aims and objective of the paper. Results: About 4.62% of women in India and 14% of women from Karnataka ill-treated last year after turning 60 years. Similarly, 24.94% women aged 60 and above are diagnosed depressed and 80 % women aged 60 and above are diagnosed depressed from Himachal Pradesh. Within family 31.84 % ill-treated by son and 4.82 % ill-treated by daughter. Whereas 17.35 % have felt physical 72.16% felt verbal ill treatment. Further, it was found that older female adults who ever faced ill treatment after turning age 60 years had 97% higher likelihood to have depression. Conclusion: Ill treatment against older female adults must be recognized as a key public health issue for older female adults in India. Study findings indicate the immediate need for assessing victim mental health outcomes following any type of ill treatment in later years to determine related policies and programs to protect the victims. Reducing ill treatment will have a positive impact on mental health outcomes late in life of elder women.

Paper ID-169: Hygienic menstrual practices among tribal adolescents and their determinants in India

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Background: Menstruation is a natural biological process in which blood and other related materials are carried out of the uterus through the vagina. Despite being a normal process, it is seen as dirty and many taboos, misbeliefs, and misconceptions are related to it, which prevents many menstruators across the world from handling it in a healthy, hygienic, and respectful manner. Girls and women, especially in the tribal setting, have restricted access to healthcare facilities despite shifting social and cultural norms and practices. Teenagers, especially young females, are more likely to retain inaccurate beliefs and conceptions due to inadequate, incorrect, and unclear information.

Method: The present study is based on secondary data, i.e., National Family Health Survey-5 (NFHS-5), and used suitable statistical tools to explore hygienic menstrual practices among tribal adolescents in India. The total sample of scheduled tribal women aged 15-19 in NFHS-5 is 22,563.

Results: The prevalence of hygienic menstrual practices among adolescents aged 15-19 years is 77.55% overall, while among the tribal adolescents, it is approx. 67%. In most states and union territories, the prevalence of hygienic menstrual practices among tribal adolescents is less than that of overall adolescents. The usage of the hygienic method depends on the place of residence, wealth status, educational status, and toilet facility. **Conclusion:** Interventions should focus on the states where the prevalence of using hygienic methods is less. Government should focus on reaching the community as lack of accessibility and affordability is the major concern among the tribal communities. Enhancing better menstrual practices in the present helps to enhance the reproductive health of the women in future.

Paper ID-173: Why they marrying in Haryana: A narrative of cross-region brides

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Haryana has the most adverse sex ratio in India. Its low sex ratio of 879 females per 1000 males primarily resulted from a strong preference for the male child and the consequent abortion of female fetuses. The shortage of females leads to a marriage squeeze for men of marriage age from their own states. Therefore, these men have started bringing brides from the poorer states of India including Assam, West Bengal, Uttar Pradesh, etc. The objective of this study is to see why these brides are marrying in Haryana and how this marriage is solemnized. The present study is based on primary data collected in the Jind District of Haryana in 2022. Total 150 brides who are married in Haryana from other states in the study area were interviewed. We used purposive snowball sampling to identify respondents at the village level. We have also conducted 10 key informants and 15 In-Depth interviews to understand the socioeconomic and cultural aspects. Bivariate analysis has done to see the demographic characteristics of the participants. The study found that the brides are coming mainly from Uttar Pradesh, West Bengal, Assam, Bihar, and Jharkhand. It is also found that the majority of them belongs to poor socio-economic characteristics. Many of the bride's parents are not alive as well as they don't have male members in the family to look after them. Newly married women are facing a lot of difficulties while adjusting to the language, food, and cultural assimilation. Women have very less support from their natal family after marriage and they hardly visit their family members. Keywords: Women, Brides, Sex ratio, marriage migrant, Haryana,

Paper ID-180: Interlinkages between Intimate partner violence and adverse outcomes of pregnancy termination among Indian women

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Background: Intimate Partner Violence, a violation of human rights is not just confined to impact women's physical, mental and sexual health but imposes adverse health outcomes on growing fetus with higher rates of unwanted pregnancies and induced abortions. Despite numerous attentions to maternal healthcare in the country, the status quo for miscarriages, induced abortions and stillbirth remains one of the key issues to be addressed through some evidence-based information.

Objective: The purpose of the present study is to investigate the association between IPV & different forms of IPV and pregnancy termination among Indian women based on an analysis of data from the fifth round of the Indian demographic and health survey.

Methods: Bivariate analysis was used to investigate the distribution of terminated pregnancy by socio-demographic characteristics. Further, logistic regression was employed to understand the factors affecting the termination of pregnancy. Propensity Score Matching analysis enabled us to understand the impact of IPV on those who never had a terminated pregnancy.

Results: Around 23% of women experiencing sexual violence reported having a terminated pregnancy. As evident those experiencing IPV were 43 percent more likely to have terminated pregnancy in the unadjusted model [OR: 1.43, CI:1.37-1.50] while in the adjusted model for socio-demographic characteristics, IPV increased the risk of pregnancy termination by 40 percent [OR: 1.4, CI:1.34-1.47]. In the adjusted model, which considers IPV combined with other socio-economic characteristics, it was observed that women experiencing physical or sexual violence were 1.38 times and 1.17 times more likely to have pregnancy termination [OR: 1.38, CI: 1.31-1.46 & OR: 1.17, CI: 1.06-1.29]. There was a 5.7% higher chance of having pregnancy termination among women experiencing IPV than who did not experience IPV.

Conclusion: This study confirms a substantial link between induced abortions and pregnancy loss and intimate partner abuse. The widespread prevalence of IPV in the country can have substantial implications on the prevalence of unintended pregnancies. Thus, it is important to have policies aimed at reducing IPV and improving the contraception usage which can lower the public health implications of unintended pregnancies.

Paper ID-187: Inpatient health care utilization among widowed adults in India-Evidence from a nationally representative survey LASI-1

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India has been on the brink of rapid socio-economic changes and these changes have manifested themselves through improvements in health and overall living standards of the general population. These improvements, however, have not been instrumental in reducing the persistent inequalities in the above. Although several health strategies and policies have addressed the equitable distribution of health care in India, not many studies have been undertaken on this topic, especially among older adults in India. The aim of this paper is to evaluate income related-inequalities in health care utilization among widowed older population in India. The analysis has been done by using the individual level data from the first wave of the Longitudinal Ageing Study in India (LASI). Odds ratios were computed through logistic regression analysis to examine the effect of the socio-economic status on the health seeking behavior of the widowed older adult population in India. Concentration Indices (CIs) were computed to quantify the magnitude of socio-economic inequity in health care utilization among widowed older adult population in India. Additionally, the CIs were decomposed to find out the contribution of socio-economic and demographic factors towards the total inequality in healthcare utilization among older adults in India. The regression results revealed that socio-economic status and residence have a strong association with treatment seeking behavior among the adults in India, with healthcare utilization being higher among richer class and urban residents. Health insurance and presence of multi-morbidity also displayed strong positive association with healthcare utilization in India. The positive estimates of CIs are suggestive of the fact that health care utilization among the adults continues to be pro-rich. Additionally, presence of multi-morbidity and geographical regions were two largest contributors to inequality in healthcare utilization among older adults in India. Findings from the current study point towards the need for having improved social security systems in place to protect the households from distress financing and reducing inequalities in a robust way.

Paper ID-205: Correlates of Morbidity among MGNREGA Workers and Government Workers in India

Dr. Dany S

Essalicode Mele Puthen Veedu Marukil Ooruttambalam

Occupational factors make important contribution to the global burden of disease. Work related morbidity not only result in suffering and hardship for the worker and his or her family but also it adds to the overall cost to society through lost productivity and increased use of medical and welfare service. A disease characterized by a relatively sudden onset of symptoms that are usually severe. An episode of acute disease results in recovery to a state comparable to patient's condition of health and activity before the disease, in passage into a chronic phase or in death. So, the study of acute disease is very important among MGNREGA Workers and Government workers. The stagnant growth rate of employment opportunities in rural India, led many farmers to commit suicide, so the government to enact on Employment Guarantee Act. The National Adversary council (NAC) proposed a draft which spelled out a plan for legally guarantee every rural house hold causal, manual work for hindered as in a financial year, provided that the adult members of the family voluntarily agree to engage in unskilled labour. The National Rural Employment Act come to existence in September, 2005 and was put into action in February 2006. So, the study aims to study the morbidity difference among the MGNREGA and Government workers in India. Objective of the study 1. To study the disparities between acute disease among MGNREGA Workers and Government workers. 2. To determine factors of acute disease among MGNREGA workers and Government workers. Data and Methodology The data has been extracted from the India Human Development Survey-II (IHD-II), 2011-2012. For the present analysis, only MGNREGA workers and Government workers selected. In this study acute disease was taken as the dependent variable. Therefore, the present analysis constituted only 4447 MGNREGA workers and 5080 Government workers. The different socio-economic and other factors selected were sex, marital status, education, smoking behaviour, Drinking alcohol, religion, caste, migration, use of computer, old age pension, widow pension, disability pension, animal care, Owen mobile, place of resident (rural/urban), women age group 1-49, age group, NREGA income, difficulty of daily living activity (Difficulty of walking, difficulty of toilet, difficulty of hearing, difficulty of speaking, difficulty sight, difficulty of dressing). Cross tabulations were employed to analyse the differentials of acute disease among the MGNREGA workers and Government workers. Binary Logistic Regression Model was used to analyse the determining factors of acute diseases among MGNREGA workers and Government workers in India. In the binary logistic regression model acute disease was taken as the dependent variable, which broadly classified in to two, the workers who having any one acute disease as (0) and not having acute disease as (1).

**Paper ID-209: How family, social environment and economic status affect life satisfaction in later life:
From gender perspective**

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This study explores the gender differences in life satisfaction in association with family, social environment and economic status among Indian older adults. This study hypothesized that life satisfaction is more closely associated with family and social environment among women and men more influenced by economic status. The first wave of the Longitudinal Ageing Study in India (2017-2018) was utilized. Life satisfaction was the outcome variable and family environment, social environment and economic status were the key explanatory variables. Bivariate and multivariate analysis were applied to fulfil the objective. The mean value of life satisfaction was higher among males (24.23) than females (23.69). Being in marital union had a positive association [acoeff: 1.32, CI: 0.03, 2.61] with higher life satisfaction among females. Living alone [acoeff: -2.72, CI: -4.05, -1.39] consistently reduced life satisfaction among males than those living with spouse and children both. Taking care of children or grandchildren were a protective factor for having higher life satisfaction for both male and female. Male older adults who reported highest self-perceived social standing had four times more [acoeff: 4.72, CI: 4.29, 5.16] likely to have higher life satisfaction than their counterparts who had low self-perceived social standing. On considering, economic status, women were significantly positively associated with better life satisfaction than men. Since the older population in India is growing, there is a need to promote older people's autonomy through different mechanisms.

Paper ID-217: Barriers to Healthcare Utilization during the COVID-19 outbreak: A Case Study of Delhi NCR, India

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The shift in the entire healthcare systems focus on managing the COVID-19 pandemic may have affected the timely diagnosis and treatment of other diseases, both acute and chronic. Such interruptions in healthcare delivery coupled with demand-side factors of patients can potentially cause a long-term disease burden. This study, based on data collected through primary surveys in over 500 households (2495 individuals) in Delhi NCR from June to October 2021, aims to provide empirical evidence to understand the health-seeking behavior of people and the barriers to healthcare utilization during the pandemic. Maximum-likelihood probit models with sample selection were employed for a two-step estimation of reporting of ailment and subsequent treatment-seeking. The post-lockdown (March 2020) morbidity incidence was 29.3%, and only 61.8% of the reported episodes received treatment on medical advice. Financial and time constraints were the most commonly cited reasons behind not seeking medical advice for treatment. The prevalence rate of chronic morbidities was 12%, of which 6% reported multi-morbidities. However, only 54.4% had access to continued treatment. An overwhelming majority (95.3%) reported having missed one or more appointments with the doctor, behind which closure of Out Patient Departments (OPDs) and fear of infections were the two most commonly cited reasons, with an average of 3 missed doctor's appointments (S.D. $\hat{A} \pm 1.7$). Sex, age, social group, wealth quintile, family type, sanitation, and drinking water treatment were significant determinants of reporting an ailment. While, sex, the total duration of the ailment, marital status, work status, wealth quintile, financial difficulty during the lockdown, and house ownership were major determinants of healthcare utilisation for an episode of illness. The study's outcomes give valuable insights for ensuring the management of an outbreak like COVID-19 while not compromising on consistently delivering general and specialized healthcare services to people in need.

Paper ID-221: Migration during the Covid-19 pandemic and its impact on basic necessities of life: A study of six states in India

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This article analyses the effect of migration during the covid-19 pandemic lockdown on food, livelihood, and healthcare utilization across six states in India: Jharkhand, Rajasthan, Uttar Pradesh, Andhra Pradesh, Bihar, and Madhya Pradesh. The data for this study were obtained from the Covid-19 Related Shocks Survey in Rural India 2020 dataset provided by World Bank. This survey collected data from 5200 households across six states in India in three consecutive rounds in 2020 during the covid-19 pandemic. The dataset covers demographic, migration, consumption, labour and income, agriculture, relief, and health aspects. The objective of our study is to understand the migration of the population during the lockdown in 2020 and its impact on food consumption, occupation, and healthcare utilization in six states in India. The analysis is done based on descriptive statistics and cross-tabulation of variables. To estimate at the state level the sample weight was applied in the analysis. In addition to this binary logistic regression analysis is also applied to find out the association the result and is presented in the form of Odd Ratio (OR). The results suggest that 22.5% of the population were migrants from six states just before the lockdown and among migrants, 78% population returned to their homes. Results also suggest that the migrant population faced more problems of food scarcity [OR: 1.57; CI: 1.576-1.579] and availability of jobs [OR: 1.05; CI: 1.058-1.061] than non-migrants. The participation in MNREGA of the non-migrant population was 1.4 times higher [OR: 1.44; CI: 1.438-1.442] than the migrant population. This study invites the policymaker's attention toward the constitutional rights of migrants as a citizen of independent India, especially during covid-19 like pandemic situation. Keywords: Covid-19, Migration, Livelihood, Health, India.

Paper ID-236: Prevalence and Determinants of Disease-Specific Multimorbidity among Elderly in India

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Multimorbidity is a global public health issue as the world's population ages with a high prevalence and significant consequences. This paper aims to verify the prevalence, determinants, and disease-specific morbidity of multimorbidity in the Indian elderly. The longitudinal Ageing Study in India (LASI) dataset was used for this Study, with 11 common chronic conditions among older adults aged 60 and above years. Descriptive statistics and multinomial logistic regression were used to see the result. The prevalence of single

morbidity was 30.3%, and multimorbidity was 32.1% among older people in India. Multimorbidity was higher among females and in urban areas and increased with age and those living alone. Hypertension, arthritis and thyroid were highly prevalent among females and chronic lung diseases and stroke were highly prevalent among males. The older people in the state of Kerala had a high prevalence of multimorbidity (59.2%). Multimorbidity was found to be more likely in older age groups of 75-79 years (RR-1.69; CI: 1.53-1.87) and 80 and above years (RR-1.40; CI: 1.27-1.56) and in the Western (RR-2.16; CI: 1.90-2.44) and Southern regions (RR-2.89; CI: 2.57-3.24). Disease-specific multimorbidity was high in chronic heart disease (91%) and low in angina (64.8%). The findings suggest that multimorbidity has a positive relationship with advancing age and disease-specific burden of multimorbidity is higher among chronic heart patients. Comorbidity, especially among those who already have chronic heart disease, stroke, cholesterol or thyroid disorder can have severe consequences on physical functioning, therefore, disease-specific health management needs to be enhanced.

Paper ID-238: Socio-Economic, Demographic Progress of the Primitive's and Non- Primitive's Tribal Groups (PVTGs and Non-PVTGs) in India: A Regional Study of the Tribal Dominated States of India (Census, 2011)

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India presents a varied tribal population depicting a complex cultural variety with various ecosystems. Some ethnic groups are considered Particularly Vulnerable Tribal Groups (PVTGs), earlier known as Primitive Tribal Groups in India. Therefore, PVTGs currently include 75 tribal groups which reside in 18 states and the union territory of India. Objectives: The following study analysed regional variation of the 15 major tribal-dominated states mainly including the PVTGs population by using Socio-economic and demographic indicators. Method: Data given by the Census of India-2011 and descriptive statistical techniques were used for the analysis. Result: About 60 to 70 % population is illiterate in most of the states in India. Similarly, the working condition seems to be very bad non-workers are higher among the PVTGs in most states in India. Conclusion: State-specific efficiency of educational involvements, livelihood interventions, skill development with capacity building and cultural protection is a crucial challenge in India. Keywords: Demographic, Socio-Economic, Progress, PVTGs and Non-PVTGs, Region

Paper ID-240: Is health insurance helps in choosing level of hospitals and reducing the economic burden in India

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The prime objective of this study is to examine the association of health insurance with type of hospitalization (public and private) and evaluate the role of health insurance in reducing the economic burden. The present study used nationally representative data on morbidity and healthcare from the 75th (2017-18) rounds of the National Sample Survey. A total of 1,13,823 households were surveyed in 2017, and the rural households belonged to 8,077 randomly selected villages and the urban households to 6,181 randomly selected urban blocks, respectively. Descriptive statistics and logistic regression analyses were used for this study. The coverage of health insurance was 23.1 percent in the hospitalized population. The higher health insurance coverage has been shown for hypertension (33.1%), Cancer (29.9%) and Diabetes (29.9%), and the lowest was in Diarrhoea (13.3%), jaundice (14.9%) and tuberculosis (18.1%) respectively. The highest private hospitalization has been depicted for genito-urinary (68.0%) and Musculoskeletal (62.6%), and the highest public hospitalisation was for Diarrhea (63.0%), Asthma (53.3%), and Cancer (53.1%). The logistic regression result showed no significant association between health insurance and choosing the type of health care. However, the insured group is 41% less likely to fall in the CHE group. The CHE has been shown eight times likely to higher in private hospitalization compared to public hospitalization. The result depicts that the CHE in NCD and injury was 3.7 and 3.2 more likely to fall in the CHE group. The CHE is higher in private hospitalization, and significantly higher rates were observed among child and older adults. Increasing hospitalization rates and costs contribute substantially to India's rising healthcare costs.

Paper ID-244: Miscarriage and its determinants in India: Evidence from NFHS 5 (2019-21)

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Miscarriage is defined as the spontaneous or accidental expulsion of the foetal life that occurs at an early stage of pregnancy. According to NFHS-5, 6.32% of the total pregnancies resulted in miscarriages in India. Miscarriages are particularly high for women age 15-19 years and women living in urban areas than rural areas. In India, 1.3% women drinks alcohol, 8.9% use tobacco, 3.1% have experienced violence during pregnancy. The objective of the study is to assess the impact of domestic violence, alcohol and tobacco consumption on miscarriage. The data source used in this study is the 5th round of National Family and Health Survey data of 2019-2021. Bivariate analysis with chi-square test was carried out with different socioeconomic determinants and major risk factors. Further, logistic regression with interaction terms was implemented to examine the effect of major risk factors to pregnancy. In India 6.32 % women who got pregnant in the last 5 years suffered a miscarriage. The early age groups 15-19, socially backward groups and secondary education attainment showed a higher prevalence of miscarriage. The results from logistic regression elucidates that the younger age group and the older age group, consumption of tobacco are significantly associated with higher odds of miscarriage, whereas religion, place of residence and wealth index have no significant association with miscarriage. Common study limitations reflect challenges inherent to this research, including difficulty recruiting participants early enough in pregnancy to observe miscarriage and collecting and quantifying information about alcohol consumption during pregnancy that accurately reflects use. Future studies evaluating change in alcohol use in pregnancy are needed to provide insight into how alcohol consumption prior to pregnancy recognition impacts risk.

Paper ID-246: Fertility trends and determinants in Assam among socio-economic groups, (1992-2021)

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Since 1992, Assam has seen a sharp reduction in fertility, with the total fertility rate falling from 3.5 to 1.9, below the replacement level. To date, there is no research focusing exclusively on Assam's fertility transition. Therefore, the socio-economic inequalities in fertility trends are examined in this research, and these topics are discussed. This study analyses nationally representative data to analyze Assamese fertility transition trends, particularly on socioeconomic groupings. The study's primary objective was to investigate recent fertility trends in Assam and potential scenarios. The analysis is based on the data from all five rounds of the National Family Health Survey (NFHS) in Assam. The results of the multiple linear analyses, which demonstrate the direct correlation between age and other socioeconomic factors, complement the conclusions of the bivariate analysis. To decrease fertility, family planning programs and aging also play essential roles. The trend shows that at national and state levels literacy rates are increasing over the years, which, means the percentage of uneducated women is decreasing over the years. The analysis reveals that rural women have more fertility than urban women. The findings show that as the wealth index increases the parity of women decreases in Assam as per NFHS data. The result indicates that fertility trends are decreasing among women who are using contraceptive methods. By socioeconomic groups, there is a significant difference in fertility. The key determinants of Assam's dramatic reduction in fertility were age, education, religion, language, wealth index, and media exposure. Therefore, there should be more influence on developing socio-economic factors as they directly affect age like promoting education, organizing programs related to increasing higher educational attainment, and expanding employment opportunities for women and its consequences regarding reproductive health and child health.

Paper ID-249: Role of cognitive reserve on late life cognitive functioning in Indian older adults: evidence from a panel data

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Objectives: The present study will examine the nature of association between the baseline cognitive reserve and the late life cognitive functioning in older Indian adults.

Methods: The present study utilized the longitudinal data from the Indian sample of the first and second wave of the World Health Organization (WHO) Study on Global Ageing and adult health (SAGE). Our final sample included 3,183 individuals, followed by two subsequent waves (wave-1 and 2). T-test was used to assess the significant difference between mean cognitive scores across individual, lifestyle, and household characteristics

for SAGE waves 1 and 2. Multiple linear regressions were used, in which cognitive performance was assessed at two time points with an interval of eight years (T1 and T2).

Results: A significant wave differences in cognitive performance (difference=-3; $p<0.001$) were observed in mean cognition score across the WHO-SAGE waves (1 and 2) according to various covariates (difference=-3; $p<0.001$). However, the difference in the mean cognitive score at waves 1 and 2 for the individuals with high cognitive reserve was not significant. The regression result suggests that individuals with high cognitive reserve at the baseline have significantly better cognitive functioning ($\hat{\beta}=4.88$; 95%CI: 3.50, 6.25) than those who low cognitive reserve.

Conclusion: Greater cognitive reserve, describe by education and occupation, can enhance the cognitive functioning in later life. The protective effects of cognitive reserve may provide an important mechanism for preserving cognitive function and cognitive well-being with age, in part because it can be enhanced throughout the lifespan.

Paper ID-250: Predicting the Risk Factors of Hypertension Among Indian Older Population Using Machine Learning Methods

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Introduction: Hypertension, a critical concern for older adults is responsible for 1.13 billion deaths globally. Due to the high expenses of chronic diseases, much research was done to evaluate the risk of hypertension in order to avoid more expensive management and treatment of consequences. The current study explores the new methods of machine learning and puts an effort to implement these for hypertension risk prediction using a large-scale dataset.

Data and Methods: Data for the present study were drawn from the LASI wave-1 dataset, from which 31,464 older adults aged 60 years and above were selected and for analysis, Stata/SE 16.0 and R software were used. All variables utilized in this study were categorical, and thus, percentages were used for summarization and chi-square tests to assess associations. Using the pre-processed data, two supervised machine learning models i.e., Random Forest and Logistic Regression were used for the prediction task. Accuracy, positive predictive value (PPV), sensitivity and area under the receiver operating curve (AUC) were used to assess the performance of the two prediction models.

Results: History of having cardiovascular diseases, diabetes, living arrangement, and Abdominal obesity were identified as the important predictors for hypertension. Among the machine learning methods, logistic regression had accuracy = 62.62%, PPV = 65.08% and sensitivity = 67.07% and for random forest, accuracy = 61.39%, PPV = 59.54% and sensitivity = 55.03%. In terms of AUC, compared to the random forest (61.5), logistic regression (67.4) performed better and had a significantly higher discrimination ability (Fig-2 and Fig-3).

Conclusion: In the current study, the use of prediction models to detect probable hypertensive patients has various practical consequences, including personalizing preventative measures to those who are at high risk of developing hypertension. Predictive models can aid in the enhancement of shared health decision-making for those who are at a higher risk of getting the disease by providing accurate risk communication.

Paper ID-257: Contraceptive Behaviour and Family Planning Among Tribal Tea Workers of Dooars In West Bengal

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Abstract: India is the first country to initiate a family planning approach to the world. After seven decades of the family welfare approach, only 56.5 per cent of currently married women (15 to 49 years) use any modern method of contraceptives. The present paper is a fresh attempt to provide analytical information about contraceptive behaviour among tribal tea workers of Bengal Dooars in West Bengal. Different ethnic groups of labours are residing in the tea gardens of North Bengal. Among the workers, the most common Adivasis (tribal) are Munda, Oraon, Kujur, Mahali and Asur. The under nutrition rate is high among tribal tea garden workers. Low literacy rates (48.96%) and poor income levels make them economically vulnerable. The survey was conducted in the Chengmari tea garden of Dooars in West Bengal. The Chengmari is over hundreds of years old and is also the single largest tea garden in Asia. In Chengmari, a total of 3000 permanent workers has employed in the garden and factory. From 2765 daily rated workers, a total of 123 currently married women (15 to 49 years) were interviewed. The study provides details about the family welfare perception and use of any modern method of contraception among tribal women. In Chengmari only 45 per cent of tribal women use

any modern method of contraceptives. Majority of the tribal couples selected permanent methods (female sterilization and male sterilization) of contraception. The usage of pills, IUDs and condom is very low among tea-worker couples. The research paper also explores several important sociocultural characteristics of tribal couples on contraceptive practice. Keywords: Contraceptive behaviour, Dooars, family planning, tea garden, tribal women.

Paper ID-262: Relationship between Living arrangement and social network among older adults in India

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The increasing graying of India's population raises concerns about the welfare and health status of older adults which has caused changes in the structure of families in India. Today, the family system experiences dramatic transformations marked by a gradual, yet steady, movement away from multigenerational settings to individualism (Lamb 2013). Living alone in older age is often seen as an undesirable state and as a potential health risk due to their low social networks. This research utilizes the LASI (Longitudinal Ageing Study in India, wave 1) dataset and has applied multinomial logistic regression analysis. The findings reveal that as the age of older adults increases, they are more likely to live alone. With the increasing level of wealth quintile, the risk to be left alone in later years of life also increases. Similarly, the risk ratio of older adults living alone is higher for those who frequently contact friends than older adults who live with their family. Those older adults who have a large network size of friends are more likely (1.36) to live alone than their other counterparts. Thus, older adults who hardly engage themselves in social networks and activities have poor health conditions. Policies need to focus on older adults living in isolation. Increasing the facilities of people to allow individuals to live with a family or living with spouse may help older adults from complete isolation and will provide them with a complete sense of belonging.

Paper ID-264: The pattern and extent of early childhood growth faltering in India: a cross-sectional growth trajectory analysis

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Faltered height and weight growth, particularly during the early ages, affect more than half of all children live in India. The aim of this research work is to comprehensively study the patterns of growth faltering (height and weight) in Indian children and to examine whether childhood growth faltering indicates a downward shift in entire distributions of anthropometric indicators. Using data from the four rounds of National Family Health Survey (NFHS), we described the patterns and trends in growth faltering, between 1992-93 and 2015-16. We analyze the distributions of height-for-age z-scores (HAZ) and weight-for-age z-scores (WAZ) in 3-month age intervals from 0-36 months. We estimate the mean, SD, 5th percentile, and 95th percentile of the HAZ/WAZ distribution for each age interval in each state for latter three survey rounds. We assess the association between mean HAZ/WAZ and other properties of the HAZ/WAZ distribution (i.e., SD, 5th percentile, and 95th percentile) using multilevel linear models. Results show that mean HAZ and WAZ in Indian infants at birth improved between 1992-93 and 2015-16, but they still cannot retain their mean HAZ and WAZ to what they were born with as soon as they grow up. The mean HAZ continues to decline up to the age of 23 months and thereafter, it becomes stable. Drops in mean WAZ take place throughout the first five years of life, albeit with a reduced magnitude after the age of 18 months. Results from distributional analysis suggest that declines in mean HAZ/WAZ of Indian children with age are due to downward shift in the entire HAZ/WAZ distributions, implying that children across the HAZ/WAZ spectrum experience slower growth compared to the WHO growth standard. In conclusion, that the early-life growth faltering is a whole-population condition, research and action to prevent faltered growth should focus on community wide determinants.

Paper ID-266: Migration of Older Population in India and its Reasons: Insights from census of India

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The increase in the old age population in India is poised to become one of the most significant social transformations of the twenty-first century. According to the census of India 2011, 103 million people have 60 and above age group which increases from 5.6% in 1961 to 8.6% in 2011 to the total population of India. The older populations face many challenges by migration in health care and social welfare systems, which require adjusting policies in both departure and destination communities. The living environment of older people

presents both push and pull factors that could have influenced their migration decision. Identifying these factors will help policymakers to understand the issues confronting older migrants and in creating ageing-friendly initiatives that help older adults successfully age in place. The main objectives of this paper are to examine the pattern, characteristics and reasons for older persons' migration in India. For the analysis of migration data used census data from India. Simple statistics used in the present study also used ArcGIS for making maps. More than half of the elder population in India are migrants, but it is less than young age migration in terms of total numbers. 70% of migrants are non-workers and only 23% of migrants are main workers. The dominating reasons for older migration are moved with households, others and marriage. Migration in later life is determined by later-life movement, so a better understanding of older person migration of any particular region is helpful for policymakers in various aspects of development. Keywords: Internal Migration, Ageing, Older Persons, Inter-state Migration, Migration Stream

Paper ID-271: Estimation and Forecasting of Urban Population of Male and Female for Different Regions of India Using Growth Models

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The region wise study of urbanization of India is an important phenomenon to understand the urbanization with socio-demographic characteristic of the nation. In the present study India is divided into five regions viz. Northern Region (Chandigarh, Delhi, Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab, and Rajasthan), Southern Region (Kerala, Karnataka, Tamil Nadu, Pondicherry, Andhra Pradesh, and Lakshadweep), Eastern Region (Assam, Arunachal Pradesh, Mizoram, Nagaland, Tripura, Orissa, Bihar, Manipur, Meghalaya, Sikkim, West Bengal, Jharkhand and Andaman and Nicobar), Western Region (Goa, Gujarat, Maharashtra, Dadar and Nagar Haveli and Daman and Diu) and Central Region (Uttar Pradesh, Madhya Pradesh, Chhattisgarh and Uttarakhand) based on Mitra, Mukherji, and Bose (1980). The data on urbanization for male and female of different regions of India is collected from census of India from 1901 to 2011 census. For estimation of urban population for male and female two growth models are used- Modified Exponential and Gompertz models, the parameters of the models are estimated by using Method of Partial Sums and testing of accuracy and bias is done with the help of Mean Absolute Percentage Error (MALPE) and Mean Algebraic Percentage Error (MAPE). The analysis of the study shows Western region has highest level of urbanization whereas Eastern region has lowest level, estimation and forecasting results of the model demonstrates that modified exponential model has good fit compared to Gompertz model for all the regions except male and total urban population in eastern region, measure of bias that is MAPE shows Modified exponential underestimates and Gompertz model overestimates for all regions of India except Eastern Region as this region shows overestimate for both the curves.

Paper ID- 273: Female Sterilisation in India: Examining the Role of Women's Own Decision Making and Information Given to Client

*Arjun Jana and Prof. Chander Shekhar
International Institute for Population Sciences*

India has a very high prevalence of female sterilisation compared to other countries in the world, with a prevailing situation of very low level of information about contraceptive options given to women. It is well established in demographic research that, there exists a strong association between knowledge of contraceptive methods and type of contraception chosen. Present study uses data from 3 consecutive rounds of National Family Health Survey (3, 4 & 5). The sample contains currently married women who started using the current method 5 years prior to each round of survey. Multilevel Logistic Regression and Fairlie Decomposition Model are used to analyse the effect of information given to respondents and decision-making power regarding contraceptive methods on choice of female sterilisation. Women, who are informed about available methods, have lower chance (45.8%, 37.5% & 40% for NFHS 3, 4 & 5 respectively) to opt for sterilisation after controlling all other factors. If woman is the sole decision maker for contraceptive choice, the chance of sterilisation reduces than cases where decision is taken only by husband or jointly. Information about other methods also contributes towards reducing the chance of female sterilisation over the time. Information about contraceptive methods is found to be a major factor in controlling choice of temporary or permanent method. Thus, major focus for the policy makers should be to make information regarding contraceptives more accessible for women.

Paper ID- 285: Coping Strategies Adopted During Covid-19: A Study Among Married Couples in Tamil Nadu

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Sudden outbreak created many psychological problems, social panic and it also worsen the mental health conditions. The survey was conducted in Tamil Nadu during the pandemic period to examine the COVID-19 related coping mechanisms and associated factors in the study locations. The lockdown restrictions had impacted among the significant proportion of the study populations mental health status and among them a major proportion of were cope up by engaged with family members.

Paper ID-286: Prevalence, determinants and spatial distribution of anaemia among men in rural India: Evidence from a nationally representative survey

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Anaemia among men is a significant health issue which has not been given due importance. Only a handful of studies have captured the prevalence of anaemia among men. There is dearth of evidence base on anaemia among men in India. Therefore, this study attempts to fill this research gap by examining the socioeconomic, geographic, health-related, and behavioural differentials of anaemia among rural men in India. We analysed a cross-sectional sample of 61,481 men aged between 15-54 and living in rural areas from the National Family Health Survey (NFHS-5), conducted in 2019-21. Bivariate statistics and multivariable logistic regression were employed to assess the factors associated with anaemia. In rural India, three out of ten men were found to be anaemic. Older men [49-54 years] (Odds Ratio: 1.10, 95% CI, 1.00-1.21), men without a formal education (OR: 1.36, 95% CI, 1.26-1.47), those from Scheduled Tribes (OR: 1.48, 95% CI, 1.39-1.58) and men who belonged to the poorest wealth quintile (OR: 1.24, 95% CI: 1.25-1.35) had a higher risk of anaemia. Men who were underweight were more likely to be anaemic (OR: 1.36, 95% CI: 1.30-1.43). When compared to the central region, men from the eastern (OR: 1.47, 95% CI: 1.39-1.55) parts of India had higher a risk of anaemia. The findings suggest the need to recognise anaemia among men as a public health issue. When developing policy, significant variation in socioeconomic, geographic, health-related, and behavioural factors must be taken into account. Men should also be screened on a regular basis in order to reduce the national burden of anaemia.

Paper ID- 287: Spousal Age Gap and Autonomy of Mobility Among Wives Left Behind: Kerala Migration Survey, 2018

*Niharika Awasthi, Sourav Mondal, and Dr. Sunil Sarode
International Institute for Population Sciences, Mumbai*

The autonomy of women in Kerala is among the top performing states in India from 81% women exercising it till 2016 to about 87% till 2020. Kerala is also among the topmost emigrating state of India. Kerala, contrary of the fact of being an educationally and socially advanced state, has not shown much shift in the age at marriage for women but has pushed Keralite men to marry in late 20s. So, the study here will focus on the role of both the spousal age gap and left behind women on autonomy of mobility (AOM) in them in Kerala, India. The study is based on the data of eighth round of Kerala Migration Survey held in 2018 (n=1249). Results shows that compared to the women with spousal age gap three years or less, the women with spousal age gap of ten years or more and 7 to 9 years and 4 to 6 years have higher odds of practicing AOM, especially for spousal age gap 4 to 6 years where a more than two-fold increase could be seen in the odds of women practicing AOM as compared to those with spousal age gap of three years or less.

Paper ID- 292: Understanding Men's Masculine Attitude towards Women's Roles and Activities in Rural Pune, India: A Cross-sectional Study

*Ashish Vijaykumar Pardhi
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Introduction: The United Nations (UN) fifth Sustainable Development Goals (SDGs) emphasised gender equality, empowerment of all women and girls, and ending all forms of discrimination against women and girls globally. Men's proclivity for abuse is founded on patriarchy, which enables men to be superior to and subject to women and control women's access to resources and decision-making power.

Objective: We sought to understand men's masculine attitudes toward the roles and activities of women in rural homes and society.

Methodology: We conducted a cross-sectional survey of 593 never-married men aged 18-49 years living in rural Pune, India, from January 2018 to August 2018. A fully structured interview schedule was used to collect information on sociodemographic, socioeconomic, IPV, and gender equity attitudes related questions. Based on their GEMS scores, men's attitudes toward gender equity were classified as high, moderate, and low equity attitudes. We used multinomial logistic regression to evaluate the relationship between men's opinions toward gender equity and their socioeconomic level.

Results: Overall, nearly 26% of men reported high gender-equity attitudes. According to responses on women's roles in households, more than 90% of men believe women should tolerate domestic violence to keep their families together. Almost two-thirds of men believe that wives should adhere to their husband's rules (83%). According to the adjusted multinomial regression analysis findings, the likelihood of men having high gender equity attitudes decrease with age. The adjusted multinomial odds ratio for GEM Scale indicates that men from the 21-25 age group had a high odds of gender equity attitude (AOR = 15.40; 95% CI: 4.812, 44.322) compared to men aged 30-35 years (AOR = 4.06; 95% CI: 2.010, 12.526).

Conclusion: The study's findings indicate that many men adhere to patriarchal norms which influence men's attitude toward gender equity.

Paper ID- 315: Association between physical impairment and depression among older people: do social engagement and living arrangement mediate the relationship?

*Papai Barman and Dr. Harihar Sahoo
International Institute for Population Sciences, Mumbai*

The current study examined the association between depression and physical impairment in Indian demography settings and the mediating role of social engagement, friend network, and living arrangement on the relationship using Longitudinal Aging Study in India (LASI), 2017-18. Depression score was generated using CES-D scale having 10 questions. Physical impairment was defined as the problem related to visual, hearing, mobility, ADL, and IADL. Using social activity, events and civic participation, friend circle, trust, and reciprocity, we conducted explanatory factor analysis using principal component analysis and constructed two factors related to social participation and friend network based on eigenvalue more than one. Bivariate analysis and a series of linear regressions were carried out. Further we employed multiplicative interaction to examine the mediation effect and made figures using marginal values from the interaction. Regression result showed positive association (coef. 0.15, $p < 0.001$) between depression and physical impairment, indicating older people with higher physical impairment were more likely to report depression score. It also showed negative associations between depression and social engagement, friend network, and living arrangement. Considering multiplicative interaction results, we found declined in the degree of association between depression and physical impairment. For instance, the association became 0.08 (coef. 0.08, $p < 0.05$) and 0.12 (coef. 0.12, $p < 0.01$) with social engagement and friend network, respectively. Interestingly, the positive association was found to be negative (coef. -0.06, $p < 0.001$) when we considered mediation effect of living arrangement. Following that we conducted marginal effect for multiplicative interaction and the result showed significant mediation effect of all indicators. Marginal depression score was found around 5.00 with higher physical impairment and it became 4.00 when social engagement was considered. Similar patterns were observed for the friend network and living arrangement. Achieving SDG goal 3 and healthy aging, the study emphasizes on the social engagement and living arrangement among the people.

Paper ID- 323: Contraceptive Discontinuation: A Comprehensive Study using Multiple Decrement Model

Chitra Saroj

Banaras Hindu University, Varanasi

With the increasing population use of contraceptives and family planning are trending topics of discussion. For this need of the hour, the author has done a comprehensive study on contraceptive discontinuation in India. This article describes the trend in contraceptive discontinuation in India and the multiple decrement concept is used to determine the probability of contraceptive discontinuation and contraceptive continuation in India from 1992-2020. Data used in this research was taken from the National Family and Health Survey (NFHS). The contraceptive discontinuation trend reveals that from NFHS 1 to NFHS 5 there is a decline of 15.25% in contraceptive discontinuation in India which is a good sign. It was realized that in NFHS 1 highest discontinuation of contraceptives is due to fertility-related causes and in NFHS 5 it is due to method-related causes. The age group in which the highest discontinuation occurred is 40-49 and 25-29 in NFHS 1 and NFHS 5 respectively and the force of contraceptive discontinuation is highest for the age group 40-49 in NFHS 1 and 25-29 in NFHS 5.

Paper ID- 331: Prevalence and Predictors of Depression Amongst Hypertensive Individuals: A nationally representative cross-sectional study among individuals aged 45 years and above

Ayushi Singh

International Institute for Population Sciences, Mumbai

Dr. Priyanka Dixit,

Tata Institute of Social Sciences, Mumbai

Introduction There is a dearth of data assessing the prevalence of depression among hypertensive patients in low income countries. This study's main goal was to determine the gender based prevalence of depression among hypertensive patients and identifying risk factors for depression among hypertensive adults in India using nationally representative Longitudinal Ageing Study of India (LASI) conducted during 2017-18.

Methods Using data from LASI, we selected individuals aged 45 years and older then divided them into two groups. Middle age adults (45-59 years) and older adults (60+ years). We presented the profile table of socio-demographic, lifestyle behavior, and health status information that shows the prevalence of depression and multiple logistic regression model-unadjusted odds ratios were estimated separately for males and females.

Key Findings The prevalence of depression was 10.6% overall among the sample of hypertensive adults. Middle age group (11.2%) had a higher prevalence of depression than those in the older age group (10.2%). Unemployment was a key contributor to depression in the middle age group adults whereas women who were working and older were more likely to experience depression than those who were not working. The odds of having depression were three times higher in widowed hypertension men [3.3 C. I (1.7-6.1)] than in hypertensive men who were currently married.

Conclusion Middle-aged and older adult hypertensive had statistically varied and significant rates of depression. The efficacy of hypertension control measures is directly linked to mental health issues. People who have high blood pressure are more prone to experience depression and anxiety. Overall, middle-aged persons were more likely than older adults to develop symptoms of depression. The findings and data from this study will assist policymakers in developing more target-based measures to minimize depression among hypertensive people in India.

Paper ID- 346: Does living without children associated with the poor health status between widowers and widows in their later ages?

Babul Hossain

International Institute for Population Sciences, Mumbai

Objective: This study examines the health of widowed women and men living with and without children in their later ages.

Methods: For this study, the first wave of Longitudinal Ageing Study in India (LASI), 2017-18 had been used. For health, self-rated general health (SRH) and depression had been considered for 10,719 individual samples aged 60 years and above. The prevalence of health outcomes was calculated for widowed individuals stratified by parental status (living without children: yes/no). Odds ratios and predictive margins, performing logistic regressions with interaction terms of parental status, was further calculated.

Key findings: The study finding suggested that widows living without any children had a higher prevalence of poor SRH (33.26%) and were more depressed (28.62%) than widowers living without their children (Figure 1 & Figure 2). The logistic regression analysis shows that unadjusted odds of the SRH (OR: 2.55; 95% CI: 2.41-

2.70) and depression (OR: 1.45; 95% CI: 1.31-1.61) were high among the widows living without children than their counterpart (Table 1). While even after adjusting for other covariates, the association suggested a significant association. However, the study had not found the same significant association for widowers.

Discussion: Living with children is an important social determinant of health. While among the widowed population, particularly among the widows, it becomes highly important in the absence of their spouses. More discussion is needed on whether parenthood in different phases of life strains or enhances health.

Paper ID-362: Insomnia and its treatment-seeking among the elderly in India

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International Institute for Population Sciences, Mumbai

Insomnia is a serious health problem among the elderly and, if untreated, linked to a high morbidity rate and decreased quality of life. There is no empirical study on Insomnia and its treatment-seeking exclusively among the Indian elderly population (60 plus years) using nationally representative data. This study assesses the prevalence and predictors of Insomnia and its treatment-seeking among the elderly in India. Data gathered through the nationally representative Longitudinal Ageing Study in India (LASI); Wave 1 (2017-18) was used for the analysis. Specifically, information from elderly adults aged 60 and above years for whom complete information on Insomnia was available was considered for the analysis. Respondents who voluntarily consented were interviewed in the survey. Binary logistic regression was used to check the adjusted effects of the predictor variables on Insomnia. STATA/SE v16.0 was used for the data analysis with a 5% significance level. Fifteen per cent of the elderly had Insomnia, and only 8% of them sought treatment. Increasing age, female gender, living with children and others, chronic health conditions, nutritionally underweight, physically inactive status, lack of exposure to mass media, non-tribal status, and rural residence are significantly associated with Insomnia. Male gender, exposure to mass media, being physically active, not having chronic health conditions, Hindu religion, tribal status, economically poor status, and rural residence are significantly associated with treatment-seeking for Insomnia. A sizable number of the elderly suffer from Insomnia, and the prevalence varies by socioeconomic, demographic and health status in India. Treatment-seeking for Insomnia is inadequate, enhancing the elderly's vulnerability to various morbidities. Results suggest awareness generation on the importance of Insomnia and its treatment to reduce the burden of diseases caused by Insomnia and improve elderly health. **Keywords:** Insomnia, elderly, predictors, treatment-seeking, India.

Paper ID- 364: Perceived Quality of Sterilisation Care among Women in India

Sourav Mondal

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Female sterilisation dominates the Indian family planning program, more so among the socioeconomically marginalised women. Higher acceptance of sterilisation among socioeconomically weaker sections, known for limited health care autonomy and higher amount of sterilisation regret, demands regular assessment of the quality of sterilisation care. This study assesses the perceived quality of sterilisation care received during/immediately after the operation and its correlates among women using the National Family Health Survey-5 data (2019-21). The sample of sterilised women aged 15-49 years (n=2,09,843) was considered for analysis. The outcome variable was the perceived quality of sterilisation care received during/ immediately after the operation. Binary logistic regression was used to check the adjusted effect of socioeconomic and demographic characteristics on perceived very-good sterilisation care. The analyses were done with STATA (version 15) with a significance level of 5%. Fifty-one per cent of the sterilised women received perceived very-good sterilisation care. Women who undergone sterilization in a Camp/Mobile clinic/other public facility (OR =0.85, CI = 0.82-0.90), CHC (OR =0.86, CI = 0.84-0.88) and PHC/SC/UHP/Government dispensary (OR =0.88, CI = 0.86-0.91) had lower odds of perceived very good sterilization care than those operated in a government hospital. Perceived very-good sterilisation care was significantly associated with higher education, better economic condition, urban residence, at least one surviving son, and services from a private health facility. Results suggest improved quality of sterilisation care, especially in lower-level public health facilities. Improved sterilisation care will ensure women's reproductive rights and help attain SDG 3.

Paper ID- 379: The climate change, and Statistical models to measures the trends in temperature: A study of Lucknow and New Delhi

*Dr. Arvind Kumar and Prof. D.P. Singh
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For beneficial health effects, forecasting of health impacts is important on assessments of the probabilities and anticipated consequences of climate change. Hence, study was undertaken to provides seasonal variation and statistical model to measure the trends in temperature. This study obtained the data from available website of Government of India data.gov.in. For study the nature of temperature, year was divided into different compartment as winter, pre-monsoon/summer, monsoon, post-monsoon. Linear, Logarithmic, Inverse, Quadratic, Cubic, Power Compound, S, Logistic, Growth, and Exponential statistical models were applied on observed temperature data to get the most appropriate model for prediction of maximum and minimum temperature. The average maximum temperature was varied by year in winter, summer, monsoon, and post monsoon in both Amausi, Lucknow and Palam (A), New Delhi. In winter, summer, monsoon and post monsoon, maximum temperature was observed high 25.35, 38.4, 35.96 and 29.56-degree C respectively, and minimum temperature was 7.39, 18.18, 24.25- and 11.6-degree C respectively in Amausi, Lucknow. However, in Palam (A) of New Delhi, maximum temperature was observed high 21.73, 37.11, 38.29 and 28.85-degree C respectively in winter, summer, monsoon and post monsoon, and minimum was 9.05, 20.76, 26.52- and 14.80-degree C respectively. The cubic model is fitted well for maximum temperature observed in Amusi Lucknow in winter ($R^2=0.781$), summer ($R^2=0.576$) and monsoon ($R^2=0.573$), whereas in Palam (A) New Delhi in post monsoon ($R^2=0.879$), summer ($R^2=0.798$) and for minimum temperature observed in post monsoon ($R^2=0.886$) and summer ($R^2=0.775$). Linear model is fitted well for post monsoon maximum temperature ($R^2=0.943$) and minimum temperature ($R^2=0.913$), minimum temperature observed in winter ($R^2=0.630$), and summer ($R^2=0.779$) in Amausi, Lucknow. In Amausi, Lucknow, maximum temperature was high in summer, whereas in Palam (A), New Delhi was high and almost same in summer and monsoon. Minimum temperature was high in monsoon in both Amausi, Lucknow and Palam (A) New Delhi regions.

Paper ID- 381: Premature menopause among women in India: Evidence from National Family Health Survey-V

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Premature menopause refers to the occurrence of menopause before the age of 40 years. Women experiencing premature menopause, either due to biological or induced reasons, have a longer duration of exposure to adverse health consequences when compared to those who undergo menopause at a later age. Despite the fact that premature menopause has a profound effect on the health of women, there has been limited study on this issue. Therefore, this study attempted to determine the prevalence and associated factors of premature menopause among women aged 25-39 years in India, using data from the National Family Health Survey-V (NFHS-5), conducted during 2019-2021 in India. Descriptive statistics along with bivariate analysis and multivariable analysis were used to carry out the results. The analysis revealed that the prevalence of premature menopause in India was 3.2 percent, of which the prevalence of natural and surgical premature menopause was 1.6 percent each. Among the states, Bihar reported the highest prevalence of premature menopause as well as surgical premature menopause, while Karnataka showed the highest prevalence of natural premature menopause. In addition, factors like education, place of residence, wealth index, smoking, parity, age at child bearing, use of hormonal contraceptives, sterilization and BMI were found to be associated with premature menopause in this study. A sizeable proportion of women in India are attaining menopause prematurely. Unless due attention is given to this matter, it will emerge as a major problem in India in the future. The study emphasized the need for further research to enhance knowledge on the problems of premature menopausal women in different socio-cultural settings in India.

Paper ID-390: Association of Pain and Depression among middle-aged and older adults of India

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Background: India is ageing and it is estimated that the population aged 45 and above will account for over 40% of the population by 2050. Ageing is associated with a high burden of chronic diseases. Epidemiological studies have shown that pain and depression are closely related. Pain and depression can often form a vicious cycle in which pain intensifies depression symptoms and the subsequent depression worsens pain feelings. This study aims to examine the association between pain and depression among middle and older adults in India.

Data: This study uses the individual level data from the Longitudinal Ageing Survey of India (LASI), Wave 1, 2017-18. This study is restricted to 59,428 individuals who have responded to all the variables of interest.

Methods: Descriptive statistics were reported by proportions or mean. Independent chi-square tests were used to compare the categorical variables between those with and without pain and depression. The estimates for the prevalence of depressive symptoms were adjusted for age-sex considering the national age and sex composition as references. The logistic regression model was used with depression as the outcome variable and pain and socio-demographic covariates as predictor variables.

Results: Approximately 32% (31.97%; 95% CI, 30.53-33.42) of the middle-aged and older adults with pain were having depressive symptoms and the prevalence also varies with socio-demographic characteristics. The predicted probability of depression among those with pain was 0.31 (95% CI, 0.30-0.33) compared to 0.25 (95% CI, 0.24-0.26) among those without pain.

Paper ID-402: Assessment of Deaths with Co-morbidity and COVID-19 in Rural Northern India: A Retrospective Survey using Verbal Autopsy

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Objectives: The mortality toll from the Covid 19 epidemic significantly increased, mostly among people who already had co-morbid conditions of some sort. The direct cause of mortality during the pandemic could not be determined since deaths in rural regions were not registered. Our study focuses to identify the cause of death among deceased persons and stratifying them by their comorbidity status.

Study Design: A cross-sectional study was done using the Verbal Autopsy (VA) tool. 143 households from community members where any death occurred were asked to fill out the VA form.

Methods: Stratification was done using the presence or absence of comorbidities, a number of co-morbidities, and suspicious corona deaths. With 95% confidence intervals, the relative risk was used to calculate the mortality risk for corona suspected deaths in the years 2020 and 2021.

Results: The rural region of northern India was badly affected by the corona pandemic as the data witnessed that the suspected corona death was 6.63 times higher in people with tuberculosis (95% CI, 0.91-47.83), 2.09 times higher in people with high blood pressure (95% CI, 0.96-4.56) and 5.06 times higher in people with asthma (95% CI, 1.27-20.18). The proportion of men who died from comorbidity (76.1%) was higher than the proportion of women (69.2%).

Conclusion: Among suspected COVID-19 cases, deceased with any comorbidity yield poorer outcomes than those without. Corona symptoms associated with any comorbidity provide poorer outcomes in terms of causalities.

Paper ID-394: Menstrual Hygiene Management and Reproductive Tract Infections

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Menstruation is a natural physiological phenomenon which every woman and adolescent girl has to go through every month. Every month, 1.8 billion people across the world menstruate. The onset of menstruation means a new phase and new vulnerabilities in the lives of adolescents. Yet, many adolescent girls face stigma, harassment and social exclusion during menstruation. Gender inequality, discriminatory social norms, cultural taboos, poverty and lack of basic services like toilets and sanitary products can all cause menstrual health and hygiene needs to go unmet. It is a topic which is rarely discussed openly and for this reason menstruation is surrounded by many misbeliefs and misconceptions. Due to this misconception, women and girls were not able to manage their menses hygienically and which leads to many reproductive tract infections. The objective of the research was to compare factors associated with menstrual hygiene management (MHM) among women in north India and its effect on reproductive tract infections and this study was planned to assess knowledge, beliefs, and source of information regarding menstruation, and also to assess hygiene among them. The data was collected with the help of Google Forms. 320 women and adolescent girls between the age group of 11 to 50 years participated in the study. The exploratory research design was used to explore the study. The study found that most of the women were practising the improved methods of menstrual hygiene management like biodegradable sanitary pads, tampons, menstrual cups etc but the poor. The study also showed that more than half of the respondents were suffering from one of the below written RTIs: Itching/irritation inside the vagina, Foul-smelling vaginal discharge, Pain/burning sensation while passing urine, and Excessive white discharge from the vagina. The study concluded that although nowadays women are using improved menstrual hygiene products they are still lagging in the correct information about the usage of these menstrual products.

Chandrasekaran Award Presentation Abstract

SNO:1 The burden of unpaid activities on gender equality in Indian states

Aditi B. Prasad, and Aparajita Chattopadhyay

In the context of traditional Indian society, where women's activities are undervalued, this study explores the time use pattern of women and the burden of unpaid activities. The unpaid work of women is strongly associated with gender inequality. To understand the effect of unpaid work on gender inequality and society, this study attempts to create a Modified Gender Inequality Index, which gives a snapshot of gender inequality in a state or country. The findings reveal that women work longer than men in general and tend to face a shortage of time for indulging in some leisure activities. Loss in achievements due to gender inequality is the highest in the northern states of India. The study provides valuable insights into a less researched topic of time use patterns in India and amplifies the need for interventions in improving gender equality with respect to the burden of unpaid activities borne by women.

SNO:2 ASSESSMENT OF CHILDHOOD UNDERNUTRITION IN INDIA USING NFHS 3 AND NFHS 5

Aparna B

India is one among the many countries where malnutrition is a major underlying cause of child mortality and developmental challenges (De and Chattopadhyay 2019). According to Global Hunger Index (GHI) 2022, India ranked 107 out of the 121 countries. The fifth round of National Family Health Survey has shown only modest improvements in different nutrition indicators, pointing the slow rate of progress. Malnutrition trends across the NFHS surveys reveals that wasting or extremely thin, the most visible form of malnutrition, has either increased or remained same over the period. The National Nutrition Mission (2018) strived to reduce the level of stunting, undernutrition, anaemia and low birth weight babies by 2022. Stunting and wasting are the two main nutritional indicators of public health concerns in India. Undernutrition in children is usually estimated using internationally accepted conventional anthropometric indices: stunting, wasting and underweight. In a country like India, where undernutrition is a major and serious health concern, a comprehensive measure is necessary to identify the true burden of childhood undernutrition. CIAF is such a measure that gives the exact burden of childhood undernutrition; besides, single, dual and multiple failures can also be estimated from CIAF, which enables to demonstrate the childhood undernutrition in a wider perspective. It is important to study the burden of stunting, wasting and underweight with respect to the total undernutrition and to identify the differences in their severity over the period, that enable to address the most relevant anthropometric failure which requires immediate concern. Moreover, the assessment of socio – economic disparities is necessary to seek the pockets of undernutrition and changes in it from 2005 – 06 to 2019 - 2021. The objective of the study is to estimate and analyze the prevalence of childhood undernutrition over the past 15 years using composite anthropometric indices and identify the determinants associated with it. Data from the third (2005 – 2006) and fifth (2019 – 2021) rounds of National Family Health Survey were used for the study. Univariate distribution tables give the percentage distribution of background characteristics and bivariate distribution tables gives the association of variables. The significance of the variables was tested using the chi-square test and logistic regression analysis were utilized to find the significant determinants of the childhood undernutrition. The independent variables were categorized into socio – economic, child and maternal factors. CIAF highlights the unexplored groups of childhood undernutrition. The results shows that according to conventional indices, 48 percent and 43 percent of the children were stunted and under weighed respectively in NFHS 3, which has declined correspondingly to 36 percent and 31 percent in NFHS 5 and the prevalence of childhood wasting remained unchanged. 61 percent of the children were undernourished in NFHS 3 by CIAF which had declined to 52 percent in NFHS 5. The subgroups of CIAF (B to F & Y) explains the single, dual and multiple failures in children under five years of age; however, the group A counts the well-nourished children or the children with no anthropometric failure. The proportion of well-nourished children increased from 38.6 percent in NFHS 3 to 48 percent in NFHS 5. The proportion of children with multiple failures declined from nine percent to five percent. Considering the dual failures, even though the proportion of children with both stunting and underweight declined from NFHS 3 to NFHS 5, it remained to be the most prevalent form of childhood undernutrition in both the data and the prevalence of childhood wasting and underweight increased over the period. In case of single failures, stunting is the most prevailing and underweight is the least prevailing childhood anthropometric failure in both the data and when the prevalence of childhood wasting increased, that of stunting decreased and underweight remains unchanged over the period. Stunting Index, Underweight Index and Wasting Index were also calculated to find

the severity of stunting, underweight and wasting with respect to the total undernutrition. When the severity of childhood stunting and underweight decreased that of wasting increased over the study period. Mothers of higher age groups, who had no education, poor standard of living, those from rural areas, ST caste group, Muslim or Hindu religious group had higher rates of undernourished children; whereas mothers of 15 – 19 age group had the highest prevalence of childhood wasting in both the data. The rates of childhood undernutrition increased with increase in birth order and decrease in their HB level. Over the study period, the prevalence of undernourished children increased among mothers who were overweight, obese and who had higher education. These results manifest the need of CIAF over the conventional anthropometric indices.

SNO:3 The burden of unpaid activities on gender equality in Indian states

Aditi B. Prasad, and Aparajita Chattopadhyay

Background

The absolute burden of CVD has increased globally and has shifted heavily toward low- and middle-income countries (LMICs) such as India, mainly because of population growth and aging. Therefore, the study aims to provide a comprehensive estimate of the burden due to cardiovascular diseases of older adults in India and its major states during 2017-18.

Methods

The study used multiple data sources including the report of the technical group on population projections by national commission on population ministry of health & family welfare, Sample registration system (2018), MCCD reports (2018) and Longitudinal Aging study in India (LASI Wave 1, 2017-18). The overall burden of CVD in major states of India during 2017-18 was assessed using the disability-adjusted life year (DALY), a time-based measure that integrates years of life lost due to premature mortality (YLLs) and years of life lost due to time lived in states of less than full health, or years of healthy life lost due to disability (YLDs). One DALY is equivalent to the loss of a healthy life year.

Results

The result clearly indicated that there were substantial gender differences in the burden of CVDs. Contrary to the prevalence sex pattern, DALY for CVD among older adults was higher for females than males in India during 2017-18. The analysis revealed that the disability adjusted life years (DALY) from the leading cardiovascular diseases in India varied widely between the states. An examination of disability-adjusted life years (DALY) of the various states showed that women contribute more to the DALY from CVD except in the case of Jharkhand. The DALY of CVD among both male and female older adults was highest in Central states of Madhya Pradesh, south Indian states of Tamil Nadu, Andhra Pradesh, and northern states of Haryana and was lowest in north-eastern states of Assam, Eastern states of Jharkhand and Northern states of Uttar Pradesh. In Himachal Pradesh, the gender differences in DALY was highest among the states. Variations in cardiovascular disease burden between states reflected the different stages of epidemiological transition of cardiovascular disease. The study also demonstrated a significant relationship between DALY from CVD and the socioeconomic status of individuals. The result indicated that age and sex had a significant association with DALY due to CVD

Conclusion

The recent study's findings provide an evidence of a profound gender gap in burden of CVD existence in India, highlighting an urgent need to understand the drivers of these disparities and address them. The state-specific findings in this present study can also serve as a useful reference for informing policies and programs to plan more effectively the prevention and treatment of cardiovascular diseases in each state of India, which will facilitate progress towards achieving national and global targets for cardiovascular disease reduction.

Key words: Cardiovascular disease, DALY, Older adults, India.

SNO:4 Years of life lost on roads in India: Analysis of gain in life Expectancy after elimination of road traffic fatalities

Prakash Kumar

Road traffic fatalities is one of leading cause of premature mortality around the globe, and India is the leading country in road traffic fatalities contributing around a fifth of total fatalities globally. In India, there are studies estimating the burden of road traffic accidents using DALYs, however there is no literature on gain in life expectancy after elimination of the cause. Therefore, the current study was aimed to estimate the gain in life expectancy after elimination of road traffic as a cause of death in India and states over time. For the current Study, age-sex specific data on number of mortality due to road traffic accidents was collected from the GBD study dataset. The impact of road accident was assessed using the multiple-reduction life table and single reduction life table techniques based on simple life table approach. Road traffic fatalities caused a reduction of 35.9 years per 100 person-years in 2018, which increased from 33.3 years in 2001 with and growth rate of 7.9% during the period. After the elimination of mortality due to road traffic accidents, the gain in life expectancy was 0.524 years among males and 0.172 years among females in India during 2018. The gain in life expectancy at birth after the elimination of road traffic fatalities was 0.474 years for males and 0.168 years for females during 1990. In 2018, Punjab showed the highest reduction in life expectancy at birth by 0.571 years, and was lowest in Meghalaya (reduction of 0.21 years). Eleven states have shown a decline in the reduction of life expectancy at birth due to road traffic accidents. The road traffic fatalities are very high in India and are still increasing in many states. There is need to focus on road safety from both road infrastructure and manufacturing as well as road users.

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