CHAPTER-1

INTRODUCTION

The study examines health scenario of rural households in the districts of Assam adjacent to Indo-Bangladesh borderland region. The study broadly investigates the media reporting and challenges in covering rural health coupled with the functioning of healthcare professionals towards addressing inequity in rural health settings. Access to healthcare has been a significant policy concern that is amplified by social determinants of health of the rural population. Access to health is crucial for overall physical, social, and mental health which are basic ingredient for a good health and wellbeing. The barriers that impede the access to good health are shortage of quality services, transportation, health literacy, and other associated social determinants. National and international studies report the concerns on the gap in health outcomes between the rural and urban areas. The inequity in health outcomes across the population in rural and urban areas has increased household expenditure, thereby pushing every household towards poverty. Within the Indian states, the health indicators of Assam continue to show high morbidity and mortality rate in maternal and child health. The health outcomes across the state of Assam shows the persistent inequity in health outcome and resulting poverty. Thereby, in this context, health status among rural areas of Assam is investigated along with the role of health workers and news media on the existing health inequity.

1.1 Background of the Study

Good health is a reflection of physical, mental and social wellbeing, and not merely the absence of disease (WHO, 2016). In past few decades, global health has gained much importance, where significant resources of development aid have been made available to address major health problems. Global health in past few decades has been effective in the political discourse due to the socioeconomic consequences of poor health, identified by World Health

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Organisation (WHO) and United Nation Development Programme (UNDP). The poor health has caused economic burden over most of the population through increase health expenditure, reduced functional capacity and loss of income and productivity. In addition, poor health has adverse impact on educational attainment and consequently low future income. Poor health status is also associated with reduction in economic growth that depletes economic production or consumption opportunities at household and societal level (UN, 2017). Increase in health expenditure for individual resulting from diseases at household level are foreseen to impact government resources, through reducing taxable income and increasing diseases burden (Evans et al., 2013; WHO, 2016). Clearly, reduction in public fund can have long term adverse effect on the economic growth of a nation. Government spending on health sector has higher return in terms of health outcomes and economic development in poor and developing countries as compared to already developed countries (Sengupta, 2015). Healthcare spending reached US$ 8.3 trillion globally, which is 10% of global Gross Domestic Product (GDP) (WHO, 2020). In 2018, India only spent 3.54 percent of GDP on healthcare, against countries like United States (16.88), Sweden (10.89), and even significantly less than countries like Afghanistan (9.4) (*ibid.*). Previous evidence and reports from World Bank stated that India's healthcare system is underfunded, and persistent lack of public expenditure on healthcare resulted increase out-of-pocket expenditure and poverty (Dash & Mohanty, 2019; The World Bank, 2018). The out-of-pocket expenditure in total health spending remained above 40 percent in low- and middle-income countries, where the share of health spending on primary health varied widely across countries (*ibid.*). Therefore, nations across the globe priorities healthcare as a major concern for policy decisions, channelise significant fund for health and manifest effective measures to tackle the disease burden.

In light of the socioeconomic consequences of poor health, the Sustainable Development Goals (SDGs) was laid out in United Nations Conference in 2012 replacing Millennium Development

Goals (MDGs) to produce a set of universal goals to meet the urgent environmental, political and economic challenges faced by the global population. United Nations along with WHO has broadened the scope of health debates to improve health all around the world right from complex global health challenges such as rising inequities, double disease burden for low and middle-income countries, epidemiological and demographical transitions, and natural disasters. 'Ensuring healthy lives and promote well-being for all at all age' has been the primary concern enlisted as third goal of SDGs. The third goal of SDG targets broadly on the maternal health, child health and communicable/vector borne diseases. Maternal and Child health have been viewed from both human rights and wellbeing perspective as highly important topics (WHO, 2021). It has been envisioned to reduce the global mortality ratio, prevent deaths of new-borns and children under-5, ensure universal access to sexual and reproductive healthcare services, including family planning, information, and education. In addition, efforts have been directed towards increasing health finance, recruitment of health staff, development, training and retention of health workforce, as well as strengthening the infrastructure and accessibility of medical deliverables (UNPD, 2018; WHO, 2016).

International governmental bodies focused on the Universal Health Coverage (UHC) to tackle the rising inequities in health, particularly in developing and low- and middle-income countries. UHC essential for every individual and communities irrespective of socioeconomic condition in order to attain required healthcare services. UHC provides array of essential services from quality health, health promotion, prevention, treatment, rehabilitation, and palliative care across the life course. UHC concentrates on improving health outcomes and equitable health for all through ensuring availability, accessibility, affordability of quality health services of primary healthcare. It is a goal and the components included in the service delivery vary from nation to nation.

Equity in health outcomes and services is lauded crucial as health is a fundamental human right and its progressive realization will eliminate inequalities that result from differences in health status in the opportunity to enjoy life and pursue one's life plans (WHO, 2017; WHO, 1996). The equity is linked to concept of fairness, justice and freedom, where Rawls and Sen argued that social and economic development which countries would aspire to achieve only when there is freedom from poverty, social deprivation and political tyranny (Rawls, 1971; Sen, 1999). The inequities further widen because of poverty, ethnicity, social norms, and stigma pushing the population towards a vulnerable position. Therefore, WHO endorsed the UHC to support equitable healthcare particularly for the undeserved and marginalised groups. Initiatives are manifested to improve daily living conditions, provide equitable start in early life, create healthy places for people, and social protection throughout the lifecycle.

1.1.1 Health Settings in Indian Context

Developing nations, such as India, have diligently launched a slew of initiatives and programs aimed at narrowing healthcare gaps. Despite these efforts, inequity in health and healthcare has significantly affected maternal and child health. Despite improvement in healthcare access and quality (healthcare access and quality scored at 41.2 in 2016, up from 24.7 in 1990), India continues to underperform in comparison to low and lower middle-income countries (MoF GoI, 2021). The hospitalisation rate in India is 3-4 percent, which is among the lowest in the world, where average hospitalisation rate in middle income countries is 8-9 percent and 13-17 percent for Organisation for Economic Co-operation and Development (OECD) countries (*ibid.*). Despite increasing burden of Non-Communicable Diseases (NCD) and high maternal deaths, low hospitalisation rates are mirrored lesser healthy population compared to other middle income or OECD countries. Globally, the level of spending on health depends on the level of country income, high income countries spent 8.2 percent of GDP on health, where low-income countries spent 6.4 percent and upper middle income countries spent 6.3 percent of

GDP on health in 2018 (WHO, 2020). However, global health spending accounts for both the expenditure incurred on government providers and private health providers. Public health expenditure is crucial for health outcomes which has a significant benefits for the economy (Anyanwu & Erhijakpor, 2007; Bloom et al., 2004). The out-of-pocket expenditure in India is one of the highest in the world. Currently health expenditure in India, 8.7 percent is borne by the Union government, state government shares 15.8 percent, where out-of-pocket expenditure is roughly 68 percent. (CBHI, 2019; MoF GoI, 2021). The recent data on public subsidy in India has showed improvement, favouring the poor on maternal and child healthcare (MoH & FW, 2017). Public subsidy on healthcare contributes to lowering of out-of-pocket expenditure, which generally pushed poor sections below the poverty line. India ranks 179th out of 189 countries in prioritizing health in its government budget, that constitutes both state and central government (WB, 2017). The Economic Survey 2021 presents the state expenditure on healthcare, where healthcare spending per capita increases with Gross State Domestic Product (GSDP), healthcare spending as a percent of GSDP decreases with the GSDP per capita, which implies that richer states are spending lower proportion of their GSDP on healthcare (MoF GoI, 2021).

The government of India has emphasized on National Health Mission (NHM) to boost maternal health and child health, which is a critical element of increasing equity and reducing poverty (Planning Commission, 2011). The national target is to reduce the Maternal Mortality Ratio (MMR) to be less than 70 per 100,000 live births by 2030 (MoH & FW, 2018). The MMR in India has declined to 113 (SRS, 2019a) against the global rate of 216. The number of maternal death stands reduced by 77 percent (SRS, 2019a). However, the MMR in India in 2016-18 uncovered a commodious disparity across states like Assam (215), Uttar Pradesh (197), and Kerala (43) and Maharashtra (46), already below the targeted <70 per 100,000 live births. Likewise, India has notably achieved several milestones in the enactment of child healthcare

schemes and policies. In 2013, the NHM undertook to achieve the goals of Reproductive Maternal new born child health (RMNCH+A) for better coverage and improved quality of healthcare. The government of India has launched several child healthcare interventions such as Janani Shishu Suraksha Karyakram (JSSK) for promoting institutional delivery, Rashtriya Bal Suraksha Karyakram (RBSK) to provide comprehensive care from the age of 0-18 years, organize Village Health and Nutrition Day for creating awareness on nutrition, and Mission Indradhanush to achieve full immunization coverage of seven deadly diseases to achieve the Universal Health Coverage (UHC) (MoH&FW, 2018; UN, 2017). Owing to these efforts and interventions, the RMNCH+A report 2017 stated that Neonatal Mortality Rate (NMR) had declined 4.2 percent, a 2.9 percent decline in Infant Mortality Rate (IMR), and a 5.1 percent decline in Under-5 Mortality Rate (U5MR). With an IMR of 32 per live births, India positioned itself relatively just below the global average of 29 per 1000 live birth (SRS, 2019b). The IMR of top-performing states like Kerala (7 per 1000 live births) in child healthcare is comparable to upper-middle countries. However, the scenario changes when compared to the other few states in India, such as Madhya Pradesh, Assam, Rajasthan of 48, 41, and 37 per 1000 live births, respectively (SRS, 2019b). These poor-performing states in India are way below the low-income countries and neighbouring Bangladesh, Nepal, and Myanmar (UN CDP, 2018). The wide disparity in the health outcome among the states of India signifies that despite the uniform distribution of healthcare resources, only a few states have efficiently performed well, while the others lacked behind due to varied reasons.

As the health indicators across India vary from state to state, they reflect distinct challenges with respect to affordability, usage, and availability parameters. The National Health Policy 2017 and NITI Aayog 2018 grouped Assam as one of the poor performing states with several challenges in accessibility and utilization of healthcare services. In the backdrop of the poor health condition of Assam, a study on the effect of social determinants of health on access and

utilization of services is undertaken, focusing primarily on the role of the health workforce and media.

1.2 Public Healthcare Setting in India

The current healthcare system in India is a product of the Bhore Committee Report, 1946, commended as a landmark report in the history of India. The Bhore Committee recommended a three-tiered healthcare system intended for preventive and curative measures in rural and urban areas, with adequate staffing under government remuneration. The vision to establish the three-tiered public healthcare model is to ensure access to free healthcare services for all irrespective of their socio-economic condition. However, in due course of time, the lack of quality public healthcare services led to the evolution of private healthcare services. The first National Health Policy (NHP) 1983 focused its attention on setting up a grid of primary healthcare services prioritizing health volunteers, establishing referral systems and specialty facilities by 2000. In 2002, NHP further accentuated for decentralization of the public healthcare system and brought more investment on healthcare to make it more accessible for the general population.

India's quasi-federal form of government has delegated the authority and control of the health system in India between the Union and the State governments. The Ministry of Health and Family Welfare (MoH&FW) is dedicated to lay down programs at the national level on population health and family welfare, communicable and non—communicable diseases, promoting traditional and community medicines, setting guidelines and standards. The state can adapt the plan and implement it on its scale through assistance from the union government. Primarily, legislation and execution of health programs and schemes are jointly governed by the Union and state. Currently, both public and private sector has been into the healthcare system in India. The private healthcare sector is mainly for urban India, which is considerably expensive than the public healthcare setting that focuses on urban and rural India. Private care

primarily provides secondary and tertiary care, while the public healthcare system in rural areas focuses on primary health into preventive, promotive, and curative measures (UNICEF & WHO, 2018).

The sub-centres (SCs) are the public healthcare set up at the grassroots level and the first point-of-contact for the community. Sub-centres operates in a population of below 5000, while 3000 population in case of difficult areas. Being SCs are considered the first point of contact with limited resources, each SCs are staffed with at least one auxiliary nurse – midwife (ANM) / female health worker and one male health worker, as recommended under Indian Public Health Standards (IPHS). Additional provision for ANM can be availed on a contract basis through National Rural Health Mission (NRHM). SCs primarily works on promotive and preventive measure of healthcare. The activities in promotive and preventive measures include interpersonal communication to ameliorate behavioural change and provide services concerning maternal and child health, family welfare, nutrition, immunization, diarrhoea control, and control of communicable diseases. Sub-centres are running with 100 percent assistance from the Ministry of Health and Family Welfare right from salaries to the procurement of drugs and equipment.

Primary Health Centres (PHCs) are the crucial pillar in the public healthcare system, set up in a plain area with a population of 30000 and 20000 in case of hilly/difficult/ tribal areas. It is the first point of contact between the community and the medical officer (MO). PHCs engage primarily with preventive and curative measures of healthcare, accentuating the promotive aspects of healthcare. The PHCs are maintained by the State Government, where the minimum requirement for staffing includes a medical officer, 14 paramedical, and other staff. NRHM has a provision for two additional staff nurses on a contract basis. It is a referral unit for SCs and usually has 4 to 6 beds for patients (CBHI, 2019).

The establishment of community health centres (CHCs) was envisioned to cater to the health needs of 120000 people in plain areas and 80000 in case of hilly/difficult/ or tribal areas. As per the norms set by Indian Public Health Standard (IPHS), every CHCs must have four medical specialists, that is, surgeon, physician, gynaecologist, and paediatrician, supported by 21 paramedical and other staff. The CHCs are well equipped with operation theatre, 30 beds for in-patients, X-ray, labour room, and other laboratory facilities. It serves as a referral unit for all the PHCs within the block and provides facilities for obstetric care and specialist consultations.

With an objective to accelerate healthcare in rural India, the Government of India has launched National Rural Health Mission (NRHM) in 2005. The NRHM mainly focuses on reducing maternal and child mortality, advancing equity in healthcare, and encourage community participation in healthcare and health operationalization and governance. The primary objective of NRHM has been to provide better accessibility of healthcare, ensuring quality with affordable and equitable healthcare services across the population. The functioning of NRHM is based on 18 states across the country, through categorizing states in high-focused and low-focused zones. The categorization is based on maternal and child mortality rates, thereby providing additional support in finance and technology.

The role of NRHM is significant in ensuring quality and effective healthcare at every healthcare delivery centre. NRHM focuses not only on availing adequate healthcare professionals at the health centres but also on enhancing health infrastructure by creating health centres, renovating existing health centres, and setting up new borne care units. Another crucial objective of the mission is to bring healthcare close to the community by encouraging community participation and community building through conducting time-to-time health camps and public meetings on community hygiene and sanitation.

The government of India in 2013 launched an initiative to give special attention to the child and maternal health, with an objective to reduce the burden of maternal and infant mortality and morbidity. Reproductive, Maternal, New-born, Child, and Adolescent Health (RMNCH+A) was launched to ameliorate health coverage focusing on equity and harmonization. Maternal health is central across all stages of life that influence child and adult health, where the government has taken vital policy decisions to combat maternal and infant mortality. A practical implementation plan is laid down at each layer of the healthcare system regarding workforce and infrastructure. The SCs and PHCs are designated as delivery points to execute the RMNCHA, and CHCs and district hospitals are equipped with introductory and comprehensive obstetric and new-born care services. With several initiatives and schemes targeting the mother and child, India has provided a holistic health need for safe reproductive health. Policies are framed to empower the health workers by incentivizing the efforts and their dedication to delivering services.

1.2.1 Healthcare Workforce

The Healthcare workforce is central to ameliorate the access to quality healthcare, particularly in rural healthcare. Health workers are responsible for delivering services which is a crucial element in the functioning of the health system. Availability of healthcare services has been associated with the increase in the utilization of services and improved health outcomes (Sharma & Narang, 2011; Singh et al., 2019).

The Ministry of Health and Family Welfare, Government of India, publishes Rural Health Statistics 2019-20, which presents information on public health infrastructure and human resources engaged in the public healthcare system. Ensuring the availability of healthcare resources will amplify the accessibility and utilization of healthcare services across the population, thereby contributing towards better health outcomes (Sharma & Narang, 2011; Wilson et al., 2018). As of 31st March 2020, there are 1,55,404 Sub-centres in rural areas and

2517 in urban areas. There has been an increase of 9378 Sub-Centres in 2020 from the year 2005. At present, there are 24918 PHCs in rural areas and 5895 in urban areas. The number of PHCs has increased by 1682 from the year 2005 to 2020. The number of CHCs in rural India is 5183 and 466 in urban areas as of 31st March 2020. There is an increase of 1837 CHCs from the year 2005 (CBHI, 2020).

The healthcare workforce in India has significantly increased over the past 15 years (Ministry of Health & Family Wefare, 2017). The number of ANMs at Sub-centres and PHCs increased from 133194 in 2005 to 212593 in 2020, which counts to roughly a 60 percent increase. Despite this increase in the number of Health Workers (female) or ANMs, there are shortfalls of 14 percent compared to the sanctioned post. The shortfall of allopathic doctors at PHCs in India is 6.8 percent, despite an increase from 20308 in 2005 to 28516 in 2020. Similarly, even though the increase of specialist doctors at CHCs has increased from 3550 in 2005 to 4957 in 2020, a shortfall of 76.1 percent of specialists in the CHCs in India exists. As of 31st March 2020, Assam has 4680 functional Sub-Centres, 1002 functional PHCs, and 192 CHCs (CBHI, 2020).

Another significant component of the rural healthcare system in India is the Accredited Social Health Activists (ASHA) program. The ASHA program comes under the jurisdiction of NHM to enhance community engagement with the healthcare system. In 2005 the Community Health Worker (CHW) program was relaunched in a new form as part of NRHM to achieve universal access to health, focusing on community participation in health activities. ASHA work is attached with two other female community health workers, ANM and Anganwadi Workers (AWW). ANM is the grassroots level worker in the health department, while AWW works under the Department of Women and Child Development. The ASHA-ANM-AWW is a joint working model functioning in Assam and other states in India (Wagner et al., 2018). Primarily, the three workforces are envisaged to provide healthcare services at the doorsteps of villagers with regular coordination with the Medical Officers of respective PHCs.

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1.2.2 Current Scenario of Health in India

The nation's wellbeing and productivity directly correlate with the health of its population. India has witnessed remarkable improvements in life expectancy by lowering infant and maternal mortality rates, but these rates are not adequate to foster wellness and productivity as a nation. In the last few decades, India has undergone significant economic development, flourishing in several sectors of the economy. Despite this economic transformation, the rate of improvements in life expectancy, infant and maternal mortality, and other health priorities is inadequate, lagging the national and global statistics. Moreover, wide variations in health outcomes and performance have been observed across the different states in India.

In the context of healthcare in India, the National Institution for Transforming India (NITI) Aayog has developed a model to evaluate the execution of programmes and schemes in States and Union Territories (UTs) through Health Index parameters. The health index is an essential aid in understanding the heterogeneity and complexity of a nation's performance in health (MoH&FW, 2017). This comparative analysis through the Health Index across the states of India has provided insights on the indicators where states have performed high, low, or stagnant. The index developed by NITI Aayog has 24 indicators, categorized as Health Outcome, Governance and Information, and Key inputs/processes (*ibid*). The overall performance of the Indian states, considering 2014-15 as the base year (National Family and Health Survey – 3), the range of Health Index starts from 28.14 to 80. Uttar Pradesh being the lowest at 28.14 and Kerala being the highest at 80 points. Meanwhile, Uttar Pradesh remain the poorest at 33.69, and Kerala remained the best performing despite a decline in Health Index to 76.55 in 2015-16 year. The National Family and Health Survey Round – 4 (2015-16) presented the top five performing states and states with the poorest health index. The top five performing states are Kerala (76.55), Punjab (65.21), Tamil Nadu (63.38), Gujarat (61.99), and Himachal Pradesh (61.20), whereas the Assam (44.13), Odisha (39.43), Bihar (38.46), and

Rajasthan (36.79) lie at the tail end of the chart (MoH&FW, 2017). The NITI Aayog report further categorized states into four groups from most improved to not improved. Considering the base year (2014-15) the states like Jharkhand, J&K, and UP showed a most improved trend in the current context of 2015-16.

Based on metrics, the states' domain-specific performance is emphasised. The Neonatal Mortality Ratio is the number of neonatal fatalities per 1000 live births each year, and it indicates the quality of prenatal, intrapartum, and neonatal care. Except for Haryana, Bihar, and Uttarakhand, where the NMR climbed somewhat, while staying steady in Kerala and Tamil Nadu, the states recorded a decrease in NMR from the base year (2014-15) to the reference year (2015-16). Odisha has the highest death rate, while Kerala has the lowest. Despite reductions in mortality in several Indian states, the rate remains high in many states, and greater action is needed to meet national policy targets of 16 deaths per 1000 live births by 2025 and 12 deaths per 1000 by 2030, as envisioned by the Sustainable Development Goals.

Similarly, Odisha, Assam and Madhya Pradesh have the highest Under-Five Mortality Rate (U5MR). U5MR refers to the likelihood of dying before the age of five owing to variables such as children's nutritional status, mother's health knowledge, frequent immunization and vaccination, and access to maternal and childcare facilities. The National Health Policy 2017 U5MR established a target of 23 deaths per 1000 live births, with 12 states exceeding 35 deaths per 1000 live births, including Odisha, Assam, and Madhya Pradesh. In a similar vein, the Total Fertility Rate (TFR) in Assam, Rajasthan, and Uttar Pradesh is substantially higher, falling roughly between replacement level fertility of 2.3 and 2.7. The TFR is the average number of children a woman would have if she had the present age-specific fertility rate throughout her reproductive years (15-49 years). TFR levels over a certain threshold are related with extreme poverty, gender inequality, and a high maternal death rate.

The immunization coverage is another crucial determinant that represents a fall in morbidity rates among infants between the age of 9 to 11 months. States like Telangana, Jharkhand, Assam, Odisha have fallen short of 90 percent coverage. Institutional deliveries, on the other hand, have an important role in reducing mother and child mortality and morbidity. In India, only four states, Gujarat, Kerala, Mizoram, and Goa, has 90 percent coverage of institutional delivery.

Other than India's health outcome and status, health governance plays a crucial role in providing easy access to services to the communities. Adequate staffing is linked with better accessibility to healthcare services and the quality of services. Positioning of Auxiliary Nurse Mid-Wives at Sub-Centres (SCs) is crucial to cater to the immediate need for the community's health closest to their place of residence. Except for Gujarat and Bihar, the NITI Aayog study indicated that fewer than 25% of ANM posts were vacant. ANM posts were reported to be vacant in fewer than 5% of the states of Odisha, Uttar Pradesh, West Bengal, and Kerala. Vacancies in General Nurse Midwives in PHCs and CHCs exceeded 40% in Haryana, Rajasthan, Bihar, and Jharkhand. Assam relatively shows a better picture than other states in filling up the positions at PHCs and CHCs. Similarly, the vacancy of Medical Officers is above 40 percent, which is relatively higher in states like Chhattisgarh, Jharkhand, Madhya Pradesh, and Bihar.

Other than the availability of healthcare workers, the availability of robust healthcare infrastructure is equally important to deliver services. The Aayog reports on the operational PHCs, which are critical for delivering community health care and decreasing the burden at higher level health institutions. Assam has the most operational 24x7 PHCs, followed by Haryana, Bihar, and Karnataka. The overall performance of the states has been noted to be inconsistent. They perform significantly high in one sector and low in another. For instance, Assam performs significantly well when it comes to workforce availability and health

infrastructure; however, the performance in health outcomes is significantly flawed. The poor health outcome in Assam, despite government intervention, makes a perfect case to analyse why despite the availability of adequate staff and health infrastructure as presented in the NITI Aayog report, performs significantly poorly in maternal and child health care. Assam records the highest maternal and child mortality rate in NFHS 2015-16. Considering Assam's geographical location, demography, and economic status, analysing and examining the factors responsible becomes pertinent. It also becomes necessary to view health from a broader perspective considering healthcare professionals and media practitioners' functioning to such aberration in the population's health.

1.2.3 Current Scenario of Health in Assam

The recent National Family and Health Survey – 5 (NFHS-5), 2019-20 reports that Assam's health outcome indicators are significantly below the Indian average. Based on SRS based Abridged Life Table 2013-17, the life expectancy at birth in Assam has constantly remained the same from 2010-14 at 63.9 to 2013-17 at 66.2 years, against India's average in 2010-14 at 67.9 and 2013-17 at 69.0 years (Registrar General & Census Commissioner, GoI, 2019). The Annual Health Survey bulletin presents the sex ratio of the population, child sex ratio, dependency ratio, and effective literacy rate, which indicates the household population and characteristics. The sex ratio of the population is the number of women per 1000 men at a given time. The sex ratio of Assam is 958 females per 1000 males in 2010-11 against India's average of 943 females per 1000 males (CBHI, 2019). The child sex ratio is the number of females under 0-4 years per 1000 males in the same age group. The child sex ratio as recorded in the 2010-11 census is 919 per 1000 males. The dependency ratio reveals the number of dependents (children and elderly) and working-age population as an essential indicator of the potential economic opportunities for households and the region. The Annual Health Survey 2012-13 reported that Assam has 60.8 dependent-age per 100 working population. The average effective

literacy rates are the percentage of the population aged seven years and above who can read and write with understanding. Assam has a significantly high effective literacy rate of 81.6 percent in 2012-13.

Family planning and female fertility are associated with the population growth rate, poverty levels, and human development of a country. Better access to preferred contraceptive methods for women directly influences the wellbeing of the women and the family. The five indicators of family planning and fertility are total fertility rate, family planning method, informed choice, unmet need for family planning. According to the most current NFHS-5 (phase1) data for2019-20, Assam's total fertility rate is 1.9 children per woman, down from 2.2 children per woman in 2015-16. The total fertility rate is the average number of children born to a woman if she lived to the end of her reproductive years and bore children at each age based on a specified fertility rate. Assam has remarkably achieved the decline in fertility below the replacement level fertility of 2.1 children per woman. The overall fertility rate in cities is 1.5 children per woman, while in rural regions it is 1.9 children per woman, both of which are below the replacement level. Religion, caste, and education all have an impact on fertility rates. At the moment, women with no education have 0.8 more children than women with 12 or more years of education. Muslim women have an average of 0.8 more children than Hindu women and 0.9 more than Christian women (MoH&FW, GoI, 2020). The family planning techniques include contraceptive awareness and use, contraceptive method choice, and unmet need for family planning strategies among women aged 15 to 49. According to the NFHS-5 survey, the contraceptive prevalence rate among presently married women aged 15-49 is 61 percent, up from 52 percent (2015-16). The health workers informed Seventy-one percent of users of modern contraceptive methods about the available contraceptive choice. The unmet needs are the percentage of currently married women who want to space their next birth or stop

childbearing without contraception. Around 11 percent of currently married women have an unmet need for family planning.

Assam has recorded a commendable decrease in infant and child mortality rate over the past few decades. In Assam, the infant mortality rate in NFHS-5 is projected to be 32 deaths per 1000 live births under the age of one year. According to NFHS-5, the under-5 mortality rate is 39 deaths before the age of five per 1000 live births. Infant mortality rates for Muslim and Hindu children are the same. A kid born to a teen mother is more likely to die during infancy than a child delivered to a woman aged 20-29 (MoH&FW, 2020).

Assam has been the most impoverished performing state in all the indicators of maternal health services. Maternal health is critical for mothers' health and well-being, as well as the health of their children, and has an impact on the whole population and its health. Maternal death is a significant concern around healthcare caused by various factors that include underutilization of healthcare services. Maternal death is the death of a woman during pregnancy or within six weeks of termination of pregnancy, aggravated by the pregnancy or its management. The estimated maternal mortality ratio of Assam is 215 per 1,00,000 live births reported under SRS. Maternal death in Assam is high among women aged 20 to 35 years at 82 percent of maternal deaths. Services such as antenatal care, delivery care, institutional delivery, postnatal care significantly play an essential role in curbing maternal deaths (NRHM, 2018). Sixty-four percent of women in Assam have received antenatal care during the first trimester of pregnancy; however, only 51 percent of mothers had four or more antenatal care, as recommended. In the context of delivery care, around 84 percent of births take place in a health facility, and 16 percent take place at home. However, few districts in Assam, namely Karimganj (76%), South Salmara (72%), and Dhubri (64%), shows relatively less institutional delivery as compared to the top three districts of Assam, where Jorhat (97%), Lakhimpur (96%) and Sivasagar (95%) has shown maximum institutional delivery. Fewer than 46 percent of

women who gave a live delivery at a health facility in the previous five years got financial help via the Janani Suraksha Yojana (JSY), far less than any other Indian state. Only 34.2 percent from South Salmara and 30.9 percent of women from the Hojai district have received financial assistance under JSY, which is much below the average of 46 percent. Postnatal care for the mother protects her health and lowers maternal mortality. Assam has a considerably higher usage of postnatal care, with 69 percent of women receiving a postnatal check within two days after birth, as indicated. However, only 58 percent of women from Dhubri and 55 percent of Udalguri districts have received postnatal care within two days of delivery.

Child health care is crucial to prevent deaths from childhood illnesses and improve a child's future health. Vaccination of children is a necessary intervention to improve the overall health of children. According to the NFHS-5 statistics, 66 percent of children aged 12 to 23 months have received all necessary immunizations against six important childhood diseases. The vaccination drive has significantly increased between NFHS-4 and NFHS-5. The national survey also covers the prevalence of paediatric sickness, with 3% of children under the age of five having an acute respiratory infection during the survey. However, 46 percent were only taken to healthcare facilities for treatment.

Similarly, 18% of children under the age of five developed a fever, but only 54% were sent to the doctor. During the study, 6% of children under the age of five experienced diarrhoea, but only 54% were transported to the health facility. According to data from Assam, 66 percent of children under the age of six receive assistance from Integrated Child Development Services (ICDS) through Anganwadi facilities. Both mother and children benefit from the ICDS program's nutritional and health services. Sixty-five percent of children received supplementary food, and 56 percent received health check-ups from the ICDS under Anganwadi centres. It is also found that over 68% of mothers received services and nutritional supplements from Anganwadi centres during pregnancy. Thus, the health scenario presents a

vast disparity within the districts of Assam. Although the availability of district-level data on key health indicators is limited, ranking of districts on few selected maternal and child healthcare services, the data revealed that districts along the international border with Bangladesh, significantly record low utilization of services compared to districts in central areas of Assam.

1.2.4 District-wise Health Scenario

As the study was conducted in 2019, the selection of districts was based on the NFHS – 4, 2015-16 and Annual Health Survey, 2012-13 report. As of 2015, there are 27 districts, and all the national surveys were conducted according to the Statistical Handbook of Assam (Directorate Of Economics And Statistics, Assam, 2015). The National Family and Health Survey – 4, 2015-16 have presented an overview of the current healthcare scenario, where district-based ranking was done on selected health indicators. Three significant indicators were identified to select the studied districts: Maternal Mortality Ratio, Infant Mortality Ratio, and Under – Five Mortality Ratio. These mortality ratios were selected because it presents an overview of the region's health outcomes and health status. The IMR and U5MR were computed from NFHS-4, whereas the MMR is derived from the AHS, 2012-13 report.

Figure 1 Under-Five Mortality Ratio, 2017-18
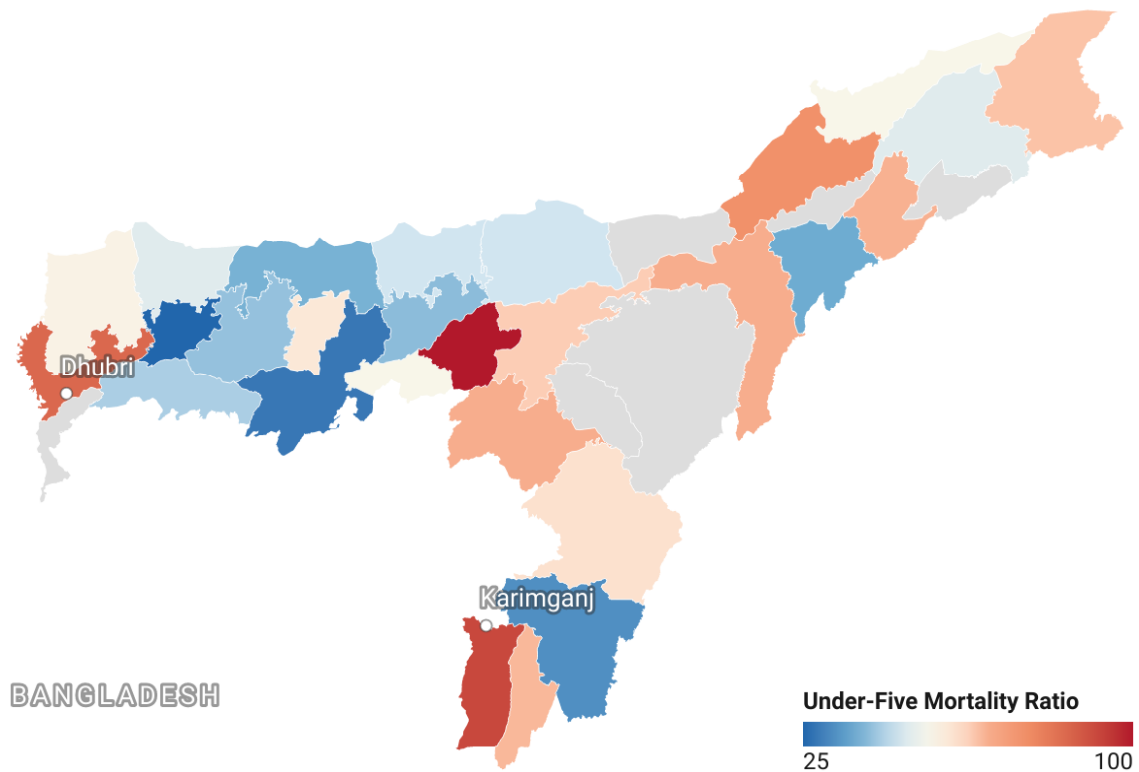
Source: Sample Registration Survey, 2017-18

District-wise comparison presents a wide disparity across all the districts of Assam. As per SRS 2014, the state average for Under-Five Mortality Ratio (U5MR) is 45 deaths per 1000 live births, where only seven districts are in a position below the average. Districts like Morigaon (100), Karimganj (92), Dhubri (85) have significant cases of under-five mortality, which is much above the state average. Similarly, Karimganj records the highest infant death rate of 93 deaths per 1000 live births, followed by Morigaon (76), Dhubri (71).

Figure 2 Infant Mortality Ratio, 2017-18
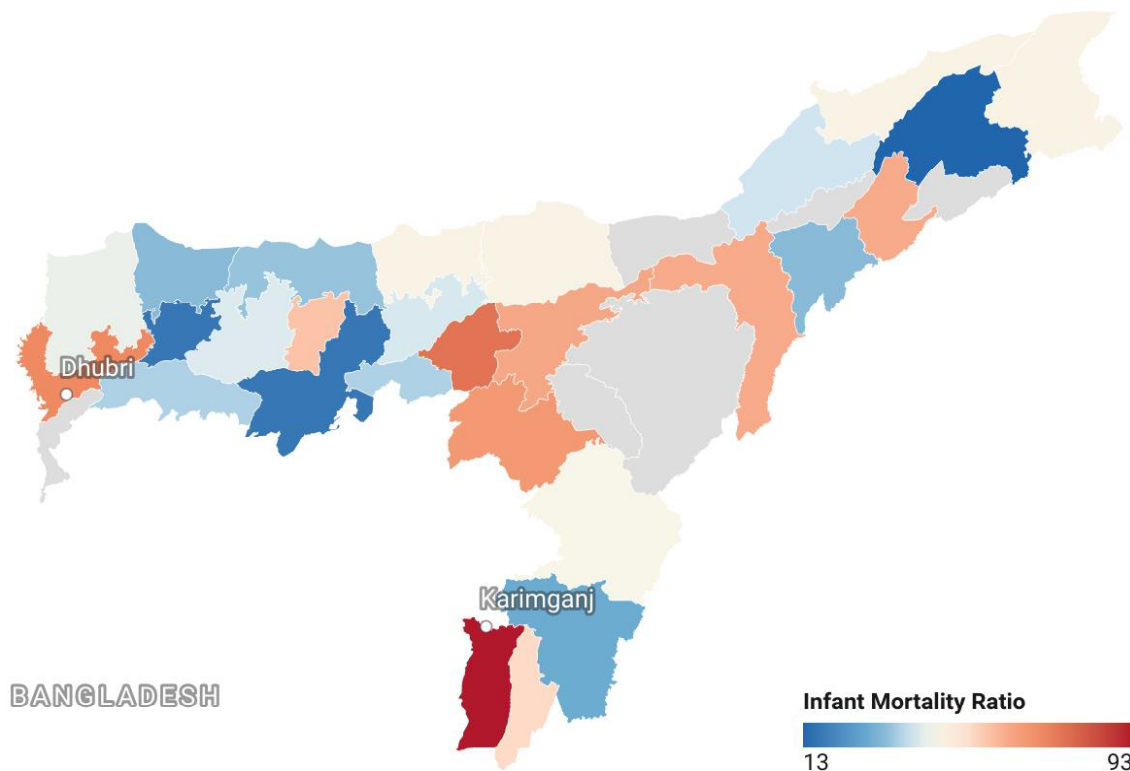
Source: Sample Registration Survey, 2017-18

The state average of IMR is 48 deaths per 1000 live births, where Dibrugarh (13), Bongaigaon (17), and Kamrup (17) perform significantly better than the Karimganj, Morigaon, and Dhubri. The Maternal Mortality Ratio is extracted from the Annual Health Survey 2012-13 report. Currently, the estimated MMR in Assam is 215 deaths per 1,00,000 live birth (SRS, 2019b). However, as the district-wise data is available only for 2012-13, the estimated MMR in 2012-13 was 300 deaths per 1,00,000 live births.

Figure 3 Maternal Mortality Ratio, 2017-18
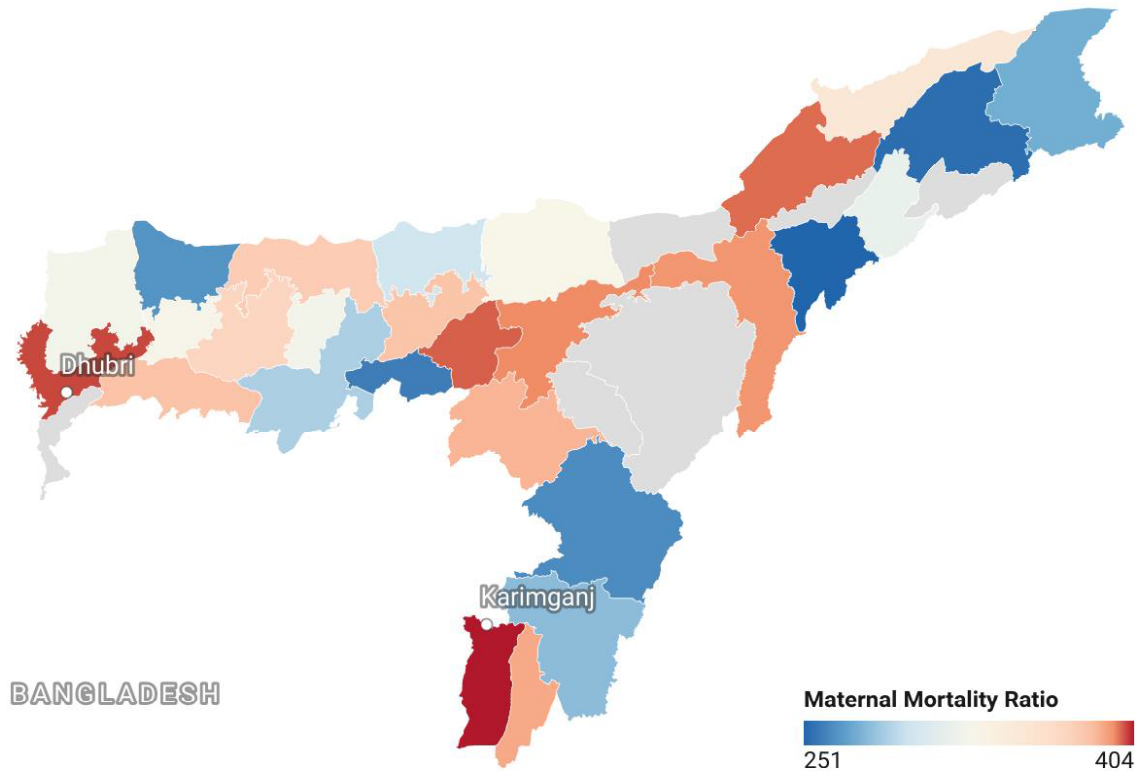
Source: Sample Registration Survey, 2017-18

The selection of district was based on AHS 2012-13, where most of the districts are above the state average. Karimganj has the highest maternal death at 404 deaths per 1,00,000 live births, followed by Morigaon (401), Dhubri (399), and Karbi Anglong (398).

Based on district-wise mortality indicators in Assam, it is found that districts adjacent to the international border tend to perform poorly than districts close to the centre of the state. Further examining the trend in performance, districts close to the Bangladesh border perform significantly lower than other international countries. Therefore, three poorly performing districts close to the Bangladesh border are selected for the study. As reported in NFHS-4 and AHS 2012-13, South Salmara was part of the Dhubri district separated in 2016. Hence, the three districts considered for the study are Karimganj, Dhubri, and South Salmara.

The evidence from NFHS-5 represents the disparity in household characteristics, including household composition, access to toilet facilities, and education. Assam has an 84 percent population in rural areas, with an average of 4.3 members. Sixty-three percent of the population in Assam is Hindu, 34 percent are Muslims, and 3 percent are Christian. The majority of the household are nuclear families (64%), while the resides in non-nuclear households are 36 percent. The toilet facilities are the foundation of a healthy, disease-free, and comfortable life. The access to toilet facilities in urban areas ranges from 96 percent to 100 percent; however, in rural areas, the access to toilet facilities ranges from 85 percent in Dhubri district to 99.6 in Hailakandi district.

There exists a wide disparity in access to toilet facilities among the districts of Assam. Another major determinant of health is education qualification. The NFHS-5 reports that Karimganj has 22.5 percent of the total literate population, who have attended school and have passed a literary test. 18.6 percent of rural women are literate, whereas 25.3 percent of males from rural areas are literate in the Karimganj district. Similarly, 33 percent of the population in Dhubri are literate. South Salmara district has a 30 percent population who have attended school and have passed the literate test. Karimganj has seen the lowest among all the districts of Assam in literacy.

The health surveys and annual reports present an overview of health and health status. However, little is known at the district level on the utilization and access to healthcare services. It becomes pertinent to understand how health problems are tackled by the healthcare professionals engaged in the studied districts and what role the news media plays in shaping health news towards advancing more equitable healthcare.

1.3 Media and Healthcare Services

The media not only transmits information to audiences but also communicates to affect policy changes in the healthcare system. This dual role in communication highlights the importance of quality healthcare and increased health outcomes. The multifaceted function of communication facilitates the efficient sharing of knowledge among various audiences. The need for improved health allows people to advance in their personal and professional life, giving individuals and different groups of people the right to make decisions. Individuals who have the right to make decisions are more able to convert health resources into health results. The health outcomes are an integral element of health capability which enables an individual to understand the conditions that facilitate and barriers that impede health and ability to make healthy choices (Ruger, 2009a). The capability of an individual is related to the ability to achieve functions that will constitute the person's freedom to have wellbeing (Sen, 1992). This individual freedom to achieve good health is driven by factors such as Social Determinants of Health (SDH) (Evans et al., 2013; Friel & Marmot, 2011; Mwase et al., 2018; WHO, 2015), the functioning of the healthcare workforce (Lehmann et al., 2019; Rao et al., 2011; Wagner et al., 2018), and communication tool to influence the decision-makers (Cooper et al., 2015; Niederdeppe et al., 2013a; Waisbord, 2016).

The Social Determinants of Health (SDH) have a significant impact on resource access and use, resulting in a lack of equality in health and healthcare. Equity in health and healthcare means that people's needs, rather than their social privileges, guide the distribution of wellbeing opportunities (World Health Organization, 1996). Studies have illustrated those social privileges are reflected by differences in socio-economic conditions, geographical location, age, and gender. The World Health Organisation has demonstrated in many studies that there are substantial inequalities in health status and health services among various social classes, which are exacerbated by a limited, unequal, and unjust distribution of resources in

developed countries (WHO, 2015; WHO, 2017). The government has initiated actions to bridge the gaps and move toward equitable health and healthcare, placing the equity higher on the policy agenda in the current political and economic conditions.

Besides the Social Determinants of Health (SDHs) being a significant factor for community health status and outcome, the healthcare workforce has a vital role in advancing equity in health. The Healthcare workforce in the rural public healthcare settings is the preventive care provider. They act as the first point of contact for the communities' health needs. The healthcare workforce not only treats a large number of patients, but they also get involved with patients in their key points, right from birth, schooling, at the times of illness, and aged ailments. This enables the healthcare workforce to establish an effective relationship with patients. Furthermore, previous studies have revealed that the healthcare workforce has substantially impacted health status and health outcomes through tackling the social determinants of health (Rao et al., 2011).

The public healthcare system can function with an efficient healthcare workforce, and merely the availability of a healthcare workforce is not sufficient. The healthcare machinery can run effectively with equitable distribution of the workforce and easily accessible by the general population. Besides the availability of the workforce, educating and training the workforce will motivate and empower them to deliver quality care which will translate into adequate service coverage. The performance of the healthcare workforce is measured through four dimensions: availability, competency, responsiveness, and productivity (World Health Organisation, 2006). However, it is pertinent to understand what determines how healthcare workers perform. Generally, it is to be assumed that lack of knowledge and skills primarily leads to ineffective functioning of healthcare professionals; however, there are other factors that contribute to how the health workers perform. First, the characteristics of the population being served, and second, the characteristics of health workers themselves, and the characteristics of the health

system (World Health Organisation, 2006). Healthcare professionals who serve the communities with multiple socio-economic issues and other social determinants of health demand an adequate understanding of the problems. Here, the level of education significantly influences the practice of the health workforce. Studies have indicated that the level of education obstructs effective communication, resulting in a lack of awareness (Henderson et al., 2018). It is of utmost importance to adequately train healthcare professionals to respond to the communities' health needs. In addition to providing basic clinical service for treatment, healthcare professionals are also expected to work for preventive measures that will largely contribute to less morbidity. On the other hand, the characteristics of healthcare workers themselves determine their performance.

The functioning of healthcare workers is affected by sociocultural background, experience, motivation, and other behavioural characteristics. Several studies indicated that health workers from a relatively privileged background tend to have limited knowledge about the socio-economic background of the patients (Perry et al., 2014). Furthermore, the cultural background of communities also influences the healthcare professionals functioning. The health workers employed in a region with communities from entirely different cultural backgrounds affect how they approach and interact with the patients (Olaniran et al., 2017). Internal and external factors determine the motivation of the healthcare workforce. The motivation of healthcare professionals significantly contributes to their functioning by being punctual, diligently delivering responsibilities, accountable, and being responsive to any health needs of the communities.

The WHO has recommended four key indicators to assess the healthcare workforce: availability, competence, responsiveness, and productivity. The characteristics of the health system and health workers coincide together concerning the dimensions for measuring the performance of the health workforce. Availability accounts for the regular posting of health

workers, maintaining the staff-patient ratio, and frequently inspecting higher authority in the health centres. This ensures the effective functioning of the healthcare centre by maximizing the responsiveness towards the community. The health workforce engaged in healthcare centres can work effectively can be ameliorated by providing operative support systems. The support system for effective productivity of the healthcare workforce comprehensively includes providing an ecosystem of infrastructure, communication, regular remuneration, and incentives.

Communication, as already mentioned, has significant importance in healthcare. Information, education, and communication with the patients has vital role to ameliorate communities' health and provide every attentive care to the patients. The context of communication in healthcare can be looked at from two approaches: communication for healthcare awareness among the communities and communication for influencing policy change to enhance the healthcare system (Cooper et al., 2015; Dorfman et al., 2005; Viswanath & Matthew, 2007; Viswanath & Emmons, 2006; Yanovitzky & Stryker, 2001). The former communication approach looks at healthcare from inside the healthcare system, while the latter observe the functioning of health as an external stakeholder, reports it, and influences decision-makers to enhance the efficiency of the health system.

The basic difference between communication for health awareness and communication for policy change approach are fundamentally different with respect to their objective as the internal approach tends to create awareness for utilization of healthcare services, and the external approach tends to advocate for better ecosystem from the government for the healthcare system. In this study, a blend of both approaches has been undertaken to conceptualize health and the healthcare system in the peripheral region. It is pertinent to understand the role of media and healthcare professionals to enhance the healthcare system in bordering regions and advance equity in healthcare among the communities in the peripheral

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region. The present research aims to provide a holistic picture of the interplay between the functioning of healthcare professionals, its influence on the health of communities in the districts of Assam along the international border with Bangladesh, and the role of media in establishing an ecosystem for equitable health.

1.4 Rationale of the Study

News media plays a central role in contributing towards to the goals of public health practice. Effectiveness of news coverage has been highlighted by previous studies on shaping policy discourse and reinforcing strategies to effectively act on the widening gap in health outcomes. In this context, strengthening the health and healthcare system continues to be a global effort to eradicate health issues and foster well-being across the entire demographics. Availability, accessibility, affordability, and quality healthcare parameters have been promoted as the fundamental human right to ensure Universal Health Care (UHC). In low- and middle-income countries like India, increasing morbidity impact, the population which burdens the family and public resources, weaken societies, restrict growth, and push back the population into poverty.

Several national surveys conducted over the past few decades have highlighted a wide disparity in mortality rates and morbidity rates among the rural and urban populations. Research conducted in a different part of the country has concluded that mortality and morbidity rates are exorbitantly higher in rural areas than in urban areas (Banerjee & Chowdhury, 2020; Kumar, 2021). The disparity is caused by multiple socio-economic determinants that constitute social determinants of health, which emancipates the need to investigate the scene of the rural healthcare system in the Indian states. Considering, the state-wise ranking on critical health indicators presented another picture of disparity among the states.

The national health survey reports published at different points of time stated the disparity among the states, where few states performed significantly well while the other did not even manage to be close to the national average. Among the states in India, Assam has performed

significantly low in all the health indicators, particularly maternal and child health. The increase in disparities in health performance in Assam across the rural population needs a research intervention to identify possibilities to narrow the widening gap. Previous research has observed maternal and child health is a crucial indicator for a healthy community and individual well-being. In this context, the disparity caused by social determinants of health in rural villages of Assam needs research attention. Moreover, discussing the poor condition of health outcomes in rural areas of Assam, it becomes fundamental to further probe into the role stakeholders associated with the healthcare system.

Healthcare professional is the key stakeholder responsible for preventive, curative, promotive and palliative service among the population. As the functioning of the healthcare system is vested into the health workforce, it becomes pertinent to understand the nature of delivery to counter the growing disparity in health outcomes across the state. With the introduction of NHM in 2005, the capacity of the healthcare workforce to tackle the inequality in maternal and child health has been boosted. Despite consistent efforts by the government agencies to ameliorate the healthcare system, it is found that the efficiency and effectiveness of healthcare professionals alone cannot contribute to bridging the gap caused by multiple social determinants of health. Moreover, research attention towards the healthcare workforce engaged in the Indian healthcare system is relatively low. The working dynamics of the professionals change with the place of work, such as a disparity in the availability of health workers between urban and rural areas. There has been limited knowledge of the functioning of health professionals for health equity in India, particularly in the context of Assam. Being Assam, a poor performing state in all health indicators, primarily the maternal and child health, it becomes necessary to examine the function, considering their action for effective healthcare in rural Assam.

Healthcare professionals are the internal stakeholders, delivering services from within the system; however, it is necessary to understand what role the external stakeholders play in increasing the efficiency of the health system. Previous research has illustrated the importance of news media's role in communicating awareness programs on health and healthcare schemes; however, a limited study has been found on the other significant roles of news media such as advocacy and communicating for equity in healthcare. Studies on communication about health disparities and the use of news media by health professionals to advocate health equity need research intervention. Therefore, given this condition, a study on analysing the role of healthcare professionals and media professionals in bridging the disparity among the rural population in Assam would pave a way forward for integrating communication models for healthcare professionals.

1.5 Problem Statement

The formal statement of the problem is as follows:

Interplay of media imagery and functioning of healthcare professionals towards equitable healthcare among the marginalised in the India-Bangladesh borderland region.

1.6 Research Objectives and Questions

Research Objective 1: To determine the level of inequality of the community across the population in the bordering districts of India-Bangladesh in Assam.

1. What is the socioeconomic and demographic profile of the population in the Indo-Bangladesh bordering districts of Assam?

2. How and to what extent do the socioeconomic and demographic conditions affect the population's maternal and child health and wellbeing?

3. What is the level of inequality based on the socioeconomic condition of the population in the districts of Assam bordering Bangladesh?

Research Objective 2: To analyse the healthcare provisions for the population in the studied rural regions bordering the international border with Bangladesh.

1. How does the rural public healthcare system function in districts of Assam bordering Bangladesh?
2. How does the socio-economic inequality influence the accessibility of healthcare services among the population?
3. What are the factors that affect the utilization of women and child healthcare services among the communities in the districts of Assam bordering Bangladesh?

Research Objective 3: To examine the functioning of healthcare professionals towards addressing inequality in healthcare in borderline areas of Assam.

1. Whether the healthcare professionals have a role to play to advance equity in health?
2. What are the factors that contribute to advancing equitable healthcare by the healthcare professionals?
3. Whether the sociodemographic factors of healthcare professionals have any influence on the functioning towards health equity? If yes, then how?

Research Objective 4: To examine the role of news media in shaping public perception support and action towards reducing the gap in health outcomes.

1. What is the role of news media towards contributing to equity in healthcare among the multidimensionally poorer section in the peripheral region?
2. Whether news media can support the functioning of the healthcare workforce in the peripheral region to achieve health equity? If yes, then how?

1.7 Data Source

Secondary sources, Government of India

National Health Policy (2002, 2017)	Ministry of Health and Family Welfare
Annual Health Report, 2018-19	Ministry of Health and Family Welfare
Janani Suraksha Yojana (JSY)	Ministry of Health and Family Welfare
National Health Profile, 2019	Ministry of Health and Family Welfare
Rural Health Statistics, 2019	Health Management Information System, MoH&FW
a) Maternal and Child Health in India, 2014-15 b) Emerging Issues in Maternal, Neonatal and Child Health in India, 2016-17 c) Impact Assessment of Selected Healthcare Policies in India, 2018-19	Health Management Information System, MoH&FW
Sample Registration System (SRS) Bulletins a) SRS (September 2014) b) SRS (December 2016) c) SRS (September 2017) d) SRS (May 2019)	Office of the Registrar General & Census Commissioner, India
Reproductive, Maternal, New-born, Child and Adolescent Health	National Health Mission
Secondary sources, Autonomous Institutions	
National Family and Health Survey (Round 4 & Round 5)	International Institute of Population Sciences
District Level Household Survey – 4	International Institute of Population Sciences and Ministry of Health and Family Welfare

Secondary Sources, Government of Assam	
Statistical Handbook, Assam	Directorate of Economic and Statistics
Demand for Grants	Department of Health and Family Welfare
Primary Data	
A detailed sample survey of rural households	Structured and close-ended interview
Healthcare Professional Five-Point Likert Scale	Five Point Likert Scale
Media Professionals	In-depth Interview Schedule

1.8 Thesis Structure

The thesis is split into six chapters. The first chapter is an introduction that offers an overview of worldwide public healthcare and healthcare settings in India. The chapter also provides a detailed overview of the relationship between media and healthcare. It has covered the study's aims, research questions, problem statement, and rationale.

The second chapter begins with a survey of existing literature, followed by health equity, the distinction between equity and equality, and theoretical approaches to health equity. It also includes a thorough examination of the health capability paradigm, agency and functioning, and dimensions of individual well-being. It has also highlighted the relevance of the health capacity paradigm and health inequality. The chapter also concentrated on determining the impact of SDH on health equity. Furthermore, the chapter included a thorough examination of the availability, accessibility, and usage of healthcare services. It also explored the role of healthcare professionals in achieving healthcare equity.

The third chapter describes the research technique used to carry out the investigation. This chapter describes the study strategy and the operational description, data source, sample,

instruments utilized, and data processing approach for each kind of respondent. The chapter discusses and justifies the use of each stage in the research design, methodologies, tools, and statistical techniques to achieve the study's goal.

Chapter four lays down the results and findings of the study. Phase one of the chapter identifies the level of inequality and further assess the effect of socioeconomic factors on the accessibility and utilization of healthcare services. Phase two of the chapters present the extracted values and effectiveness for achieving equitable healthcare for the community. Phase three focuses on the news media role in representing healthcare inequality and the way forward for a structural model of communicating health disparities.

The fifth chapter of the study discusses each variable and its relationship in consideration of existing literature support to the present study findings. The chapter presents are divided into section, where section one discusses the effect of social determinants of health on utilisation and access to healthcare services. In contrast, the other part of the chapter concentrates on the role of healthcare professionals and media practitioners in addressing equity in the studied region.

Chapter six outlines the conclusion, followed by major findings and policy implications. The chapter also presents limitation and future scope for research.