CURRICULUM VITAE

Dr. Mukesh Ranjan
Assistant Professor
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Career Objectives

To make a career in the field of Statistics, Demography and population research. To work in an institute/organization where my knowledge and expertise will be advantageous for the growth of the organization and myself.

Education

- PhD in Population studies from International Institute for Population Sciences, Mumbai.(Degree awarded 10th May 2019)
- MPhil.in Population Studies from International Institute for Population Sciences, Mumbai, India.(2013-14) (7.53)
- Master's in Population Studies (MPS) from International Institute for Population Sciences, Mumbai, India.(2012-13) (6.41)
- MSc. (Statistics) from Patna University, Patna, India. (2006-2008)(73.5%)
- BSc. (H) (Statistics) from Hindu College, Delhi University, New Delhi, India. (2003-2006)(55.6%)
- Class 12 from Pitts Modern School Gomia, Jharkhand, India (2001)(76.2%)
- Class 10 from DAV Public School, Sawang, Jharkhand, India (1999) (75.8%)

Area of Interest

- Mortality Studies, Mathematical Demography, Maternal & child health, Health Inequality, Econometrics, Multivariate analysis

Awards/grants

- Awarded gold medal in MSc. (Statistics) for securing first position**,** Patna University, Patna, Bihar, India.
- Awarded gold medal in MPhil. (Population studies) for securing first position, International Institute for Population Sciences, Mumbai, India.
- Awarded Prof. K.B. Pathak award for outstanding published paper entitled "**Caste Differentials in Death Clustering in Central and Eastern Indian States**" at 39th Annual Conference of IASP held at Banaras Hindu University, Varanasi, Uttar Pradesh (2018).
- Qualified National Eligibility Test (NET) for lectureship in Population Studies, conducted by University Grants Commission, 2013, New Delhi, India.
- Awarded Government of India Fellowship for MPS Programme at International Institute for Population Sciences, Deonar, and Mumbai, India, 2012-13.
- Awarded Government of India Fellowship for M.Phil. at International Institute for Population Sciences, Deonar, Mumbai, India, 2013-14.
- Awarded Government of India Fellowship for PhD at International Institute for Population Sciences, Deonar, Mumbai, India, 2015-2019.

Term Paper/Dissertation

- Done MSc.(Statistics) dissertation on topic "**To check the level of awareness about HIV/AIDS among rickshaw pullers of Patna City**"
- Done MPS Term Paper on Topic "**Infant and Child mortality differentials among Tribal and Non- Tribal Population of Central and Eastern India"** under the guidance of Dr. L.K Dwivedi, Dept. of Mathematical Demography and Statistics, IIPS, Mumbai, India.
- Done MPhil. Dissertation on Topic **"Infant mortality and death clustering among the tribes of central and eastern Indian states"** under the guidance of Prof. H Lhungdim,Dept. of Public Health & Mortality Studies, IIPS,Mumbai, India.
- Done PhD. Thesis on Topic **"Infant Death Clustering in India: Levels, Trends and differentials, 1992-2016"** under the guidance of Dr. L.K Dwivedi, Dept. of Mathematical Demography and Statistics, IIPS, Mumbai, India.

Conferences & Seminars

- Attended IIPS seminar on "Population, Health and Inclusive Development in India" at Ahmedabad, India.
- Attended Asian Population Association Conference, 2015, Kuala Lumpur, Malaysia.
- Attended National conference, 13th Indian Association for Social Sciences and Health (IASSH) conference, Thiruvananthapuram, Kerela, India,(10-12 December),2015

- Attended 35th Indian Society for medical statistics (ISMS) conference held in Department of Biostatistics and Health Informatics,Sanjay Gandhi Postgraduate Institute of Medical Statistics, Lucknow,(02-04 November),2017.

Workshop attended

- Five day Monitoring and Evaluation worshop sponsored by United Nations Population Fund (UNFPA) conducted by International Institute for Population Sciences Alumini Association (IIPSAA).

- One day pre-conference workshop on "Systematic Review and Meta-Analysis" held in Department of Biostatistics and Health Informatics,Sanjay Gandhi Postgraduate Institute of Medical Statistics, Lucknow,(02-04 November), 2017.

Computer Proficiency: STATA, SPSS, R, MINITAB, MLwiN, MS OFFICE (Word, Excel and Power Point), MORTPAK,

Work Experience

- Worked for 7 months 24 days (12th May 2014 to 5th Jan 2015) in the capacity of Project Officer in District Level Household Survey-4 (DLHS-4) at IIPS, Mumbai, (a Large Scale Survey conducted by Ministry of health and Family welfare (MoHFW) in India where IIPS, Mumbai is acting as a nodal body to conduct the survey in the country).
- Working from 13th August 2018 to 7th June 2019 in the capacity of Assistant Professor (Temporary) in the Department of Statistics, School of Mathematics, Statistics & Computer Science, Central University of South Bihar (CUSB), Panchanpur, Gaya, Bihar, India.

Invited lectures/Teaching Experience

- Invited as Resource Person for the workshop on SPSS for the masters student at Tata Institute of Social Sciences,Mumbai held between 15 to 18 June 2015
- Invited as Resource Person for the workshop on SPSS for the masters student at Tata Institute of Social Sciences,Mumbai held between 20 to 21 June 2016
- Invited for lecture on Advanced Regression Methods and Data Analytics during 5 day training programme at IIHMR University, Jaipur Rajasthan, India. during July 31 to August 4,2017 to train the Afghan Nationals.
- 12 hours of Teaching Experience of teaching Research Methodology to MPhil.(Population Studies) students at IIPS,Mumbai.
- 20 hours of Teaching Experience of teaching Statistical Inference with STATA software to MSc.(Biostatistics) students at IIPS,Mumbai.

Dissertation Guidance

- Supervised 3 students of MSc.(Statistics) in their successful completion of MSc. Project work on topic entitled "Assessment on Physical Fitness and Nutrition development among CUSB People"

Administrative Experience

- Worked as a placement cell coordinator at CUSB. All seven students of MSc.(Statistics) 1st year have been successfully selected for 2 months internship programme, one at Ministry of Statistics and Programme Implementation (MOSPI) and rest six at Sigma Research and Consulting ,South Extension I, New Delhi 110 049. India.

Members

- Student member International Institute for Population Sciences Alumini Association (IIPSAA).
- Student Member of International Union for the Scientific Study of Population (IUSSP)
- Student Member Asian Population Association (APA)
- Life time member of Indian Association for Social Sciences and Health (IASSH).

Field Experience

- Collected primary data in MSc. (Statistics) (for my report writing as a part of the MSc. course) from the rickshaw pullers of Patna City in order to check level of awareness about HIV/AIDS among them.
- Collected Primary data from women in Mumbai slums for checking their perceptions towards employment. Data was collected as part of my individual research.

Foreign visits

- Malaysia

Personal Details

Name	Dr. Mukesh Ranjan
Father's Name	Sri Dayanand Prasad
Date of Birth	31-Aug-1984
Sex	Male
Marital Status	Married
Number of children	One
Nationality	Indian
Languages	Hindi, English

This to certify that all the information given in this Curriculum vitae (CV) are correct to the best of my knowledge and belief.

Date: 06/07/2019

Place: Patna, Bihar, India. **Signature**

List of Publications

1. **Ranjan, M.,** Dwivedi, L. K., & Mishra, R. (2018). Caste differentials in death clustering in central and eastern Indian states. *Journal of biosocial science*, *50*(2), 254-274.
2. **Ranjan, M.,** Dwivedi, L. K., Mishra, R., Brajesh (2017). Infant mortality differentials among the tribal and non-tribal populations of Central and Eastern India. *International Journal of Population Studies*, *2*(2), 26-43.
3. **Ranjan M,** Dwivedi L.K. (2019). Death clustering in India: Levels, trends, and differentials, 1992–2016. *Indian J Child Health*. 2019; April 15 [Epub ahead of print].
4. **Ranjan M,** Dwivedi L.K.(2018) Infant Mortality among Tribes Population in India: Regional Analysis from Multiple Surveys. *Studies of Tribes and Tribals*, 16(1-2),11-23
5. Bhatia, M., Dwivedi, L. K., **Ranjan, M.**, Dixit, P., & Putcha, V. (2019). Trends, patterns and predictive factors of infant and child mortality in well-performing and underperforming states of India: a secondary analysis using National Family Health Surveys. *BMJ open*, *9*(3), e023875.
6. Brajesh, Shekhar C, **Ranjan M**, Chaurasia H.(2017). Effect women's empowerment on reproductive and child health services among South Asian women. *Demography India, 46(2):95-112.*
7. Dwivedi, L. K., Banerjee, K., Jain, N., **Ranjan, M.**, & Dixit, P. (2018). Child health and unhealthy sanitary practices in India: Evidence from Recent Round of National Family Health Survey-IV. *SSM-Population Health*.
8. Brajesh, **Ranjan M.,** Nagadeve D.A., Chander Shekhar (2016) Determinants and differentials of postpartum amenorrhea associated with breastfeeding among women in Bihar, India. *Int J Reprod Contracept Obstet Gynecol. 5(1):154-165*.
9. Phukan, D., **Ranjan, M.,** & Dwivedi, L. K. (2018). Impact of timing of breastfeeding initiation on neonatal mortality in India. *International breastfeeding journal*, *13*(1), 27.
10. Bhatia, M., **Ranjan, M.,** Dixit, P., & Dwivedi, L. K. (2018). Mind the gap: temporal trends in inequalities in infant and child mortality in India (1992–2016). *SSM-population health*, *5*, 201.
11. Dwivedi, L. K., & **Ranjan, M.** (2018). Sibling Death Clustering Among the Tribes of Central and Eastern India: An Application of Random Effects Dynamic Probit Model. In *Demography and health issues* (pp. 337-355). Springer, Cham.
12. Brajesh, Raj, D., **Ranjan, M.** (2016). Real Contribution of Autonomous Factors of Women's empowerment For Women's Rights In India. *International Journal of Research in Social Sciences*, *6*(1), 358-370.
13. International Institute for Population Sciences (IIPS), 2014.District *Level Household and Facility Survey (DLHS-4), 2012-13:India.Arunachal Pradesh*: Mumbai: IIPS.
14. International Institute for Population Sciences (IIPS), 2014.District *Level Household and Facility Survey (DLHS-4), 2012-13:India.Tamil Nadu*: Mumbai: IIPS.

List of Publications (In principle accepted for publication)

1. Death Clustering among the tribes of Central & Eastern Indian States, published as edited book chapter: Chapter-9, Book Title :Child Health and Nutrition in India, Editors: Sanjay Prasad, S Parasuraman and Suman Vaishnav, Publisher: Prabhat Prakashan, New Delhi, 1st Edition,2017.

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CASTE DIFFERENTIALS IN DEATH CLUSTERING IN CENTRAL AND EASTERN INDIAN STATES

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International Institute for Population Sciences, Deonar, Mumbai, India

Summary. This study assessed caste differentials in family-level death clustering, linked survival prospects of siblings (scarring) and mother-level unobserved heterogeneity affecting infant mortality risk in the central and eastern Indian states of Jharkhand, Madhya Pradesh, Odisha and Chhattisgarh. Family-level infant death clustering was examined using bivariate analysis, and the linkages between the survival prospects of siblings and mother-specific unobserved heterogeneity were captured by applying a random effects logit model in the selected Indian states using micro-data from the National Family Health Survey-III (2005–06). The raw data clustering analysis showed the existence of clustering in all four states and among all caste groups with the highest clustering found in the Scheduled Castes of Jharkhand. The important factor from the model that increased the risk of infant deaths in all four states was the causal effect of a previous infant death on the risk of infant death of the subsequent sibling, after controlling for mother-level heterogeneity and unobserved factors. The results show that among the Scheduled Castes and Scheduled Tribes, infant death clustering is mainly affected by the scarring factor in Jharkhand and Madhya Pradesh, while mother-level unobserved factors were important in Odisha and both (scarring and mother-level unobserved factors) were key factors in Chhattisgarh. Similarly, the Other Caste Group was mainly influenced by the scarring factor only in Odisha, mother-level unobserved factors in Jharkhand and Chhattisgarh and both (scarring and mother-level unobserved factors) in Madhya Pradesh. From a government policy perspective, these results would help in identifying high-risk clusters of women among all caste groups in the four central and eastern Indian states that should be targeted to address maternal and child health related indicators.

Introduction

Globally, 75% of all under-five deaths or equivalently around 4.5 million deaths occurred within the first year of life in 2015 (WHO, 2015). Twenty-one per cent of these

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Phukan et al. International Breastfeeding Journal (2018) 13:27
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International Breastfeeding Journal

RESEARCH Open Access

Impact of timing of breastfeeding initiation on neonatal mortality in India

Deepika Phukan[1*], Mukesh Ranjan[2] and L. K. Dwivedi[2]

Abstract

Background: Neonatal mortality defined as a death during the first 28 days of life and is the most critical phase of child survival. In spite of the strong evidence supporting immediate and long term health benefits of timely initiation of breastfeeding in India, only two-fifths (44%) of children receive breastfeeding within 1 h of birth. This study aims to examine the role of a behavioral factor i.e., timing of initiation of breastfeeding on neonatal deaths.

Methods: Data from India Human Development Survey-II (IHDS-II), 2011–12, a nationally representative, large scale population-based dataset has been used. Sample Registration System (SRS) has been used to examine the rate of change in Neonatal Mortality Rates from the year 2011 to 2015. District Level Household & Facility Survey (DLHS-4), 2012–2013 and Annual Health Survey(AHS), 2012–13 data have been used to show the district wise distribution of women who have breastfed their child within 1 h of birth. Population Attributable fraction has been computed using binary logistic regression model for various scenarios of breastfeeding within first hour of birth.

Results: Less than one fourth (21%) of children were breastfed within 1 h of birth across the different districts of India, which varies from the lowest 15% in Sarasvati of Uttar Pradesh state to the highest 94.6% in Thiruvananthapuram of Kerala state. Findings suggest when women did not breastfeed their newborn within the 1 h after his birth, the odds of neonatal deaths were increased by nearly threefold (OR 2.93; 95% CI 1.89, 4.53) in comparison with those neonates who have breastfed within 1 h of birth. Population Attributable Risk estimates that the risk of the neonatal deaths could be reduced to a maximum of 15% when all babies would expose to early breastfeeding from the present level of breastfeeding.

Conclusions: We found that timely initiation of breastfeeding is beneficial for child survival within the first 28 days of birth, including all causes of mortality. Therefore, efforts in formulating an effective policy focusing on early initiation of breastfeeding are needed.

Keywords: Breastfeeding, Neonatal mortality, IDHS-II, Binary logistic regression, Population attributable risk

Background

Globally, around 5.6 million children died before reaching their fifth birthday, of those, 2.6 million (or 46%) died in the first 30 days of life [1]. Approximately 7000 newborns died every day, most of which occurred within first 7 days after birth, with about 1 million dying on the first day and close to 1 million dying within the next 6 days in 2016 [2]. Most of the neonates died in Southern Asia (39%), followed by sub-Saharan Africa (38%). Half of all newborn deaths occurred in the following five countries: India, Pakistan, Nigeria, the Democratic Republic of the Congo and Ethiopia [1]. Over the past 25 years, the age under-five mortality rate dropped from 93 deaths per 1000 live births in 1990 to 41 in 2016. In India, in the year 2015, infant mortality accounts for 37 infant deaths per 1000 live births, of which 67.8% infants (25 per 1000 live births) died in the first month of births [3]. In 2013, India recorded the highest absolute number of neonatal deaths of any country, nearly 0.75 million [4]. Despite a significant change in

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Article

Mind the gap: Temporal trends in inequalities in infant and child mortality in India (1992–2016)

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1. Introduction

Reduction in Infant and under 5 deaths has been a priority across the developing world but has met with varying success both between and within countries (Boerma et al., 2008). In spite of its economic progress and home to more than 18 percent of the world's children (UN, 2017), India has made slow progress with respect to child mortality as compared to other countries in the region (WHO, 2016). India finds herself 48th out of 89 on infant mortality rate (UN, 2017) and has slipped down to 131 among the 188 countries ranked in terms of human development (UNDP, 2016). It is therefore not surprising that India failed to achieve its MDG 5 target which has huge implications as almost 20% of world's infant deaths are experienced in India (UNICEF, 2017).

Infant mortality rates and U5MR in India have declined at a gradual pace from 86 per thousand live births and 119 per thousand live births in 1992 to 41 per thousand live births and 50 per thousand live births in 2016 respectively (IIPS, 1995; IIPS & ICF, 2017). However, such averages mask the inequalities that exist across socio-economic groups, gender, educational status, place of residence, religion, caste, etc. For example, with respect to socio-economic groups, U5MR among the WI groups (poorest vs. richest) varied from 118 to 39 in 2005-6 (IIPS and Macro, 2007). Similarly, children born in tribal area experiences U5 mortality one and half times than those of other groups (Baru & Bisht, 2010). More recent data shows that although the under-five mortality rate is estimated at 39 at national level, it varies from 43 in rural areas to 25 in urban areas. Among the bigger States/UTs, it varies from 11 in Kerala to 55 in Madhya Pradesh (SRS, 2016). Similarly, at the national level, IMR is reported to be 34 and varies from 38 in rural areas to 23 in urban areas (SRS, 2016).

Although it is common to see studies that analyse health inequalities in general and inequalities in child mortality between rich and poor in specific, there are few studies that take into consideration the temporal trends while addressing inequalities in child mortality (Shaw et al., 2005). Therefore the purpose of this paper is to analyse the trend in inequalities in IMR in Indian states over 1992–2016 time frame using NHFS 1 to 4 survey data. This paper uses IMR for further analysis (e.g. decomposition analysis) as it has proved itself as a sensitive indicator for assessing the overall development of a country over number of years (Stockwell et al., 1988; Baru & Bisht, 2010).

India, with a population of 1.34 billion (UN, 2017) is one of the fastest growing economies in the world and makes an interesting case-study for analysing inequalities in child mortality. With its economic liberalisation policy on the one hand and number of pro poor policy initiatives within the health sector, it would be useful to examine the trends in inequalities in child mortality. In past, number of authors have suggested that inequalities are increasing in India both between and within states and across socio-economic groups (Deaton & Drèze, 2009; Baru & Bisht, 2010). With the latest NHFS - 4 series data for 2015-16 being recently released in public domain, it would be timely to examine temporal trends in inequalities in child mortality in India.

2. Methods

The data used in this study was taken from National Family Health Survey series from 1992 and includes the recent round conducted in India in 2015-16 (NFHS-4) and like previous surveys provides information on population, health and nutrition for every State / Union territory in India. However, district- level data has been provided for the first time in this latest survey. All women age 15–49 and men age 15–54 in the selected sample households were eligible for interviewing. NFHS-4 gathered information from 601,509 households, 699,686 women, and 103,525 men (IIPS & ICF, 2017). All analysis in the present paper was performed on kids file which carries the information about retrospective maternity history of child birth and death that took place five years prior to the survey date. In the present analysis, there were 259,627 births born between 2010 and 2016. Never married woman and multiple births have been dropped from the sample so in total there remained 254,938 births for final analysis. We have also merged the sample for Union territories into their nearby states like Andaman and Nicobar Island and Pondicherry was merged into Tamil Nadu; Dadar & Nagar Haveli was merged to Maharashtra; Daman & Diu to Gujarat;

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Chapter 28
Sibling Death Clustering Among the Tribes of Central and Eastern India: An Application of Random Effects Dynamic Probit Model

Laxmi Kant Dwivedi and Mukesh Ranjan

28.1 Introduction

The Infant mortality rate (IMR) has been considered as a highly sensitive measure of population health. This reflects the apparent association between the causes of infant mortality and other factors that are likely to influence the health status of populations such as their economic development, general living conditions, social wellbeing, rates of illness, and the quality of the environment (Whitehouse 1982). There were around 4.6 million deaths (74% of all under-five deaths) occurred within the first year of life (WHO 2011). Globally, IMR has decreased from an estimated rate of 63 deaths per 1000 live births in 1990 to 34 deaths per 1000 live births in 2013 (UNICEF 2014).

One of the targets under United Nations Millennium Development Goals (UNMDGs) is to reduce IMR by two-thirds between 1990 and 2015. For India, it translates into a goal of reducing IMR from 88 infant deaths per thousand live births in 1990 to the level of 29 infant deaths per thousand live births by 2015. The recent figure of IMR for India, is 37 infant deaths per 1000 live births (Sample Registration System (SRS) 2015). Hence, it clearly reflects that India lagged far behind in achieving mortality related UNMDGs goal. In India, the issue of high IMR exists with a lot of regional variations across the states. For example, among the bigger states and UTs, IMR varies from 12 in Kerala to 50 in Madhya Pradesh (SRS 2015). In view of these statistics, child survival in India needs sharper focus. This includes better managing neonatal and childhood illnesses, improving child survival, particularly among vulnerable communities and we need a different approach to tackle the IMR & under 5 mortality rate (U5MR). Survival risk remains a key challenge for the disadvantaged who have little access to reproductive and child health services.

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Original Article

Death clustering in India: Levels, trends, and differentials, 1992–2016

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ABSTRACT

Background: India and many of its bigger states could not achieve the national goal related with child health based on 4th UN Millennium Development Goal. There is a need to look for different approaches which deal with infant mortality. Literature emphasizes clustering of infant deaths in families has implications on infant mortality. **Objective:** The present study attempts to examine the levels, trends, and differentials of clustering of infant deaths in families in India using National Family Health Survey (NFHS) dataset and how they changed over the years. **Materials and Methods:** Study used bivariate analysis and multilevel random effects logit model based intraclass correlation coefficient and median odds ratio to examine the clustering of deaths in families, in India. **Results:** There has been a consistent decline in both infant mortality rate (IMR) and clustering of infant deaths in families in India between 1992 and 2016. However, the pace of decline was faster after 2005. States such as Uttar Pradesh, Madhya Pradesh, and Bihar are the major contributors in clustering of infant deaths in families. In Kerala, clustering of infant deaths has been disappeared in families while among relatively more developed states such as Maharashtra and Tamil Nadu have experienced a reduction in clustering of infant deaths in families by an amount of <1%. **Conclusion:** Between NFHS-3 and NFHS-4 there has been an increase in clustering of infant deaths among mothers with age at first birth >30 years and for mothers who have received higher education. IMR can be reduced to a greater extent if government policies and health resources are directed toward the families experiencing the clustering of infant deaths.

Key words: *Families, Infant death clustering, Infant mortality rate, Intraclass correlation coefficient, Median odds ratio, Relative change*

In the past few decades, India has made significant progress in the social and economic dimensions as infant mortality rate (IMR) has been reduced from 88 infant deaths per 1000 live births in 1990 to 37 infant deaths per 1000 live births in 2015 [1]. This significant fall in IMR to lower level over time shows progress in health dimension within the country. Instead of these achievements, India and many of its bigger states could not achieve the national target of 29 infant deaths per 1000 live births by 2015 as was envisaged for India under 4th UN Millennium Development Goal (MDG) in 2000. Moreover, the states such as Assam, Bihar, Chhattisgarh, Madhya Pradesh, Uttar Pradesh, Odisha, and Rajasthan have high mortality levels ranges from 41 infant deaths per 1000 live births in Chhattisgarh to 50 infant deaths per 1000 live births in Madhya Pradesh [1]. These all possess a question – does the approach toward reducing the infant mortality in the country is on the correct track? Or, there is a need to re-look for a different approach to deal with infant mortality which has been neglected over the years.

In the past, many studies have tried to understand the underlying factors which are affecting infant mortality. It has been found that apart from the known risk factors affecting infant mortality, there is a tendency of infant deaths to cluster among a smaller number of families [2-6]. It implies heterogeneity in the risk of experiencing infant deaths, i.e., in a locality few mothers are more susceptible to experience child deaths than other women. A set of both observed and unobserved factors are hugely affecting this uneven distribution of child deaths among mothers. This is known as deaths clustering in demographic literature. In India, observed factors such as income disparities, uneven regional development levels, mother's educational status, caste, religion, and age of the mother are known to play a major role in affecting the infant mortality [7-14]. However, one of the important predictors, i.e. death of a previous child in the family (i.e., mother) found to be minimally addressed. The main intent of the present paper was to examine the levels, trends, and differentials of clustering of infant deaths in families during the past two and half decades 1992–2016.

MATERIALS AND METHODS

Full retrospective maternity birth history data of India from three survey rounds of National Family Health Surveys (NFHS),