Contents

Domain: Healthcare

Source: https://data.gov.in/

The dataset

The National Family Health Survey 2019-2021, dataset, provides comprehensive data on population dynamics, healthcare, nutrition and education in India. It introduces new dimensions like early childhood education and sanitation accessibility, while enhancing clinical assessments. This report emphasizes on child healthcare, women healthcare and women literacy rate in India from 2019 to 2021.

Dataset with description

The following "Data_descripttion.xlsx" file contains the column names along with its description.

Data_description.xlsx

Who it's for

The user of this dataset would primarily include "**Public health officials and Healthcare practitioners"** involved in development of public welfare initiatives.

Public health officials and healthcare practitioners can use the insights from the dataset to create evidence-based policies which can help improving the healthcare services, addressing nutritional deficiencies, enhancing sanitation facilities, and promoting early childhood education.

Data operations

The dataset included 209 columns and 709 rows initially. "Data description and operation" file contains description of columns and operations performed on them which have been used for dashboard creation. In order to clean the dataset following steps have been performed:

Data description and operation.xlsx

On brief level following data transformation activities were performed:

1. Import .csv file for transforming the data
2. Column names changed to precise names to increase the clarity of visualizations.

3. Datatypes of few columns were changed from whole number to percentage as the raw data included information in percentage format.
4. Few columns included more than 60% missing values hence were deleted.
5. Few columns included more than 1% missing values hence were deleted.
6. Columns which were providing repetitive information were deleted.

Justifications

1. The dataset was chosen due to its comprehensive coverage of population dynamics, healthcare, and nutritional status in India, including various states and union territories.

   The chosen dataset required data transformation activities in order to clean it before loading it into power bi.

2. **Power BI** was chosen over Tableau for handling large, uncleaned datasets due to its robust data preparation capabilities.
3. Power BI seamlessly integrates with Microsoft Excel and other Microsoft products, enhancing workflow efficiency.

   Advanced data modeling features in Power BI make it suitable for analysing complex datasets.

   Power BI offers strong visualization options for presenting data effectively.

   Affordability and ease of use were factors in selecting Power BI, allowing for efficient data exploration and visualization without extensive training.

4. Following columns were utilized to create visualisations in three dashboards:

Dashboard name	Visualisations	Columns used
Child Healthcare	1. Top 5 states for child vaccination coverage	1. States Vs. Child fully vaccinated from card(12-23months)
	2. Children health status overview	2. Comparison of Stunted children (under 5years), Wasted children (under 5years), Underweight children (under 5years), Overweight children (under 5years) across all states of India
	3. Top 5 states ARI prevalence and its treatment	3. ARI Symptoms Treated at Health Facility (Under 5), ARI Symptoms Prevalence (Under 5 years)
	4. Top 5 states with total children adequate diet	4. Sum of Total Children with Adequate Diet (6-23 Months)
	5. Top 5 states with access to Healthcare Services for Children	5. States Vs. Institutional Births in Public Facilities

	6. % Average children vaccinated in India and % Average children with adequate diet	6. Children Fully Vaccinated from Card(12-23 Months), Total Children with Adequate Diet (6-23 Months)

Dashboard name	Visualisations	Columns used
Women Healthcare	1. Top 5 states women oral, breast and cervical cancer examination	1. Breast Cancer Examination Women (30-49), Oral Cancer Examination Women (30-49), Cervical Cancer Screening Women (30-49)
	2. Women's Healthcare Utilization and Services	2. Institutional Births in Public Facilities, Caesarean Section in Public Facilities, First Trimester Antenatal Check-Up, Postnatal Care Within 2 Days
	3. Top 5 States with Obesity-related Health Risks in Women	3. High Risk Waist-to-Hip Ratio Women (15-49)(≥0.85), Overweight/Obese Women (15-49) (BMI ≥25.0 kg/m2)
	4. Top 5 states with women's Oral Health and Tobacco Usage	4. Tobacco Use Women (15+), Oral Cancer Examination Women (30-49)
	5. % Average High Blood Suger, High Obesity, Anaemic, severly elevated BP Women	5. High Blood Sugar Women (15+), Anaemic Women (15-49), Overweight/Obese Women (15-49) (BMI ≥25.0 kg/m2), Moderately/Severely Elevated BP Women (15+)

Dashboard name	Visualisations	Columns used
Women Education	1. Top 5 states with Women literacy rate	1. Women (15-49) Literate
	2. Top 5 states with women's Education Levels and Early Marriage Rates	2. Women (20-24) Married Before 18 Years, Women (15-49) Literate
	3. Top 5 states with distribution of women literacy rate and modern family planning method	3. Women (15-49) Literate, Family Planning Use - Any Modern Method
	4. Female Population (6+) Ever Attended School by State/UT	4. Female Population (6+) Ever Attended School

	5. Average Women interviewed, % Average Women literate	5. Women age (15-49) Interviewed, Women (15-49) Literate

Insights

Child Healthcare:

1. **Top 5 states ARI prevalence and its treatment:** States like Bihar, Maharashtra and Uttar Pradesh exhibit higher prevalence rates of Acute Respiratory Infection (ARI). Whereas, Gujarat and Telangana exhibit lesser prevalence rate of ARI. Gujarat, Uttar Pradesh and Telangana, these states face inadequacies in providing treatment for ARI. Thus, it is imperative for public health authorities to prioritize the establishment of healthcare facilities dedicated to addressing ARI in these regions.

Child Healthcare:

2. **Top 5 States with Obesity-related Health Risks in Women:** States with higher rates of obesity in women tend to have elevated waist-to-hip ratios, indicating increased risk of cardiovascular issues. Public health officials can focus on lifestyle modifications and providing access to healthcare services may help in managing and reducing obesity-related health risks among women in states like west Bengal, Uttarakhand, Tripura, Uttar Pradesh and Telangana.

3. **Top 5 states with women's Oral Health and Tobacco Usage:** In states such as Uttar Pradesh, Odisha, Rajasthan, West Bengal, and Bihar, there is a higher prevalence of female tobacco users compared to oral cancer examination rates, indicating a potential gap in oral health care services. Public health officials can focus on providing more oral cancer examination centres as these states' women consume more tobacco.

Women literacy rate:

4. **Top 5 states with women's Education Levels and Early Marriage Rates:** It sheds light on the relationship between women's education levels and early marriage rates, highlighting top 5 states like Telangana, Karnataka, Maharashtra, Uttar Pradesh, Tamil Nadu where efforts to promote education and delay marriage are most successful. In states with higher rates of female literacy, there is a concomitant reduction in the incidence of early marriage.

5. **Top 5 states with distribution of women literacy rate and modern family planning method:** It identifies states like Tamil nadu, Maharashtra, Karnataka, Gujarat and Uttar Pradesh where higher literacy rates coincide with greater adoption of modern family planning methods, suggesting the role of education in facilitating informed reproductive choices. Women with higher literacy rate adopts modern family planning choices.