# Status of Maternal and Child Health (MCH) in Telangana

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## I Background

The present note is about the status of maternal and child health (MCH) in the state of Telangana. The erstwhile undivided state of Andhra Pradesh was *bifurcated* and separate state of Telangana[1] was formed on June 2, 2014. Telangana emerged as the 29th and youngest state of India. It is to bring out the performance of the state of Telangana in continuum from the levels it had inherited from the undivided state of Andhra Pradesh and its relative performance in comparison with residual state of Andhra Pradesh.

Telangana state, land locked southern state, is the twelfth largest state in India in terms of area and also population as well. According to Census 2011, its population is 3.51 crores (out of total population of 8.45 crores of the undivided state of Andhra Pradesh) and its geographical area is 1.12 lakh Sq. Kms. Telangana accounts for 3.5 per cent of the total geographical area and contributes 2.9 per cent of population in the country. The population density of the state at 307 per sq. Km is less than the national average. The decadal growth rate (2001-11) of state population was 13.58 per cent (1.2 per cent per annum) which is one of the lowest across states in India. Of the total state population, 38.64 per cent concentrated in urban areas.

Telangana economy continued to be in the high growth trajectory with 8 to 10 per cent annual rate of growth in Gross State Domestic Product (GSDP) of the state during last three years. The per capita income of the state at Rs. 1.40 lakhs in 2015-16 is 40 per cent higher than the national average[2]. While contributing nearly 4.0 per cent the country's GDP, Telangana state emerged as one of the relatively prosperous states in India[3]. Telangana state has made considerable progress in the fields of health, education[4], industry and services sectors. The performance of Telangana state in respect of human development according to Human Development Report 2017 (HDR) of Telangana state indicate that not only performance of the state is relatively better than

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[1] The present Telangana state was part of the Nizam's Hyderabad state before it integrated with India in 1948 and part of independent Hyderabad state from September 17, 1948 to November 1, 1956. When it was merged with Andhra state and formed the Andhra Pradesh state in 1956, it was part of that united Andhra Pradesh for nearly 58 years until it was bifurcated in 2014.

[2] Socio-Economic Outlook-2017 (Reinventing Telangana: Looking Back and Ahead), Planning Department, Government of Telangana, Hyderabad.

[3] Despite being agricultural dependent economy, the growth in Telangana was mainly driven by the industry and services sectors. Telangana is performing well in the fields of information technology and biotechnology. It is one of the top IT exporting states in India. Hyderabad has been remained as one of the growth centre of industry related to Information Technology and bio-technology in India.

[4] Although historical neglect of primary education during Nizam's rule and when it was part of undivided Andhra Pradesh, haunting the educational backwardness in terms of very low literacy rate at 66.5 per cent (Census 2011) which was well below the national average, its performance at present in school and higher education is remarkable and the state stands above the national average.

national average but also rank of the state in all India context (across major states) has improved from 13 in 2004-05 to 10 in 2011-12 (CESS, 2017). The report says that the improvement is not only in the overall index but also in each of three components of the Human Development Index (HDI).

Telangana state has inherited the demographic transition that undivided state of Andhra Pradesh had witnessed during the 1990s and 2000s (see CESS, 2008; Dev *et al.*, 2009). The fertility rate in the undivided state had declined to little below replacement level (i.e.2) by the turn of 21st century and continued to be so thereafter. The estimates of third National Family Health Survey (NFHS-3) have shown that the fertility rate of undivided Andhra Pradesh in 2005-06 was 1.8 (children per women in the reproductive age) and the recent NFHS-4 (2015-16) estimates indicate the same. Its achievements in family planning leading to fertility transition that ultimately resulted in low population growth considered as demographic transition, is well appreciated. But its performance in many aspects of health outcomes is still far behind in respect of required or ideal situation / outcomes and when compared to some other states. It was observed that the disproportionately-high focus on family planning towards population stabilization in the undivided Andhra Pradesh since 1970s had diluted the focus / emphasis on maternal health (see Prakasamma, 2009).

In this backdrop, the present note is on the status of MCH in the undivided state of Andhra Pradesh and the state of Telangana after bifurcation. The focus in this note would be on: infant mortality, maternal health, breastfeeding; births - institutional and other related issues such as Cessarion section births etc.; immunizations; the impact of ICDS on Child health, such as nutrition, immunization; and health care infrastructure in the state of Telangana. It also covers rural-urban differentials and possibly for social groups. This note is primarily based on multiple secondary sources of data: the estimates of Sample Registration System (SRS); the National Family Health Survey (NFHS); District Level Household Survey (DLHS), the National Sample Survey Office (NSSO) survey on Health as parts of its 71$^{st}$ Round (2014) survey on *Social Consumption*, Census of India and supplemented with findings of some research studies and reports.

Maternal and child health is most crucial components of the human health. In the health systems the maternal health encompasses the family planning, preconception, pre-natal, child birth (delivery) and postnatal care[5]. Hence, the aim of maternal health concerns with reducing the maternal morbidity and mortality. Similarly, the child health in general covers health of a child as a foetus during pregnancy, child birth environment, breast-feeding and post-natal child health involving the childhood diseases and nutrition till a minimum of five years age of the child. In the health care dimension of the child health it encompasses anti-natal checkups and pre-natal care, skilled attendance at child birth, immunization and nutrition. In a health system, it appears there is a overlapping between maternal and child health when seen each of them separately and hence one needs to look at it in a continual form and together comprehensively.

[5] In general maternal health covers the health of women during pregnancy, childbirth, and the postpartum period.

## II Maternal and Child Health in Andhra Pradesh and Telangana

Before proceeding to status of the maternal and child health in these Telugu states, we place here some of the special characteristic features of these states in respect of women's reproductive health. Both the Telugu states are one of the few states stand top in respect of very low fertility rate (TFR below replacement level), early marriages of women, child bearing (pregnancy or live birth) and high incidence of sterilisation in their early ages and prevalence of hysterectomy. The recent NFHS IV (2015-16) estimates indicate that fertility rates (TFR) in these states are below replacement level and are harmonised across socio-religious groups (see IIPS and ICF, 2017).

The analysis of Census 2011 data (C Series Table 4) indicates that more than 80 per cent of ever and currently married women (of all ages) in the undivided Andhra Pradesh were married before they were 22 years old, two-thirds of them married before 20 years of their age, and two-fifth of them married before 18 years of age which is a legal minimum The recent NFHS IV (2015-16) estimates indicate that the median age at first marriage is 18.8 years among presently 20-49 years old women in Telangana state (see IIPS and ICF, 2017). It also shown that more than one-fourth (26%) of women aged 20-24 years got married before they attained legal minimum age of 18 (*ibid*).

About 11 percent among women aged 15-19 years in Telangana, have already begun childbearing. Although knowledge of contraception is almost universal (98%) in Telangana, the contraceptive prevalence rate and the modern contraceptive prevalence rate among currently married women aged 15-49 years are both remained at 57 percent (see IIPS and ICF, 2017). Female sterilization, at 54 percent, accounts for 95 percent of all contraceptive use in the state. Among the currently married women in Telangana, 5 per cent of 15-19 years old, one-fourth (24%) of 20-24 years old and half (48%) of 25-29 years old women have undergone procedure of female sterilisation.

Along with female sterilisation, hysterectomy (surgical removal of uterus) is prevalent in Telangana. NFHS4 (2015-16) estimates indicate that about eight (7.7%) per cent of women in the age of 15-49 years have had hysterectomy (see IIPS and ICF, 2017). Such procedure is higher among women with no schooling or below primary education, schedule tribes (STs) women, and among rural women. However, unlike the female sterilisation which is largely (more than three-fourths of cases) conducted in the public health facility, hysterectomy in most of the cases (81% of cases) is conducted in private health facility (*ibid*). Such a surgical procedure is considered to be more than medical necessity it is an unethical practices of private healthcare centres / hospitals in a business mode, sometimes making use of state health insurance schemes like Rajiv Arogya Sri (see Mamidi and Pulla, 2013).

### *Infant Mortality*

To begin the analysis of present note on maternal and child health in Telangana state with infant mortality rate (IMR), estimates based on both the Sample Registration System (SRS) and National Family Health Survey (NFHS) data sources indicate that the state of Telangana is having considerably high IMR especially when seen against the required outcome. As per SRS estimate IMR in the state in 2016 was 31, it is found to be high when compared to that of the ideal situation and to that of the other southern and neighbouring states like Kerala (10), Tamil Nadu (17), Maharashtra (19) and Karnataka (24) (see Figure 1). But it seems to be that its

performance is relatively better in terms of IMR in comparison with all India average and that of residual state of Andhra Pradesh (see Table 1 and 4 and Figure 1). While taking the baseline level of IMR at 39 in 2013 of undivided Andhra Pradesh, the rate of decline in Telangana seems to be faster / higher during the last three years (2013-16) compared to that of All India average and that of residual state of Andhra Pradesh. Moreover, as per the NFHS-4 estimates the Telangana state appeared to have reached near to the IMR target at 28 of the Millennium Development Goals (MDGs) set for the year 2015 (see Table 4).

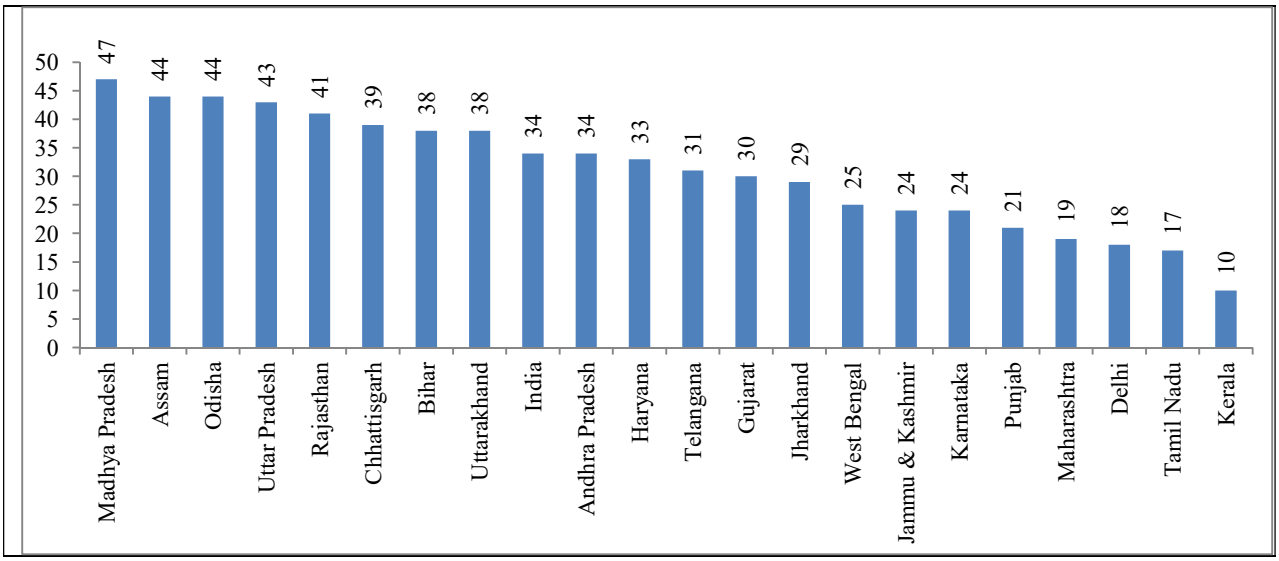
**Table 1: Infant Mortality Rate (IMR)**
**in Telangana, Andhra Pradesh and India : 2006-2016**

| State | Total | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
| **India** | **57** | **55** | **53** | **50** | **47** | **44** | **42** | **40** | **39** | **37** | **34** |
| Andhra Pradesh | 56 | 54 | 52 | 49 | 46 | 43 | 41 | 39 | **39** | **37** | **34** |
| Telangana | - | - | - | - | - | - | - | - | 35 | 34 | 31 |

**Notes:** 1. Infant Mortality Rate (IMR) is per 1000 live births; 2. Figures up to 2013 are for undivided Andhra Pradesh and those since 2014 are for residual state of Andhra Pradesh; 3. '-' not available separately for Telangana but included in undivided Andhra Pradesh.

**Source**: Sample Registration System (SRS) – Statistical Reports.

**Figure 1: Infant Mortality Rate (IMR) across Major States in India, 2016**



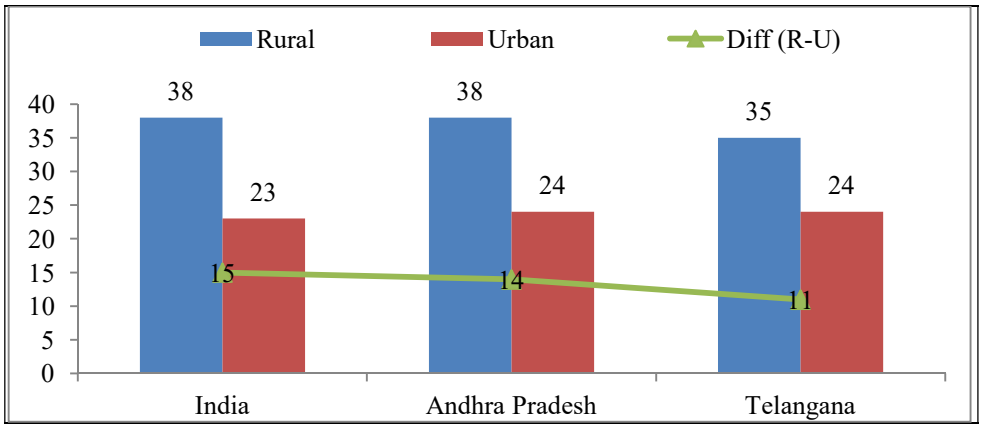

**Source**: Sample Registration System (SRS) – Bulletin (2017).

The Telangana state performance in respect of such rural-urban difference in IMR is observed to be moderate. There is a considerable level of variation in IMR between rural and urban areas of Telangana, such a difference however appears to be relatively low in the state when compared to the residual state of Andhra Pradesh and that of the national average (see Figure 2).

Recently, the state government launched the Telangana Newborn Action Plan, (TNAP), which is a part of the India Newborn Action Plan (INAP), an initiative of Government of India (GOI) that

was launched recently. It is 'a targeted strategy for accelerating the reduction of preventable newborn deaths and stillbirths' in the State and elsewhere in the country.

**Figure 2: Rural-Urban Difference in IMR, 2016**




**Note:** Diff (R-U) – difference between rural and urban IMRs.

**Source**: Sample Registration System (SRS) – Bulletin (2017).

***Maternal Mortality***

A high level of maternal mortality[6] in *India* is a cause of concern. The country is observed to contribute one-fourths of maternal deaths in the world (see CMS, 2016). Within India, the undivided state of Andhra Pradesh seems to have witnessed relatively less disadvantage and has been showing better performance. The maternal mortality ratio (MMR) in the state has been found to be much lesser than the all India average. The undivided Andhra Pradesh was found to be fourth best state in India in respect of having low MMR following the state of Kerala, Tamil Nadu and Maharashtra (CESS, 2017).

**Table 2: Maternal Mortality Ratio (MMR)**

| Year | Source | India | Andhra Pradesh | Telangana |
|---|---|---|---|---|
| 1997 | SRS | 408 | 220 | - |
| 1997-98 | SRS | 398 | 197 | - |
| 2004-06 | SRS | 254 | 154 | - |
| 2007-09 | SRS | 212 | 134 | - |
| 2010-12 | SRS | 178 | 110 | - |
| 2011-13 | SRS | 167 | 92 | 92 |
| 2015 | World Bank | 174 | - | - |

**Notes**: 1. Maternal Mortality Ratio (MMR) is number of deaths per one lakh live births; 2. Figures up to 2014 are for undivided Andhra Pradesh and those since 2014 are for residual state of Andhra Pradesh; 2. '-' not available, in case of Telangana estimates are included in undivided Andhra Pradesh.

**Sources**: 1. SRS estimates at NITI Ayog website see at http://niti.gov.in/content/maternal-mortality-ratio-mmr-100000-live-births; 2. World Bank.

The SRS estimates indicate that the undivided Andhra Pradesh had achieved the MDG target of MMR at 109 much before the terminal year of target i.e. 2015. The Telangana state appeared to

[6] The World Health Organisation (WHO) defines maternal mortality as the death of a woman during pregnancy or in the first 42 days after the birth of the child due to causes directly or indirectly linked with pregnancy.

have inherited such a relatively less disadvantage and better performance in this respect. There has not been so far any separate estimate for the state of Telangana. However, a media reported observation is that over a period of three years maternal deaths in the state have fallen from 380 (2013-14) to 363 (2014-15) to 230 (2015-16) (The Hans India, 2016). As the Commissioner of Health and Family Welfare, Government of Telangana has reported, the total deliveries in the state were 6.06 lakh in 2013-14 and 6.11 lakh in 2014-16. If we consider these figures as live birth, one may derive *the MMR of the Telangana state at 60*.

It has been observed that a large number / portion of maternal deaths are preventable through safe deliveries and adequate maternal care. The World Health Organisation (WHO) guidelines indicate that skilled attendance at birth backed up with emergency obstetric care when needed reduces risks of maternal deaths due to complications during delivery. Also, as WHO observes, when the expected mothers have certain antenatal care check-ups (a minimum of eight) during their pregnancy, it can reduce the risk of maternal mortality to a great extent.

***Institutional Deliveries***

In respect of institutional deliveries, although both the Telugu states are ahead of the national average and having more than 90 per cent of institutional deliveries, as per the SRS data Telangana appeared to be marginally lagging behind its counterpart (see Table 3). But the NFHS-4 estimates shows that its performance is not less than that of residual state of Andhra Pradesh (see Table 4). As regards the rural-urban difference in institutional deliveries both the Telugu states are on the same foot having same of such difference at 6 percentage points, much lower than that of the national average of nearly 20 percentage points (see Table 3).

**Table 3: Institutional Delivery - percent of live births where the mothers received medical attention at delivery at hospitals (Government or Private)**

| State/Location | | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *1* | | *2* | *3* | *4* | *5* | *6* | *7* | *8* | *9* | *10* | *11* |
| **India** | Total | **34.9** | **38.6** | **47.1** | **58.2** | **60.5** | **66.6** | **73.1** | **74.4** | **78.5** | **79.3** |
| | Rural | **24.9** | **28.7** | **38.3** | **49.2** | **53.9** | **60.7** | **67.9** | **69.7** | **73.2** | **74.2** |
| | Urban | **71.0** | **74.5** | **78.5** | **87.3** | **84.2** | **87.9** | **92.0** | **92.1** | **93.2** | **93.5** |
| Andhra Pradesh | Total | 56.2 | 63.7 | 70.9 | 74.4 | 88.1 | 90.7 | 92.1 | 93.6 | 94.9 | 95.5 |
| | Rural | 44.1 | 53.5 | 62.6 | 66.5 | 84.4 | 87.5 | 89.4 | 91.3 | 92.6 | 93.6 |
| | Urban | 91.8 | 92.7 | 93.7 | 95.5 | 98.1 | 98.6 | 99.2 | 99.7 | 99.8 | 99.8 |
| Telangana | Total | - | - | - | - | - | - | - | - | 90.6 | 92.0 |
| | Rural | - | - | - | - | - | - | - | - | 88.3 | 89.5 |
| | Urban | - | - | - | - | - | - | - | - | 94.4 | 95.6 |

**Notes:** 1. Figures up to 2013 refer to undivided Andhra Pradesh and that since 2014 refer to residual state of Andhra Pradesh; 2. '-' not available separately for Telangana but included in undivided Andhra Pradesh.

**Source**: Sample Registration System (SRS) – Statistical Reports.

The NFHS-4 estimates in respect of Antenatal care (ANC) indicates that the percentage of mothers who had antenatal check-up (during their pregnancy) in the first trimester is high in Telangana (83.1%) and residual state of Andhra Pradesh (82.4%) when compared to the national average (58.6%) (see Table 4). Despite their relatively better performance having marginal differences between them, both the Telugu states have been falling behind the required outcome

i.e. universal coverage. The percentage of mothers who had at least four antenatal check-ups during their pregnancy is much lower. Further, worse is the situation of mothers covering with all required ANCs. Less than half of the mothers in these two states are covered with all ANCs and the national average is further low. As regards the post-natal or post-partum care, around three-fifths of mothers had such care within two days of child birth (see Table 4). These are the some of the concerns still continued to rest with health care system of the state.

***Very High Rate of Cessarion-section Births that specific to Telangana State***

Although both the Telugu states are equally performing well in respect of institutional births having little above 90 per cent of total births in the respective states, the unique feature of the Telangana state is that it has **very high percentage of births in Cessarion section (C-section births) at 58 per cent** (see Table 3). It is considered as one of the highest incidence among major Indian states (see CESS, 2017). As a high proportion of institutional births in Telangana are associated with private hospitals it is something that must be related to interest of the private hospitals rather than medical necessity. A study in the past, based on NFHS-1 (1992-93) data, observed that in some states including the undivided state of Andhra Pradesh, the risk of undergoing caesarean section in private sector institutions is four or more times higher than that in the public sector (Mishra and Ramanathan, 2002).

**Table 4: Selected Indicators of Maternal and Child Health in Telangana in comparison with Andhra Pradesh and All India**

| Sno | Indicator | All India | | Andhra Pradesh | | Telangana |
|---|---|---|---|---|---|---|
| | | 2005-06 | 2015-16 | 2005-06 | 2015-16 | 2015-16 |
| *1* | *2* | *3* | *4* | *5* | *6* | *7* |
| 1 | % of mothers who had ANC – first trimester | 43.9 | 58.6 | - | 82.4 | 83.1 |
| 2 | % of mothers who had ANC – four visits | 37.0 | 51.2 | 86.0 | 76.3 | 75.0 |
| 3 | % of mothers who had ANC – full | 11.6 | 21.0 | | 43.9 | 42.2 |
| 4 | % of mother who had post-natal care within two days of child birth | 34.6 | 62.4 | 71.2 | 79.7 | 81.8 |
| 5 | % Institutional births | 38.7 | 78.9 | 68.6 | 91.6 | 91.5 |
| 6 | % of births in Cessarion section | 8.5 | 17.2 | - | 40.1 | 58.0 |
| 7 | % of Children (< 3 years) Breasted – within hour of birth | 23.4 | 41.6 | 22.4 | 40.1 | 37.1 |
| 8 | % of Children (< 6 months) Breastfed – exclusively | 46.4 | 54.9 | 62.7 | 70.2 | 67.3 |
| 9 | Infant Mortality Rate (IMR – per 1000) | 57.0 | 41.0 | 68.4 | 35.0 | 30.0 |
| 10 | Under Five Mortality Rate | 74.0 | 50.0 | 78.7 | 41.0 | 32.0 |
| 11 | % of Children (< 5 Yrs) Stunted | 48.0 | 38.4 | 38.4 | 31.4 | 28.1 |
| 12 | % of Children (< 5 Yrs) Underweight | 42.5 | 35.7 | 29.8 | 31.9 | 28.5 |
| 13 | % of Children (< 5 Yrs) Wasted | 19.8 | 21.0 | 14.9 | 17.2 | 18.0 |
| 14 | % of Children (6-59 months) with Anaemia | 69.4 | 58.4 | 79.6 | 58.6 | 60.7 |
| 15 | % of women (15-49 Yrs) with Anaemia | 55.3 | 53.0 | 62.7 | 60.0 | 56.7 |
| 16 | % of Pregnant women with Anaemia | 57.9 | 50.3 | | 52.9 | 49.8 |
| 17 | % of Women with < normal BM | 35.5 | 22.9 | 30.8 | 17.6 | 23.1 |
| 18 | % of Children (12-23 months) fully immunised / vaccinated – All | 43.5 | 60.0 | 46.0 | 65.3 | 68.1 |
| 19 | % of mothers benefited from JSY | - | 36.4 | - | 17.4 | 12.3 |

**Notes:** 1. Infant mortality rate is per 1000 live births; 2. '-' not available; 3. Fully vaccinated / immunized means having BCG, measles, and 3 doses each of polio and DPT; 4. ANC – Antenatal Care; JSY – Janani Suraksha Yojana.

**Source**: NFHS-3 (2005-06), NFHS-4 (2015-16) Fact Sheets.

According to the estimate of NFHS-4, the proportion of institutional births in public facility is 31 per cent in Telangana, 38 per cent in the residual state of Andhra Pradesh while the national average is 52 per cent. The rest of the child births have taken place in private health care institutions of varying size. It is interesting to note that when compared to that of national average and the residual state of Andhra Pradesh the percentage of live births in C-sections are higher in the state of Telagana in both the private (75%) and public (40%) hospitals (see NFHS-4, 2017: Factsheets). It is fairly higher when seen against the WHO's benchmark pointing it to be at 10 to 15 per cent of live birth deliveries (CESS, 2017). Telangana state registered much higher than 25 percent of births in Europe and 41 percent of births in North America that occurs via a C-section (see Keag *et al.*, 2018). Research studies have shown that undesirable C-section delivery has certain associated long-run risks for both the mother and child (see Keag *et al.*, 2018). In this regard, it is observed that a valuable medical procedure having undesirable social consequences because of inappropriate utilization (see CESS, 2016). It has implications for both the health of mother and burdening cost of health care for the poor and lower economic classes.

***Costs of Delivery Care: Expensive Child Births in Telangana***

When we examine the average cost (medical and other costs) of child birth in hospital per case, as estimated by National Sample Survey Office (NSSO) based on its 71st round (2014) survey on social consumption (health), it is found to be higher in Telangana state when compared to that of all India average and that of residual state of Andhra Pradesh (see Table 5). There is a huge difference in cost of child birth between private and public hospitals; it is so across states and at the national level but such a public-private difference is relatively higher in Telangana.

**Table 5: Expenditure (Rs. ) on Child Birth, 2014**
**: Average Expenditure per Hospitalised Child Birth during the last 365 Days**

| Sno | State | Rural | | | Urban | | |
|---|---|---|---|---|---|---|---|
| | | Private | Public | Both | Private | Public | Both |
| *1* | *2* | *3* | *4* | *5* | *6* | *7* | *8* |
| 1 | All India | 16698 | 2647 | 6863 | 21919 | 3208 | 13039 |
| 2 | Andhra Pradesh | 15418 | 2776 | 10015 | 18896 | 2485 | 13657 |
| 3 | Telangana | 22101 | 2647 | 15083 | 25261 | 3585 | 20645 |
| 4 | Rajasthan | 14958 | 1707 | 4069 | 14933 | 1942 | 6339 |

**Notes**: 1. Including Medical and Other expenditure combined; 2. Reference period of expenditure is last 365 days.

**Source**: NSSO (2016) *Health in India*, Report No. 574 based on its 71st Round (2014) Social Consumption Survey on Health.

This higher average cost of child birth in Telangana state must be due to higher percentage of child births in private hospitals in the state and higher percentage of C-section births which inevitably accompanied with extra cost of surgical procedures and medicals along with more number of days stayed in hospital per child birth when compared with normal deliveries. In fact the NSSO estimates shows evidence on the average number of days of stay in hospital in case of child birth is one of the highest in Telangana (NSSO, 2016). It is obvious that C-section births need to stay more number of days in hospital than that of normal delivery. When the average cost of child birth combining all those in public and private hospitals (i.e. both) is considered, the national average and that of residual state of Andhra Pradesh is two-thirds of what Telangana

spends. Further, if compared with a state having very low cost of child birth, for instance Rajasthan, it is three to four times in Telangana state (see Table 5).

***Breastfeeding and Nutritional Status of Children***

Breast feeding is crucial in ensuring good health among infants. Early initiation of breast feeding by the mother is very important for the physical and cognitive development of the child. In this regard, not only the achievement of Telangana state is far from the required but also the performance of state in this regard in comparison with residual state of Andhra Pradesh is marginally lagging behind. As the NFHS-4 (2015-16) estimates show, around two-thirds of children below six months in the Telangana state are being exclusively breastfed and it is found to be lesser at around little above one-third of them among children below three years of age (see Table 4).

As regards the nutritional status of children, under-nutrition among children is at considerable level in the state of Telangana (see Table 4). As the estimates of recent NFHS-4 (2015-16) indicates, around 28 per cent of children below five years of age in the state of Telangana are stunted and same percentage of them are found to be underweight. Another disorder 'wasting' reflecting the under-nutrition is observed for 18 per cent of these children.

As regards the immunisation of children, NFHS-4 (2015-16) estimates shows that only two-thirds of children (12-23 months old) in the Telangana state are fully immunised in having all the prescribed / recommended vaccination (see Table 4) and rest one-third of the children are not immunised. Achievement is falling short of required (universal coverage of children), its performance is relatively better when compared with national average and that of residual Andhra Pradesh.

Prevalence of anaemia among women and children appears to be considerably high at all India level and in Andhra Pradesh (residual) and Telangana. Around three-fifths of children (6-59 months) and more than half of the women reproductive age (15-49 years) in general are affected with anaemia (see Table 4). Around half of the pregnant women have been found to be anaemic at national level and in both the Telugu states. The anaemia which indicates the low level of haemoglobin in blood, has detrimental effect on health of women and children. Especially, anaemia among pregnant women increases the risk of premature delivery, pre-natal mortality and maternal mortality (Sekhar, 2017).

In all, although its performance in certain indicators (for instance, IMR) is relatively much better than all India average and performing no less than residual state of Andhra Pradesh, achievement of the Telangana state in respect of maternal and child health is falling far short of ideal situation or required health outcomes and when compared with the rest of the south Indian states.

## IV Health Inequalities: across Social Groups

According to HDR 2017 of Telangana that has constructed human development index across social groups indicate that inequalities across social groups in general and in the health dimension in particular in the state of Telangana are very narrow (see CESS, 2017; Table 6). Health index constructed for HDR 2017 was based on the household survey estimates of District Level Household Survey (DLHS). For constructing health index it was considered the coverage under safe motherhood and childhood facilities (see CESS, 2017).

**Table 6: Health Inequalities: Health Index of HDI across Social Groups in Telangana**

| Sno | Location | Year | All | SC | ST | BC | OC |
|---|---|---|---|---|---|---|---|
| 1 | Total (Rural and Urban) | 2002-04 | 0.478 | 0.499 | 0.423 | 0.481 | 0.477 |
| | | 2012-13 | 0.750 | 0.752 | 0.796 | 0.744 | 0.742 |
| 2 | Rural | 2002-04 | 0.483 | 0.514 | 0.419 | 0.478 | 0.513 |
| | | 2012-13 | 0.747 | 0.725 | 0.789 | 0.746 | 0.805 |

**Note**: HDI – Human Development Index; SC –Scheduled Caste; ST – Scheduled Tribe; BC – Backward Classes / Castes; OC – the Other Classes / Castes.

**Source**: CESS (2017): HDR 2017 of Telangana State.

According to another study that examined the inequalities in certain health outcomes in the state of Telangana and performance of the state in selected health indicators across socio-religious groups based on the analysis of DLHS-4 unit record data, observed that inequalities in respect of nutrition status among children below five years of age in the state, as presented in Table 7 below, were not so significantly high but there are differences across socio-religious groups (see Unisa and Usman, 2017).

**Table 7: Percentage of Children under age five years classified as Undernourished according to three anthropometric indices across socio-religious categories**

| Nutritional status | Prevalence by socio-religious categories | | | | | | |
|---|---|---|---|---|---|---|---|
| | Hindu - SCs | Hindu - STs | Hindu - OBCs | Hindu - OCs | Muslim - OBCs | Muslim - Others | Total |
| *1* | *2* | *3* | *4* | *5* | *6* | *7* | *8* |
| ***Undernourished*** | | | | | | | |
| Stunting (Short for age) | 24.6 | 19.1 | 24.3 | 26.0 | 21.7 | 19.8 | 23.8 |
| Wasting (Low weight for height) | 26.5 | 32.7 | 32.0 | 22.8 | 23.9 | 23.3 | 29.5 |
| Underweight (low weight for age) | 32.1 | 26.4 | 29.3 | 21.9 | 31.3 | 23.7 | 29.5 |
| ***Severely Undernourished*** | | | | | | | |
| Stunting (Short for age) | 13.2 | 11.9 | 13.9 | 16.0 | 13.0 | 11.9 | 13.3 |
| Wasting (Low weight for height) | 16.9 | 16.8 | 19.6 | 12.0 | 15.2 | 20.9 | 18.3 |
| Underweight (low weight for age) | 13.7 | 11.7 | 13.8 | 11.4 | 11.5 | 10.5 | 13.2 |

**Notes**: Computed for children below age five from the individual level anthropometric data file of Telangana, District Level Household Survey (DLHS -4), 2012-2013.

**Source**: Unisa and Usman (2017).

The research studies that focused on the performance of Muslim community in the state in respect of their health conditions observed that on some of the parameters such as IMR, institutional deliveries, nutritional status of Children, Muslim community is performing better when compared to any other religious community in the state (see Sekhar, 2017; Unnisa and Usman, 2017; Bhagat and Ali, 2017; Naidu, 2017; COI, 2016).

## V Healthcare Infrastructure: Health Workers and Care Facilities

One of the most important factors in health care in general and maternal and child health care (MCH) in particular is availability of health care facilities and health care workers particularly the skilled health professionals such as doctors (Physicians, surgeons and specialists) and nurses along with other paramedics. Based on Census 2001 and 2011 data we have examined the availability of health workers while standardising their availability to population per health worker (P/HW) and health workers per 1000 population (HW/1000P). Census B series Tables provide information on workers by national industrial classification (NIC) and classification of occupations (NCO). As there is no other better source, for a quick assessment / analysis we have used B Series Table of Census 2001 and 2011 (B-18 Table) providing information on workers by their industrial classification (NIC-98). It is to be noted it is crude form in the sense these health workforce by this classification (NIC) consists of all kinds and categories of workers (incl. unskilled attendants to skilled doctors) engaged in health care sector[7] (see Motkuri *et al.*, 2017).

**Table 8: Availability of Health Workers in Telangana and Selected other States, 2001**

| Sno | State | Rural and Urban | | | | Rural | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | P/HW | | HW/1000P | | P/HW | | HW/1000P | |
| | | 2001 | 2011 | 2001 | 2011 | 2001 | 2011 | 2001 | 2011 |
| ***1*** | ***2*** | ***3*** | ***4*** | ***5*** | ***6*** | ***7*** | ***8*** | ***9*** | ***10*** |
| 1 | All India | 442 | 263 | 2.3 | 3.8 | 838 | 395 | 1.2 | 2.5 |
| 2 | United Andhra Pradesh | 437 | 251 | 2.3 | 4.0 | 718 | 347 | 1.4 | 2.9 |
| 3 | Residual Andhra Pradesh | 498 | 261 | 2.0 | 3.8 | 799 | 352 | 1.3 | 2.8 |
| 4 | Telangana state | 371 | 239 | 2.7 | 4.2 | 616 | 349 | 1.6 | 2.9 |
| 5 | Tamil Nadu | 404 | 233 | 2.5 | 4.3 | 987 | 389 | 1.0 | 2.6 |

**Notes**: 1. **P/HW** – Population per Health Worker; **HW/1000P** – Health Workers per 1000 Population; 2. For Telangana state and residual state of Andhra Pradesh district level data is aggregated to derive the respective states' figures.

**Source**: Author's Calculations based on Census 2001 and 2011 (B-18 Table) Data.

When examined the availability of health workers by standardised indicators (P/HW or HW/1000P) for the year 2001 and 2011, a couple of general observations are as follows. It is interesting to note that there was a remarkable improvement across states in this regard during the last decade (2001-11). Rural areas as well witnessed such an improvement during the period. But the availability of health workers in rural areas is far lower than that of the situation in case when rural and urban are combined. It is due to heavy concentration of health care facilities and thereby health workers in the urban centres. It is true for all the states in India.

Among the selected states one could find that Telangana state was relatively better than residual Andhra Pradesh and the national average. More interestingly, Telangana is faring in this respect even better than Tamil Nadu (see Table 8). For the two indicators presented in the Table 8, lower value of P/H and higher value of HW/1000P for a state indicates relatively better performance. But with sparsely populated state with population density of 312 in 2011 Telangana needs more number of health workers than Tamil Nadu which is, relatively, densely

[7] For any further exposition on this aspect of sources and information and analysis on health workers see Motkuri and Naik (2009); Motkuri (2011); Motkuri *et al.* (2017);

populated having the density of population at 555. Further, Telangana is having sparsely populated tribal population (STs) at around 10 per cent state population whereas it is only one per cent in Tamil Nadu. One can observe that health outcomes especially those of maternal and child related ones in Tamil Nadu state are much better than that in the state of Telangana despite having lower health workers density (i.e. health workers per 1000 population) than that of the latter state, Telangana.

If referred to the World Health Organisation's (WHO's) threshold of 4.45 skilled health professionals per 1000 population (see WHO, 2016), the shortage in availability even all kinds of workforce in health care sector is very huge in India and Telangana. Although we do not have specific data here on the number of skilled health workers per 1000 population, but one can say the situation in this respect is even worse.

However, when observed the performance of major states (22 excluding NCT Delhi) in India on these select indicators, the state of Telangana found to be among top five states performing relatively better in 2001 but slipped down to tenth best state in 2011. It is competing with the other southern states like Tamil Nadu and Karnataka. Telangana state is having certain edge as it has been witnessing since 1990s fast growing variable size of private sector ranging small clinics to super speciality and corporate hospitals although they are largely concentrated in urban areas and in Hyderabad. Such a concentration of private health care institutions in urban areas and capital regions can be observed across states. Despite that Telangana state in this regard is faring better even rural areas. Growing connectivity (through roads and transportation) between rural villages and urban towns and cities has been facilitating the access to emerging private health care in the urban landscape of the state. The fact that more two-thirds of the institutional deliveries in the state in 2015-16 took place in private sector and distinctively high cost of delivery reflecting the growing dependency on the private health care and acting as an incentive for its further expansion in the state.

One can infer that it may be due to this advantage in terms availability of health workers it is bringing down faster the infant mortality in the state of Telangana, if one follows observation of the research study in the past that found a strong negative correlation (coefficient of -0.87) between the availability of health workers and infant mortality rate across major states in India (see Motkuri and Naik, 2009). But it contrasts with a particular case analysis that compares the situation in Telangana and Tamil Nadu. One has to explore the other factors as well in this respect.

### *Rural Health Care Facilities*

Rural health care situation in general and that of maternal and child health in rural area particular has always been cause of concern. According to Government of India's report ***Rural Health Statistics 2014-15*** the state of Telangana, in 2015, consists of 4863 health sub-centres (HSCs), 668 primary health centres (PHCs) and 114 community health centres (CHS) to serve healthcare needs particularly mother and child healthcare needs of the rural population in the state (see GOI, 2015). Along with 87 urban health centres (UHCs), the state of Telangana has at the

referral and/or tertiary level there are 42 Area hospitals and 8 District hospitals[8]. Along with 102 hospitals catering Maternity & Child Health services, besides other services 5 hospitals meant for Mother and Child Care and 5 Teaching hospitals serving this purpose. Besides, at the village level in rural areas, at least one Accredited Social Health Activist (ASHA) per village which is a component of National Rural Health Mission (NRHM) 2005, has been placed in the state. According to estimate of the fourth District Level Household Survey (DLHS-4) in 2012-13, nearly 94 per cent of villages in the state of Telangana were found to have ASHA workers. At present there are about 27474 ASHA workers in the state[9].

The estimate of DLHS-4 (2012-13) indicates that nearly 86 per cent of villages in Telangana have a HSC within three Kms. distance and about two-thirds (64.6%) of villages in the state have PHC within 10 Kms. distance. Although most of the PHCs and CHCs are reportedly facilitating 24x7 services, availing such services from these centres seems to be poor. As DLHS-4 estimates show only little above one-thirds (39%) of PHCs in the state conducted at least 10 deliveries during last one month on 24x7 hours basis (throughout the day and week). One must understand this with lack of or shortage skilled human resources in the public facilities (see Motkuri *et al.*, 2017). Going by the DLHS-4 (2012-13) estimate less than half (43%) of PHCs in the Telangana state have a lady medical officer and only 21 per cent of PHCs have residential quarter for medical officers. Against such odds, the usage of private health facilities has been increasing in the state. Besides, certain other things are also at work in facilitating their access to private services. As we have observed above less than one-third of institutional deliveries in the state have taken place in public facility, and the rest of them are private hospitals. Similarly for the other healthcare needs of mother and child, approaching private healthcare facilities is more than the public one in the state.

One of the two important features of healthcare in both the Telugu states is the implementation of Rajiv Arogyasri Scheme (RAS), which is a health insurance scheme applicable for the families living in below poverty line (BPL). There are instances of misuse by private health care institutions (for instance see Mamidi and Pulla, 2013). Despite certain ideological and functional issues[10] associated with the scheme (i.e. RAS), in the absence of any other better alternative it is to some extent serving the poor and saving lives. As per the DLHS-4 (2012-12) estimates about 53.5 per cent of households in Telangana state covered under a Government Health Scheme which is nothing but the RAS. Along with other insurance schemes or arrangements (such as RSBY[11] - 2.8%, community based health insurance – 2.2%, Mediclaim – 0.8% and any private ones – 2%) in public and / or private, around 60 per cent of the households were covered under one or the other health insurance scheme (see Unisa and Usman, 2017). As per the latest NFHS-4 (2015-16) estimates, nearly two-thirds (66%) of households in the state are covered with health insurance (i.e. with any usual member covered by a health scheme or health insurance).

[8] Commissionerate of Health and Family Welfare, National Health Mission, Government of Telangana. See at: http://chfw.telangana.gov.in/getInfo.do.

[9] The 2nd Quarterly Report 2017-18 (July–Sep.), Commissioner of Health and Family Welfare, Govt. of Telangana.

[10] For exposition on these please see Prasad and Raghavendra (2012); Vijay (2012); and Mamidi and Pulla (3013).

[11] Rashtriya Swasthya Bima Yojana (RSBY) a Government of India's Health Insurance Scheme launched in early 2008 following the Unorganised Workers Social Security Act 2008, for the Below Poverty Line (BPL) families with the objectives to reduce out-of-pocket (OOP) expenditure on health and increase access to health care.

The other one is providing emergency medical service (EMS) or emergency care through '108' ambulance service transportation vehicles[12]. In this service, the emergency medical technicians (EMTs) provide pre-hospital care while transporting patient / victim to appropriate hospital for stabilization. It is able to connect the remote and rural areas to nearby referral health facility and facilitating access to healthcare.

Under the Integrated Child Development Scheme (ICDS) and through Anganwadi Centres (AWCs) certain measures were there in the state for providing healthcare and nutritional services to small children below 5 years. In Telangana state there are about 35700 AWCs covering 22.28 lakh stakeholders consisting of pregnant and lactating women and children aged between seven months old to those of below six years in the state[13]. As part of ICDS, the state government is providing healthcare needs such as vaccination and medicines to children below five years and to ensure proper nourishment of the children it is providing eggs and 'balamrutam' nutritional food to children in the state. The Telangana state government has initiated ***Arogya Lakshmi scheme*** on 1st Jan, 2015 to improve nutritional status among pregnant and lactating women and to reduce low birth weight, IMR, malnutrition among children below six years[14].

## VI Concluding Remarks

The present note is about the status of Maternal and Child Health (MCH) in the undivided Andhra Pradesh and separate Telangana. It is bring out the performance of the state of Telangana in continuum from the levels inherited from the undivided Andhra Pradesh. The analysis above indicates that the achievement of Telangana state in respect of maternal and child health is falling far short of ideal situation or required health outcomes. The only solace is that its performance is relatively much better than all India average and performing no less than residual state of Andhra Pradesh. The associative factors one could observe for the relatively better performance of Telangana state in this regard is perhaps its relative advantage in respect of infrastructure particularly that of the availability of health workers.

* * *

[12] They are operated through Emergency Management and Research Institute (EMRI) in the private-public partnership (PPP) mode that currently operated by a corporate body GVK. Such an initiative was launched in 2005 by state Government of united Andhra Pradesh (see Motkuri and Mishra, 2013; Mamidi and Pulla, 2013; Vijay, 2012; Prasad and Raghavendra, 2012).

[13] As reported by the Women and Child Welfare Department, Government of Andhra Pradesh. See at http://wdcw.tg.nic.in/.

[14] Under ***Arogya Lakshmi*** programme 16 eggs, per month are provided to the children in the age group of 7 months to 3 years, along with eggs, wheat, milk powder, red gram, sugar and oil. Children between the age group of 3 and 6 years are provided daily with one egg, rice, dal, curries and snacks. There are about 10.4 lakh children between 7 months to 3 years age group, 7.4 lakh children between 3 years to 6 years and 4.7 lakh pregnant and lactating women availing the programme.

## References


Bhagat, R. B. and Imtiyaz Ali (2017). "Emigration and Health Status: The Context of Muslims", Background paper, Commission of Inquiry on Conditions of Muslim, Government of Telangana, Hyderabad.

CESS (2008). ***Human Development Report 2007: Andhra Pradesh State***, Centre for Economic and Social Studies & Planning Department, Government of Telangana, Hyderabad.

CESS (2016). *Deciphering the Determinants and Impacts of Rising Rates of Caesarean Section and Offering Potential Solutions*, Document based on a Workshop Organized by UNICEF, CESS and the Government of Telangana that held during 13-14 April 2016, Centre for Economic and Social Studies (CESS), Hyderabad. Accessed at http://www.cess.ac.in/cesshome/pdf/Rising%20Rate%20of%20C-Sections%20National%20Consultation%20Report.pdf

CESS (2017). ***Human Development Report 2017: Telangana State***, Centre for Economic and Social Studies & Planning Department, Government of Telangana, Hyderabad.

CMS (2016). *Maternal And Child Health: Media Guide For Andhra And Telangana*, CMS Media Lab findings based on a study of Health Coverage in English, Hindi and Telugu television news channels and newspapers (Delhi and Hyderabad), 2006-2012. Accessed at: http://cmsindia.org/sites/default/files/Health-Resource-brochure.pdf

COI (2016). *Report of the Commission of Inquiry on the Socio-Economic and Educational Conditions of Muslims in Telangana*, Commission of Inquiry, Government of Telangana, Hyderabad.

Dev, S. Mahendra; C. Ravi and Venkatanarayana Motkuri (2009). ***Human Development in Andhra Pradesh: Issues and Challenges***, Centre for Economic and Social Studies, Hyderabad.

George, Sobin (2015). "Caste and Care: Is Indian Health Delivery System Favourable for Dalits", Institute for Social and Economic Change, Bangalore.

GOI (2015). ***Rural Health Statistics 2014-15***, *Statistics Division*, Ministry of Health and Family Welfare, Government of India, New Delhi.

GOI (2017). **National Health Profile 2017**, *Central Bureau of Health Intelligence*, Directorate General of Health Services, Ministry of Health and Family Welfare, Government of India, New Delhi.

GOTS (2017). ***Socio-Economic Outlook-2017 (Reinventing Telangana: Looking Back and Ahead)***, Planning Department, Government of Telangana State, Hyderabad.

IIPS and ICF (2017). ***National Family Health Survey (NFHS-4), India, 2015-16: Telangana***. Mumbai: International Institute for Population Sciences (IIPS).

Keag O.E.; J. E. Norman, S.J. Stock (2018). "Long-term risks and benefits associated with cesarean delivery for mother, baby, and subsequent pregnancies: Systematic review and meta-analysis", PLoS Medicine, Vol.15(1), pp.: e1002494. https://doi.org/10.1371/journal.pmed.1002494. Accessible at: http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1002494.

Mamidi, Bharath Bhushan and Venkat Pulla (2013). "Hysterectomies and Violation of Human Rights: Case Study from India", *International Journal of Social Work and Human Services Practice* (Horizon Research Publishing), Vol.1 (1), September, pp. 64-75.

Mishra, Uday S. and Mala Ramanathan (2002). "Delivery related complications and determinants of Cesarean section rates in India", *Health Policy and Planning*, Vol. 17 (1), April. pp. 90-98.

Motkuri, Venkatanarayana (2011). "Access to Health Care in Andhra Pradesh: Availability of Manpower", MPRA Paper No. 47932. Accessed at http://mpra.ub.uni-muenchen.de/47932/

Motkuri, Venkatanarayana and U. S. Mishra (2013). "Rising Mortality Rate in Andhra Pradesh: Towards a Demystification", MPRA Paper No. 48439, Accessed at http://mpra.ub.uni-muenchen.de/48439/ .

Motkuri, Venkatanarayana and V. Suresh Naik (2010). "Workforce in Indian Health Care Sector", *The Asian Economic Review*, Vol. 52 (2), August, Hyderabad.

Motkuri, Venkatanarayana; T. Sundara Vardhan and Shakeel Ahmad (2017). "Quantity and Quality of Human Resources in Health Care: Shortage of Health Workers in India", MPRA Paper No 84332. Accessible at https://mpra.ub.uni-muenchen.de/84332/1/MPRA_paper_84332.pdf

Naidu, B. M. (2017). "Conditions of Muslims in Telangana: Field Survey Observations", Background paper, Commission of Inquiry on Conditions of Muslim, Government of Telangana, Hyderabad.

NFHS4 (2017). ***NFHS-4 Fact Sheets: India, Andhra Pradesh and Telangana***, International Institute of Population Studies (IIPS), Mumbai.

NSSO (2016). ***Health in India***, Report No. 574, National Sample Survey Officer, Government of India, New Delhi.

Prakasamma, M. (2009). "Maternal Mortality Reduction Programme in Andhra Pradesh", *Journal of Health Population Nutrition*, Vol. 27 (2), April, pp.: 220-234.

Prasad, N. P. and P. Raghavendra (2012). "Healthcare Models in the Era of Medical Neo-liberalism: A Study of Aarogyasri in Andhra Pradesh", *Economic and Political Weekly*, October 27, 2012, Vol. xlvii (43), p 118-126.

Sekhar, P. Satya (2017). "Health and Nutrition Status of Muslims", Background paper, Commission of Inquiry on Conditions of Muslim, Government of Telangana, Hyderabad.

SRS (2017). **SRS Bulletin**, September 2017, Sample Registration System (SRS), RGI, Government of India, New Delhi.

The Hans India (2016). "Health Sector in Bangaru Telangana", April 23, 2016. Accessed at: http://www.thehansindia.com/posts/index/Telangana/2016-04-23/Health-Sector-in-Bangaru-Telangana/223745.

Unisa, Sayeed and Mohd. Usman (2017). "Health and Nutrition Status of Muslims: The Context of Muslims in Telangana", Background paper, Commission of Inquiry on Conditions of Muslim, Government of Telangana, Hyderabad.

Vijay, G. (2012). "The Business of Health Care and the Challenge of Health Security: The Case of Aarogyasri Health Insurance Programme in Andhra Pradesh", in K. P. Kannan and Jan Breman (eds.) ***The Long Road to Social Security***, OUP, New Delhi.

WHO (2016). ***Global strategy on Human Resources for Health: Workforce 2030***, World Health Organisation (WHO), Geneva.