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Urban-Rural Disparity in Family Planning Use in India

Aalok Ranjan Chaurasia
Chandan Kumar

MLC Foundation
'Shyam' Institute

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Aalok Ranjan Chaurasia
Chandan Kumar

Abstract

This paper analyses urban-rural disparity in family planning use in India and in its constituent states and Union Territories during the 30 years period between 1992-2021. Based on the prevalence of different family planning methods available from different rounds of National Family Health Survey, the paper reveals that urban-rural disparity in family planning use has decreased significantly during the period under reference largely because of relatively slower improvement in the prevalence of different family planning methods in urban areas of the country. The paper also reveals that urban-rural disparity in the use of permanent family planning methods and in the traditional family planning methods has increased in recently years which calls for reinvigorating family planning services delivery in the urban areas of the country. The paper also reveals significant variation in urban-rural disparity in family planning use across states/Union Territories of the country.

Key Words

India, states, Union Territories, family planning use, urban-rural disparity, disparity index

Introduction

The urban-rural disparity in family planning use in India is well-known. According to the latest National Family Health Survey 2019-21, more than 69 per cent of the currently married women in the reproductive age group (15-49 years) were practising a family planning method at the time of the survey compared to around 65 per cent in the rural areas (Government of India, 2021). In 1992-93, these proportions were 51 per cent and 37 per cent respectively (Government of India, 1997). On the other hand, more than 45 per cent currently married women of reproductive age in the urban areas were using a modern family planning method in 1992-93 compared to 33 per cent in the rural areas. In 2019-21, these proportions were 58.5 and 55.5 per cent respectively. These differences in the use of family planning methods in urban and rural areas are the result of the urban-rural difference in the use of specific family planning methods and it is not necessary that use of all family planning methods is always high in urban or in rural areas as compared to rural or urban

areas. There may be a possibility that use of some family planning methods is higher in the urban areas while use of other methods may be higher in the rural areas so that the urban-rural difference in the aggregated use of all family planning methods may not reflect the true urban-rural disparity in family planning use. It is therefore imperative that urban-rural disparity in the use of different family planning methods is analysed separately, and then urban-rural disparity in the use of specific family planning methods is combined into a single index of urban-rural disparity in family planning use. However, to the best of our knowledge, there is no study which has analysed the urban rural disparity in family planning use in India. The present study is probably and so obviously the first to measure the urban-rural disparity in family planning use in the country and to analyse the trend in the disparity in urban and rural areas during the 30 years between 1992-93 and 2019-21. The study also analyses the relative contribution of the urban-rural disparity in the use of different family planning methods to the urban-rural disparity in overall family planning use. The urban-rural disparity in the use of different family planning methods reflects the difference in the choices and preferences of urban couples about different family planning methods compared to choices and preferences of rural couples. The urban-rural disparity in family planning use also reflects the difference in the availability and access to different family planning methods in urban and rural areas.

The analysis of urban-rural disparity is essentially an arbitrary procedure, as there are no plausible theories or hypotheses to yield a prediction of what the urban-rural disparity in family planning use should be. Ideally, there should be no urban-rural disparity in the use of different family planning methods. There are, however, both endogenous and exogenous factors that contribute to the observed urban-rural disparity in the use of different family planning methods. Main reason behind the urban-rural disparity in contraceptive use that is endogenous to the family planning services delivery system is the organisation of family planning services in urban and rural areas. Delivery of family planning services in India is an integral component of the public health care delivery system. In the rural areas of the country, a nested public health care delivery system is in place in which every rural habitation is nested to health sub-centre, every health sub-centre is nested into primary health centre and every primary health centre is nested into community health centre. This nested system ensures, at least in paper, that every currently married woman in the reproductive age group is mapped into the system. Moreover, an extension approach is adopted for the delivery of family planning services in the rural areas. In the urban areas, on the other hand, no such nested public health care delivery system exists and the delivery of family planning services in the urban areas is essentially clinic or hospital-based which does not ensure that every currently married woman of reproductive age in the urban areas is mapped to the public health care delivery system.

There are many exogenous factors also that influence use of different family planning methods in urban and rural areas. Use of different family planning methods has been found to be directly related to the educational status of women and the level of education of women is higher in urban as compared to rural areas. The availability and access to different family planning methods, especially, modern spacing methods, has also been found to be relatively better in the urban areas as compared to the rural areas which also contribute to higher family planning use in the urban areas. It is also argued that the disparity in family planning use in urban and rural areas may be because of the difference in the number of children desired by urban and rural women. However, it has also been argued that one reason behind the urban-rural disparity in the use of different family planning methods is the inequality that reflects the inability of women in urban or rural areas in achieving their desired family size because of problems of availability and accessibility of different family planning methods. Finally, a range of social and cultural factors also influence family planning use in urban and rural areas differentially.

In this paper, we use the data available from different rounds of the National Family Health Survey to analyse the urban-rural disparity in family planning use in India and in its constituent states/Union Territories on the basis of a disparity index that has been developed for the purpose. The paper analyses both trend in the disparity in the disparity in the use of different family planning methods in the country and in its constituent states and Union Territories during the period 1992-93 through 2019-21 and the variation in the urban-rural disparity in the use of different family planning methods across states and Union Territories. To the best or our knowledge, such an analysis has never been carried out in India despite the fact that India was a pioneer of the family planning movement in the world but has relevance to planning and programming for family planning services delivery in the country.

The paper is organised as follows. The next section describes the disparity indexes used in the analysis. Section three describes the data source used in the analysis. The paper uses estimates of the prevalence of different family planning methods grouped into modern spacing methods, permanent methods, and traditional family planning methods available from five rounds of the National Family Health Survey carried out in 1992-93; 1998-99; 2005-06; 2015-16; and 2019-21 in the country. Section four discusses patterns and trends in the prevalence of modern spacing methods, permanent methods, and traditional methods in in urban and rural areas of the country. Measures of urban-rural disparity in the use of different family planning methods and variation in urban-rural disparity across states and Union Territories of the country are discussed in section five of the paper. The last section of the paper summarises main findings of the analysis and discusses their relevance to the family planning services delivery system in the country.

Measuring Urban-Rural Disparity in Family Planning Use

The urban-rural disparity in contraceptive use can be measured in absolute terms as well as in relative terms. In absolute terms, the urban-rural disparity may be measured in terms of the arithmetic difference between method-specific prevalence urban and rural areas. If u_i is the prevalence of method i in the urban areas and r_i is the prevalence in the rural areas, then the absolute disparity in the use of method i may be defined as

$$AD_i = u_i - r_i \quad (1)$$

Notice that AD_i can be both positive and negative. When $u_i > r_i$, $AD_i > 0$. When $u_i < r_i$, $AD_i < 0$. When $u_i = r_i$, $AD_i = 0$. In other words, the larger the deviation of ADi from 0 the greater the urban-rural disparity in contraceptive use.

On the other hand, in relative terms, urban-rural disparity in the use of family planning method i is defined as

$$RD_i = u_i / r_i \quad (2)$$

The limiting value of RD_i is 1 which means no urban-rural disparity in the use of family planning method i. When $u_i > r_i$, $RD_i > 1$. When $u_i < r_i$, $RD_i < 1$. When $u_i = r_i$, $RD_i = 1$. In other words, the larger the deviation of RD_i from 1 the greater the urban-rural disparity in relative terms.

The use of arithmetic difference between or ratios of prevalence of family planning use is, however, hazardous in measuring urban-rural disparity in family planning use because both are highly influenced by the level of family planning use and the two measures tend to change in opposite directions with the change in urban-rural combined family planning use change leading to often contradictory evidence of urban-rural disparity in family planning use and both are subject to "level' effects (Preston and Weed, 1976).

Alternatively, following Sopher (1974), the urban-rural disparity in the use of family planning method i may be defined in terms of the ratio of the odds of using the method in the urban areas to the odds of using the method in the rural areas. In other words,

$$D_i = ln\left[\frac{u_i/(1-u_i)}{r_i/(1-r_i)}\right] \quad (3)$$

When $u_i = r_i$, $D_i = 0$. In this case, there is no urban-rural disparity in the use of the family planning method i. Notice that D_i can take both positive and negative values. When $u_i > r_i$, $D_i > 0$. On the other hand, when $u_i < r_i$, $D_i < 0$. It is obvious that the larger the deviation of the index D_i from its limiting value of 0, the larger the urban-rural disparity in the use of the family planning method i. It is also obvious that the disparity index defined by equation (3) may be > 0 for one family planning method but may be < 0 for other family planning method.

Combining the urban-rural disparity in the use of different family planning methods, the urban-rural disparity in family planning use may be defined as

$$D = \sum_{i=1}^{n} D_i^2 \qquad (6)$$

where n is the number of family planning methods available. The index D is the weighted average of D_i with D_i themselves being the weight. This means that the decrease in the urban-rural disparity in the use of that method in which urban-rural disparity is high leads to a faster decrease in D compared to the decrease in urban-rural disparity in the use of that method in which the disparity is low. This is a desirable property of the disparity index and the higher the value of D the higher the urban-rural disparity in family planning use. When there is no urban-rural disparity in the use of all family planning methods, $D=0$.

In the present analysis, different family planning methods have been clubbed into three categories: 1) modern spacing methods; 2) permanent methods; and traditional methods. This is important as the context of using permanent methods is different from that of using modern spacing methods. Permanent methods are used only when family formation process is complete whereas modern spacing methods are used primarily to delay birth or to space births. On the other hand, use of traditional methods generally reflects the unmet need of modern spacing methods. We have, therefore, calculated the index D_i separately for permanent methods, modern spacing methods and traditional methods and then combined them into a single index of urban-rural disparity in family planning use. The analysis has been carried out for the country and for its constituent states and Union Territories. District level analysis of urban-rural disparity in contraceptive use could not be carried out as estimates of the prevalence of different family planning methods in urban and rural areas ae not available at the district level.

Data

The analysis is built upon the estimates of the prevalence of different family planning methods in urban and rural areas available through different rounds of the National Family Health Survey (NFHS). The National Family Health Survey programme was instituted by the Government of India in 1992 to generate key indicators of health and family planning based on statistically representative household survey. Beginning 1992-93, five rounds of the survey have so far been carried out in 1992-93; 1998-99; 2005-06; 2015-16; and 2019-21 (Government of India, 1995; 2000; 2007; 2017; 2021). Estimates of the prevalence of different family planning methods in urban and rural areas are available from these surveys for the country and for its constituent states and Union Territories. These prevalence estimates constitute the database for the present analysis.

Family Planning Use in Urban and Rural Areas

Table 1 gives estimates of the prevalence of modern spacing methods, permanent methods, and traditional methods in urban and rural areas of the country and its constituent states and Union Territories based on the data available from different rounds of NFHS. At the national level, prevalence of modern spacing methods and traditional methods have always been higher in urban as compared to rural areas. However, prevalence of permanent methods has been higher in urban areas compared to rural areas up to 2005-06 only. After 2005-06, prevalence of permanent methods of family planning in the rural areas has become higher than that in the urban areas.

Among states/Union Territories of the country, prevalence of modern spacing methods, permanent methods and traditional methods varies widely in both urban and rural areas. Table 2 presents summary measures of inter-state/Union Territory variation in the prevalence of modern spacing methods, permanent methods and traditional methods in urban and rural areas as obtained from different rounds of NFHS. In 2019-21, the prevalence of permanent methods was higher in rural as compared to urban areas in 26 states/Union Territories whereas the prevalence of modern spacing methods was higher in rural as compared to urban areas in 7 states/Union Territories and the prevalence of traditional methods was higher in rural as compared to urban areas in 6 states/Union Territories. There are only two states/Union Territories – Andaman and Nicobar Islands and Sikkim - where the prevalence of modern spacing methods as well as the prevalence of permanent methods and the prevalence of traditional methods was higher in rural as compared to urban areas. Similarly, there are only two states – Jharkhand and Tripura – where the prevalence of all the three categories of family planning methods was higher in urban as compared to the rural areas. In the remaining states/Union Territories, urban rural difference in the prevalence of modern spacing methods, permanent methods and traditional methods is not in the same direction. In 1992-93, 1998-99 and 2005-06, there was no state/Union Territory where the prevalence of modern spacing methods was higher in rural as compared to urban areas. However, in 2015-16 and in 2019-21, there were 7 states/Union Territories in which the prevalence of modern spacing methods was higher in rural as compared to urban areas. On the other hand, there were 10 states in 1992-93 where the prevalence of permanent methods was higher in rural than in urban areas. This number decreased to 9 in 1998-99 but increased to 17 in 2005-06 and to 22 in 2015-16. The number of states where the prevalence of traditional methods was higher in rural as compared to urban areas also decreased from 3 in 1992-93 to 1 in 1998-99 but increased to 5 in 2005-06 and to 7 in 2015-16 and then decreased to 6 in 2019-21. This indicates that the urban-rural disparity in the use of modern spacing methods, permanent methos and traditional methods has also varied over time.

Table 1: Prevalence of modern spacing methods, permanent methods, and traditional methods of family planning in urban and rural areas of India and states/Union Territories, 1992-2021.

Country/State/Union Territory	Year	Urban			Rural		
		p_s	p_p	p_t	p_s	p_p	p_t
India	1992-93	0.117	0.336	0.058	0.034	0.299	0.038
	1998-99	0.134	0.378	0.070	0.045	0.354	0.048
	2005-06	0.169	0.389	0.082	0.072	0.381	0.077
	2015-16	0.153	0.36	0.059	0.096	0.364	0.057
	2019-21	0.22	0.365	0.108	0.165	0.390	0.101
Andaman & Nicobar Islands	1992-93	na	na	na	na	na	na
	1998-99	na	na	na	na	na	na
	2005-06	na	na	na	na	na	na
	2015-16	0.06	0.352	0.016	0.103	0.434	0.031
	2019-21	0.175	0.31	0.059	0.19	0.449	0.095
Andhra Pradesh	1992-93	0.043	0.513	0.01	0.029	0.404	0.003
	1998-99	0.049	0.574	0.011	0.009	0.569	0.005
	2005-06	0.027	0.645	0.005	0.006	0.664	0.006
	2015-16	0.014	0.667	0.003	0.002	0.698	0
	2019-21	0.014	0.689	0.005	0.005	0.706	0.001
Arunachal Pradesh	1992-93	0.137	0.153	0.105	0.077	0.099	0.032
	1998-99	0.152	0.275	0.046	0.116	0.194	0.023
	2005-06	0.2	0.194	0.079	0.126	0.238	0.052
	2015-16	0.152	0.083	0.03	0.154	0.122	0.057
	2019-21	0.291	0.157	0.122	0.289	0.187	0.119
Assam	1992-93	0.109	0.227	0.287	0.047	0.133	0.221
	1998-99	0.124	0.182	0.228	0.097	0.166	0.16
	2005-06	0.229	0.143	0.288	0.119	0.129	0.297
	2015-16	0.283	0.101	0.165	0.272	0.096	0.152

Country/State/Union Territory	Year	Urban			Rural		
		p_s	p_p	p_t	p_s	p_p	p_t
	2019-21	0.329	0.094	0.191	0.368	0.09	0.149
Bihar	1992-93	0.085	0.307	0.033	0.019	0.166	0.013
	1998-99	0.071	0.283	0.035	0.017	0.192	0.02
	2005-06	0.094	0.319	0.093	0.037	0.231	0.046
	2015-16	0.053	0.268	0.024	0.021	0.199	0.006
	2019-21	0.15	0.32	0.153	0.085	0.354	0.107
Chandigarh	1992-93	na	na	na	na	na	na
	1998-99	na	na	na	na	na	na
	2005-06	na	na	na	na	na	na
	2015-16	na	na	na	na	na	na
	2019-21	0.365	0.193	0.217	na	na	na
Chhattisgarh	1992-93	na	na	na	na	na	na
	1998-99	na	na	na	na	na	na
	2005-06	0.135	0.454	0.065	0.028	0.436	0.035
	2015-16	0.131	0.442	0.044	0.059	0.477	0.028
	2019-21	0.172	0.477	0.064	0.123	0.485	0.06
Dadra & Nagar Haveli	1992-93	na	na	na	na	na	na
	1998-99	na	na	na	na	na	na
	2005-06	na	na	na	na	na	na
	2015-16	0.068	0.234	0.002	0.038	0.317	0.02
	2019-21	na	na	na	na	na	na
Dadra & Nagar Haveli and Daman & Diu	1992-93	na	na	na	na	na	na
	1998-99	na	na	na	na	na	na
	2005-06	na	na	na	na	na	na
	2015-16	na	na	na	na	na	na
	2019-21	0.228	0.309	0.098	0.133	0.527	0.064

Country/State/Union Territory	Year	Urban			Rural		
		p_s	p_p	p_t	p_s	p_p	p_t
Daman & Diu	1992-93	na	na	na	na	na	na
	1998-99	na	na	na	na	na	na
	2005-06	na	na	na	na	na	na
	2015-16	0.096	0.22	0.003	0.033	0.402	0
	2019-21	na	na	na	na	na	na
Delhi	1992-93	0.316	0.233	0.058	0.284	0.222	0.047
	1998-99	0.284	0.28	0.076	0.202	0.353	0.053
	2005-06	0.337	0.228	0.106	0.209	0.35	0.085
	2015-16	0.277	0.196	0.057	0.261	0.248	0.056
	2019-21	0.394	0.182	0.189	0.406	0.191	0.116
Goa	1992-93	0.093	0.274	0.145	0.054	0.336	0.054
	1998-99	0.1	0.294	0.133	0.061	0.273	0.105
	2005-06	0.14	0.246	0.127	0.078	0.274	0.089
	2015-16	0.1	0.216	0.016	0.057	0.063	0.015
	2019-21	0.318	0.332	0.073	0.275	0.249	0.087
Gujarat	1992-93	0.109	0.381	0.037	0.031	0.426	0.018
	1998-99	0.137	0.396	0.085	0.039	0.494	0.037
	2005-06	0.196	0.381	0.099	0.079	0.476	0.104
	2015-16	0.137	0.275	0.059	0.059	0.387	0.021
	2019-21	0.248	0.292	0.155	0.123	0.41	0.089
Haryana	1992-93	0.204	0.283	0.093	0.058	0.37	0.039
	1998-99	0.229	0.305	0.138	0.081	0.45	0.073
	2005-06	0.337	0.228	0.1	0.149	0.428	0.043
	2015-16	0.236	0.315	0.049	0.189	0.434	0.04
	2019-21	0.342	0.248	0.145	0.239	0.374	0.116
Himachal Pradesh	1992-93	0.243	0.387	0.074	0.068	0.466	0.037

Country/State/Union Territory	Year	Urban			Rural		
		p_s	p_p	p_t	p_s	p_p	p_t
	1998-99	0.257	0.382	0.104	0.068	0.537	0.065
	2005-06	0.357	0.355	0.025	0.133	0.577	0.015
	2015-16	0.216	0.288	0.073	0.146	0.377	0.046
	2019-21	0.351	0.242	0.159	0.203	0.437	0.101
Jammu and Kashmir	1992-93	0.226	0.275	0.143	0.074	0.301	0.087
	1998-99	0.168	0.429	0.083	0.095	0.273	0.071
	2005-06	0.19	0.368	0.125	0.147	0.257	0.058
	2015-16	0.251	0.309	0.09	0.199	0.222	0.12
	2019-21	0.315	0.22	0.057	0.309	0.212	0.079
Jharkhand	1992-93	na	na	na	na	na	na
	1998-99	na	na	na	na	na	na
	2005-06	0.144	0.355	0.101	0.051	0.201	0.03
	2015-16	0.096	0.329	0.042	0.051	0.307	0.025
	2019-21	0.137	0.377	0.146	0.113	0.376	0.115
Karnataka	1992-93	0.087	0.404	0.029	0.029	0.435	0.013
	1998-99	0.084	0.48	0.035	0.022	0.544	0.008
	2005-06	0.09	0.502	0.016	0.025	0.622	0.007
	2015-16	0.042	0.429	0.009	0.015	0.528	0.002
	2019-21	0.136	0.552	0.008	0.088	0.589	0.005
Kerala	1992-93	0.069	0.504	0.109	0.057	0.475	0.082
	1998-99	0.062	0.512	0.081	0.047	0.51	0.075
	2005-06	0.111	0.474	0.104	0.067	0.509	0.109
	2015-16	0.048	0.458	0.028	0.041	0.459	0.028
	2019-21	0.07	0.436	0.108	0.053	0.495	0.053
Ladakh	1992-93	na	na	na	na	na	na
	1998-99	na	na	na	na	na	na

Country/State/Union Territory	Year	Urban			Rural		
		p_s	p_p	p_t	p_s	p_p	p_t
	2005-06	na	na	na	na	na	na
	2015-16	na	na	na	na	na	na
	2019-21	0.291	0.169	0.046	0.313	0.172	0.03
Lakshadweep	1992-93	na	na	na	na	na	na
	1998-99	na	na	na	na	na	na
	2005-06	na	na	na	na	na	na
	2015-16	0.048	0.099	0.153	0.019	0.152	0.036
	2019-21	0.096	0.214	0.208	0.09	0.181	0.283
Madhya Pradesh	1992-93	0.116	0.346	0.015	0.034	0.124	0.176
	1998-99	0.123	0.402	0.027	0.021	0.372	0.014
	2005-06	0.179	0.384	0.048	0.034	0.481	0.026
	2015-16	0.136	0.354	0.027	0.042	0.456	0.015
	2019-21	0.215	0.423	0.076	0.097	0.564	0.058
Maharashtra	1992-93	0.443	0.065	0.021	0.03	0.508	0.005
	1998-99	0.116	0.451	0.018	0.049	0.572	0.006
	2005-06	0.188	0.452	0.027	0.051	0.607	0.013
	2015-16	0.158	0.449	0.032	0.076	0.566	0.013
	2019-21	0.186	0.441	0.031	0.108	0.539	0.018
Manipur	1992-93	0.172	0.144	0.127	0.07	0.135	0.098
	1998-99	0.128	0.186	0.135	0.092	0.139	0.125
	2005-06	0.153	0.095	0.297	0.147	0.083	0.23
	2015-16	0.091	0.038	0.121	0.097	0.028	0.101
	2019-21	0.149	0.044	0.422	0.142	0.033	0.437
Meghalaya	1992-93	0.078	0.199	0.042	0.045	0.076	0.059
	1998-99	0.183	0.206	0.064	0.066	0.029	0.043
	2005-06	0.176	0.191	0.07	0.064	0.066	0.054

Country/State/Union Territory	Year	Urban			Rural		
		p_s	p_p	p_t	p_s	p_p	p_t
	2015-16	0.152	0.124	0.052	0.158	0.048	0.018
	2019-21	0.139	0.071	0.049	0.177	0.052	0.049
Mizoram	1992-93	0.096	0.462	0.013	0.071	0.43	0.004
	1998-99	0.141	0.506	0.004	0.091	0.396	0.01
	2005-06	0.18	0.46	0.003	0.152	0.394	0.002
	2015-16	0.19	0.194	0	0.164	0.151	0
	2019-21	0.149	0.137	0.005	0.209	0.123	0.003
Nagaland	1992-93	0.082	0.124	0	0.061	0.048	0
	1998-99	0.182	0.196	0.089	0.104	0.105	0.052
	2005-06	0.168	0.15	0.101	0.108	0.08	0.06
	2015-16	0.152	0.103	0.059	0.107	0.085	0.05
	2019-21	0.349	0.136	0.125	0.29	0.148	0.119
Odisha	1992-93	0.079	0.372	0.023	0.021	0.306	0.015
	1998-99	0.125	0.327	0.088	0.038	0.359	0.062
	2005-06	0.187	0.314	0.093	0.089	0.347	0.054
	2015-16	0.223	0.26	0.13	0.159	0.289	0.117
	2019-21	0.226	0.246	0.297	0.2	0.291	0.245
Puducherry	1992-93	na	na	na	na	na	na
	1998-99	na	na	na	na	na	na
	2005-06	na	na	na	na	na	na
	2015-16	0.03	0.585	0.008	0.056	0.548	0.005
	2019-21	0.091	0.521	0.046	0.058	0.585	0.021
Punjab	1992-93	0.239	0.304	0.085	0.148	0.354	0.07
	1998-99	0.352	0.188	0.178	0.176	0.362	0.106
	2005-06	0.292	0.226	0.099	0.211	0.375	0.056
	2015-16	0.328	0.325	0.112	0.252	0.418	0.083

Country/State/Union Territory	Year	Urban			Rural		
		p_s	p_p	p_t	p_s	p_p	p_t
	2019-21	0.309	0.185	0.19	0.251	0.26	0.143
Rajasthan	1992-93	0.085	0.383	0.003	0.02	0.251	0.011
	1998-99	0.12	0.349	0.035	0.039	0.314	0.018
	2005-06	0.207	0.413	0.037	0.053	0.327	0.025
	2015-16	0.225	0.355	0.062	0.094	0.427	0.062
	2019-21	0.275	0.357	0.11	0.17	0.448	0.099
Sikkim	1992-93	na	na	na	na	na	na
	1998-99	na	na	na	na	na	na
	2005-06	0.25	0.267	0.114	0.226	0.254	0.084
	2015-16	0.209	0.148	0.012	0.269	0.24	0.006
	2019-21	0.289	0.147	0.119	0.447	0.171	0.155
Tamil Nadu	1992-93	0.098	0.347	0.064	0.033	0.422	0.037
	1998-99	0.085	0.466	0.031	0.02	0.456	0.012
	2005-06	0.067	0.525	0.016	0.027	0.58	0.013
	2015-16	0.041	0.494	0.006	0.022	0.494	0.006
	2019-21	0.083	0.557	0.036	0.068	0.6	0.027
Telangana	1992-93	na	na	na	na	na	na
	1998-99	na	na	na	na	na	na
	2005-06	na	na	na	na	na	na
	2015-16	0.02	0.563	0.005	0.005	0.553	0
	2019-21	0.042	0.627	0.021	0.02	0.645	0.011
Tripura	1992-93	0.139	0.254	0.318	0.083	0.176	0.265
	1998-99	na	na	na	na	na	na
	2005-06	0.273	0.171	0.224	0.267	0.183	0.205
	2015-16	0.255	0.176	0.237	0.303	0.124	0.203
	2019-21	0.392	0.142	0.235	0.383	0.091	0.215

Country/State/Union Territory	Year	Urban			Rural		
		p_s	p_p	p_t	p_s	p_p	p_t
Uttar Pradesh	1992-93	0.138	0.158	0.024	0.034	0.124	0.009
	1998-99	0.176	0.19	0.082	0.036	0.147	0.056
	2005-06	0.232	0.192	0.139	0.089	0.164	0.144
	2015-16	0.247	0.151	0.158	0.109	0.181	0.131
	2019-21	0.35	0.136	0.19	0.251	0.181	0.176
Uttarakhand	1992-93	na	na	na	na	na	na
	1998-99	na	na	na	na	na	na
	2005-06	0.361	0.231	0.061	0.165	0.377	0.03
	2015-16	0.293	0.191	0.055	0.168	0.331	0.033
	2019-21	0.415	0.18	0.14	0.264	0.307	0.124
West Bengal	1992-93	0.111	0.254	0.253	0.051	0.325	0.181
	1998-99	0.182	0.282	0.27	0.12	0.355	0.17
	2005-06	0.206	0.293	0.256	0.156	0.343	0.196
	2015-16	0.303	0.227	0.16	0.265	0.323	0.13
	2019-21	0.341	0.269	0.165	0.3	0.306	0.124

Source: Government of India (1997; 2000; 2007; 2017; 2021)

Table 2: Summary measures of inter-state/Union Territory variation in the prevalence of modern spacing methods, permnent methods and traditional methods in India, 1992-2021.

	1992-93			1998-99			2005-06			2015-16			2019-21		
	p_s	p_p	p_t	p_s	p_p	p_t	p_s	p_p	p_t	p_s	p_p	p_t	p_s	p_p	p_t
								Urban							
Minimum	0.043	0.065	0.000	0.049	0.182	0.004	0.027	0.095	0.003	0.014	0.038	0.000	0.014	0.044	0.005
Q1	0.085	0.227	0.023	0.112	0.258	0.035	0.144	0.226	0.048	0.064	0.184	0.014	0.147	0.166	0.055
Median	0.109	0.283	0.058	0.133	0.316	0.082	0.188	0.314	0.099	0.152	0.268	0.044	0.238	0.247	0.121
Q3	0.172	0.381	0.109	0.182	0.435	0.111	0.232	0.413	0.114	0.230	0.354	0.082	0.332	0.389	0.171
Maximum	0.443	0.513	0.318	0.352	0.574	0.270	0.361	0.645	0.297	0.328	0.667	0.237	0.415	0.689	0.422
IQR	0.087	0.154	0.086	0.070	0.177	0.076	0.088	0.187	0.066	0.167	0.170	0.068	0.186	0.223	0.116
CV	0.620	0.392	1.021	0.469	0.344	0.760	0.423	0.414	0.764	0.603	0.527	0.976	0.471	0.555	0.706
								Rural							
Min	0.019	0.048	0.000	0.009	0.029	0.005	0.006	0.066	0.002	0.002	0.028	0.000	0.005	0.033	0.001
Q1	0.031	0.135	0.013	0.038	0.194	0.017	0.051	0.231	0.026	0.041	0.167	0.010	0.103	0.181	0.051
Median	0.051	0.306	0.037	0.064	0.357	0.053	0.089	0.347	0.054	0.097	0.323	0.028	0.190	0.307	0.099
Q3	0.070	0.422	0.082	0.096	0.466	0.074	0.149	0.476	0.089	0.166	0.445	0.060	0.282	0.490	0.124
Max	0.284	0.508	0.265	0.202	0.572	0.170	0.267	0.664	0.297	0.303	0.698	0.203	0.447	0.706	0.437
IQR	0.039	0.287	0.069	0.058	0.272	0.056	0.098	0.245	0.063	0.125	0.278	0.050	0.180	0.309	0.073
CV	0.867	0.495	1.132	0.678	0.458	0.816	0.627	0.487	0.971	0.763	0.536	1.067	0.578	0.548	0.825
N	25	25	25	24	24	24	29	29	29	35	35	35	35	35	35

Source: Author's calculations.

Urban-Rural Disparity in Family Planning Use

The urban-rural disparity in family planning use, as measured by the index d is presented in table 3 along with the urban-rural disparity in the use of modern spacing methods, permanent methods, and traditional methods. In India, the urban-rural disparity in family planning use has decreased very sharply during the period 1992-2021. The decrease in urban-rural disparity has been particularly rapid in the use of modern spacing methods as the index d_s decreased from 1.326 in 1992-93 to 0.356 in 2019-21. By contrast, there has been an increase in urban-rural disparity in the use of permanent methods and traditional methods after 2015-16 as may be seen from the increase in the magnitude of indexes d_p and d_t respectively. The index d_t has been negative in 2015-16 and in 2019-21 which means higher prevalence of permanent method of family planning in rural areas of the country as compared to its urban areas.

Among the constituent states/Union Territories of the country, urban-rural disparity in family planning use varies widely. In 2019-21, the urban-rural disparity in family planning use was the highest in Andhra Pradesh but the lowest in Arunachal Pradesh. Urban-rural disparity in family planning use has also been found to be very high in the Union Territory of Dadra & Nagar Haveli and Daman & Diu and in states Gujarat, Himachal Pradesh, Madhya Pradesh, and Telangana. On the other hand, urban-rural disparity in family planning use has been found to be very low in Manipur and Nagaland, in addition to Arunachal Pradesh.

In general, urban-rural disparity in family planning use has decreased over time. The only exception is Andhra Pradesh where urban-rural disparity in family planning use increased very rapidly from 1.828 in 1992-93 to 8.359 in 2015-16 but decreased in 2019-21. More importantly, there has been an increase in urban-rural disparity in family planning use between 2015-16 and 2019-21 in Assam, Delhi, Haryana, Himachal Pradesh, Kerala, and in the Union Territory of Puducherry. The increase in urban-rural disparity in family planning use in these states and Union Territory has been the result of widening urban-rural disparity in the use of modern spacing methods as well as in the use of permanent methods and traditional methods of family planning. In Assam and Delhi, prevalence of modern spacing methods in the rural areas has become higher than that in the urban areas whereas in the Union Territory of Puducherry, prevalence of modern spacing methods was higher in rural areas as compared to that in the urban areas in 2015-16 but, in 2019-21, prevalence of modern spacing methods in the urban areas became higher than that in the rural areas. It may also be seen from table 4 that the prevalence of traditional methods increased quite substantially in many states/Union Territories in recent years resulting an increase in the urban-rural disparity in family planning use. Traditional family planning methods are not supported under the official family planning efforts in the country.

Table 3

Country/State/Union Territory	Period				
	1992-93	1998-99	2005-06	2015-16	2019-21
	Urban-rural disparity in family planning use (Index *d*)				
India	1.984	1.585	0.934	0.280	0.144
Andaman and Nicobar Islands	na	na	na	0.967	0.630
Andhra Pradesh	1.828	3.645	2.368	8.359	3.689
Arunachal Pradesh	2.265	0.818	0.571	0.633	0.045
Assam	1.369	0.281	0.637	0.015	0.121
Bihar	4.005	2.796	1.753	3.226	0.603
Chandigarh	na	na	na	na	na
Chhattisgarh	na	na	3.284	1.010	0.160
Daman & Diu	na	na	na	28.751	na
Dadra &Nagar Haveli and Daman & Diu	na	na	na	na	1.477
Delhi	0.076	0.465	0.848	0.101	0.336
Dadra and Nagar Haveli	na	na	na	5.038	na
Goa	1.615	0.371	0.608	2.354	0.243
Gujarat	2.382	2.798	1.246	2.259	1.400
Haryana	3.051	2.367	2.820	0.380	0.673
Himachal Pradesh	2.836	3.081	2.750	0.630	1.627
Jammu & Kashmir	2.009	0.938	1.075	0.395	0.126
Jharkhand	na	na	3.579	0.762	0.124
Karnataka	2.033	4.301	2.761	3.197	0.486
Kerala	0.154	0.093	0.328	0.025	0.740
Ladakh	na	na	na	na	0.209
Lakshadweep	na	na	na	3.565	0.215
Madhya Pradesh	10.444	3.991	3.887	2.206	1.282
Maharashtra	19.930	2.345	3.082	1.727	0.868
Manipur	1.121	0.266	0.144	0.132	0.096
Meghalaya	1.692	6.181	2.829	2.329	0.192
Mizoram	1.536	1.294	0.279	2.715	0.448
Nagaland	1.167	1.291	1.082	0.232	0.087
Odisha	2.198	1.816	1.099	0.210	0.146
Puducherry	na	na	na	0.709	0.960
Punjab	0.446	2.038	1.086	0.405	0.390
Rajasthan	4.386	1.960	2.672	1.154	0.538
Sikkim	na	na	0.137	1.071	0.599
Tamil Nadu	1.774	3.236	0.998	0.381	0.166
Telangana	na	Na	na	11.929	1.022
Tripura	0.618	Na	0.020	0.269	0.267
Uttar Pradesh	3.366	3.304	1.313	1.068	0.349
Uttarakhand	na	Na	2.145	1.337	0.978
West Bengal	1.013	0.703	0.287	0.324	0.179
	Urban-rural disparity in the use of modern spacing methods (Index d_s)				
India	1.326	1.189	0.964	0.527	0.356
Andaman and Nicobar Islands	na	na	na	-0.600	-0.101
Andhra Pradesh	0.408	1.736	1.525	1.958	1.039
Arunachal Pradesh	0.643	0.312	0.551	-0.015	0.010
Assam	0.908	0.276	0.788	0.055	-0.172

Country/State/Union Territory	Period				
	1992-93	1998-99	2005-06	2015-16	2019-21
Bihar	1.568	1.486	0.993	0.950	0.642
Chandigarh	na	na	na	na	na
Chhattisgarh	na	na	1.690	0.871	0.393
Daman & Diu	na	na	na	1.134	na
Dadra &Nagar Haveli and Daman & Diu	na	na	na	na	0.655
Delhi	0.152	0.449	0.654	0.078	-0.050
Dadra and Nagar Haveli	na	na	na	0.614	na
Goa	0.586	0.537	0.655	0.608	0.206
Gujarat	1.341	1.364	1.045	0.933	0.855
Haryana	1.426	1.215	1.066	0.282	0.504
Himachal Pradesh	1.482	1.556	1.286	0.478	0.753
Jammu & Kashmir	1.296	0.654	0.308	0.299	0.028
Jharkhand	na	na	1.141	0.681	0.220
Karnataka	1.160	1.405	1.350	1.048	0.489
Kerala	0.204	0.293	0.553	0.155	0.296
Ladakh	na	na	na	na	-0.104
Lakshadweep	na	na	na	0.945	0.071
Madhya Pradesh	1.316	1.878	1.824	1.289	0.936
Maharashtra	3.247	0.935	1.461	0.819	0.635
Manipur	1.015	0.371	0.047	-0.073	0.056
Meghalaya	0.585	1.154	1.139	-0.046	-0.287
Mizoram	0.329	0.494	0.203	0.177	-0.412
Nagaland	0.318	0.651	0.511	0.399	0.272
Odisha	1.386	1.286	0.856	0.415	0.155
Puducherry	na	na	na	-0.647	0.486
Punjab	0.592	0.933	0.433	0.370	0.288
Rajasthan	1.516	1.212	1.540	1.030	0.616
Sikkim	na	na	0.132	-0.331	-0.687
Tamil Nadu	1.158	1.516	0.951	0.616	0.216
Telangana	na	na	na	1.485	0.765
Tripura	0.579	na	0.030	-0.241	0.038
Uttar Pradesh	1.515	1.744	1.129	0.985	0.474
Uttarakhand	na	na	1.050	0.721	0.682
West Bengal	0.843	0.490	0.339	0.188	0.188
	Urban-rural disparity in the use of permanent methods (Index d_p)				
India	0.171	0.103	0.034	-0.019	-0.106
Andaman and Nicobar Islands	na	na	na	-0.344	-0.595
Andhra Pradesh	0.441	0.020	-0.084	-0.143	-0.081
Arunachal Pradesh	0.497	0.455	-0.261	-0.429	-0.211
Assam	0.649	0.111	0.119	0.055	0.048
Bihar	0.800	0.507	0.444	0.390	-0.152
Chandigarh	na	na	na	na	na
Chhattisgarh	na	na	0.073	-0.142	-0.032
Daman & Diu	na	na	na	-0.868	na
Dadra &Nagar Haveli and Daman & Diu	na	na	na	na	-0.913
Delhi	0.063	-0.339	-0.601	-0.307	-0.059
Dadra and Nagar Haveli	na	na	na	-0.420	na
Goa	-0.293	0.103	-0.146	1.407	0.405

Country/State/Union Territory	Period				
	1992-93	1998-99	2005-06	2015-16	2019-21
Gujarat	-0.187	-0.398	-0.389	-0.512	-0.522
Haryana	-0.397	-0.623	-0.930	-0.508	-0.594
Himachal Pradesh	-0.324	-0.629	-0.908	-0.405	-0.888
Jammu & Kashmir	-0.127	0.694	0.521	0.449	0.047
Jharkhand	na	na	0.783	0.101	0.004
Karnataka	-0.127	-0.256	-0.490	-0.398	-0.151
Kerala	0.116	0.008	-0.140	-0.008	-0.237
Ladakh	na	na	na	na	-0.021
Lakshadweep	na	na	na	-0.483	0.209
Madhya Pradesh	1.318	0.127	-0.397	-0.427	-0.568
Maharashtra	-2.698	-0.487	-0.627	-0.467	-0.393
Manipur	0.075	0.347	0.148	0.296	0.299
Meghalaya	1.105	2.162	1.206	1.033	0.332
Mizoram	0.130	0.446	0.270	0.304	0.124
Nagaland	1.032	0.731	0.708	0.206	-0.099
Odisha	0.295	-0.142	-0.149	-0.146	-0.230
Puducherry	na	na	na	0.150	-0.259
Punjab	-0.227	-0.896	-0.720	-0.403	-0.437
Rajasthan	0.616	0.158	0.370	-0.307	-0.380
Sikkim	na	na	0.067	-0.600	-0.180
Tamil Nadu	-0.318	0.040	-0.223	0.002	-0.176
Telangana	na	na	na	0.041	-0.078
Tripura	0.466	na	-0.082	0.414	0.503
Uttar Pradesh	0.282	0.308	0.192	-0.221	-0.339
Uttarakhand	na	na	-0.700	-0.737	-0.702
West Bengal	-0.347	-0.337	-0.231	-0.482	-0.181
	Urban-rural disparity in the use of traditional methods (Index d_i)				
India	0.444	0.401	0.068	0.040	0.075
Andaman and Nicobar Islands	na	na	na	-0.699	-0.515
Andhra Pradesh	1.211	0.795	-0.183	2.122	1.613
Arunachal Pradesh	1.267	0.717	0.447	-0.670	0.028
Assam	0.350	0.439	-0.043	0.094	0.299
Bihar	0.952	0.575	0.754	1.473	0.410
Chandigarh	na	na	na	na	na
Chhattisgarh	na	na	0.651	0.481	0.069
Daman & Diu	na	na	na	5.168	na
Dadra &Nagar Haveli and Daman & Diu	na	na	na	na	0.463
Delhi	0.222	0.385	0.244	0.021	0.574
Dadra and Nagar Haveli	na	na	na	-2.117	na
Goa	1.089	0.268	0.398	0.066	-0.191
Gujarat	0.740	0.883	-0.055	1.061	0.630
Haryana	0.927	0.709	0.905	0.206	0.256
Himachal Pradesh	0.732	0.513	0.521	0.487	0.520
Jammu & Kashmir	0.560	0.169	0.842	-0.321	-0.350
Jharkhand	na	na	1.290	0.536	0.274
Karnataka	0.819	1.504	0.836	1.393	0.473
Kerala	0.314	0.083	-0.053	-0.026	0.772
Ladakh	na	na	na	na	0.444

Country/State/Union Territory	Period				
	1992-93	1998-99	2005-06	2015-16	2019-21
Lakshadweep	na	na	na	1.562	-0.407
Madhya Pradesh	-2.641	0.670	0.636	0.601	0.290
Maharashtra	1.451	1.111	0.745	0.916	0.557
Manipur	0.292	0.088	0.347	0.198	-0.061
Meghalaya	-0.358	0.420	0.277	1.123	0.000
Mizoram	1.188	-0.922	0.406	1.610	0.513
Nagaland	na	0.577	0.565	0.175	0.056
Odisha	0.436	0.378	0.586	0.127	0.264
Puducherry	na	na	na	0.518	0.810
Punjab	0.210	0.602	0.616	0.325	0.341
Rajasthan	-1.307	0.682	0.404	-0.007	0.118
Sikkim	na	na	0.339	0.776	-0.306
Tamil Nadu	0.576	0.968	0.211	-0.032	0.297
Telangana	na	na	na	3.118	0.657
Tripura	0.257	na	0.113	0.198	0.115
Uttar Pradesh	0.996	0.409	-0.041	0.219	0.094
Uttarakhand	na	na	0.742	0.523	0.140
West Bengal	0.427	0.591	0.345	0.239	0.334

Source: Author's calculations

Discussions and Conclusions

The present analysis is probably the first to analyse urban-rural disparity in family planning use in India over a period of 30 years between 1992-93 and 2019-21. The evidence available through NFHS suggests that use of family planning methods among currently married women of reproductive age in the country has always been higher in the urban areas as compared to the rural areas. There has, however, been little attempt to measure the urban-rural disparity in family planning use in the country and in its constituent states and Union Territories. It is well-known that the factors that contribute to the use of different family planning methods in the urban areas are essentially different from the factors that contribute to family planning use in the rural areas. The easy availability and access to a range of family planning methods is argued to be a major factor in relatively higher use of family planning methods in the urban areas as compared to the rural areas. On the other hand, factors such as higher literacy, especially of women and other life-style factors also contribute to relatively higher use of family planning in urban as compared to rural areas.

The present analysis reveals that higher contraceptive use in the urban areas is primarily due to higher use of modern spacing methods as the availability and access to these family planning methods is better in the urban areas compared to rural areas. However, the urban-rural gap in the availability and access to modern spacing methods appears to have reduced significantly over the years. The urban-rural gap in the use of modern spacing methods is now marginal as compared to the gap that prevailed 30 years age. On the other

hand, use of permanent methods of family planning is now higher in rural as compared to urban areas of the country. Relatively higher prevalence of permanent family planning methods in the rural areas of the country is a reflection of the organised efforts in the rural areas under the official family planning activities which are part of the reproductive and child health component of the National Health Mission. In the urban areas, organised family planning efforts are largely missing as the family planning services delivery system in the urban areas is not organised in the manner as it is organised in the rural areas.

The present analysis also suggests that urban-rural disparity in the use of traditional methods has increased in recent years because of the increase in the prevalence of traditional methods in the urban areas. Reasons for the increase in the prevalence of traditional methods in the urban areas of the country are not known at present as the necessary data are not yet available from the latest round of NFHS. The prevalence of traditional method may be seen as a reflection of the unmet need for modern spacing methods. This is an important aspect of family planning services delivery in the urban areas as it is generally presumed that the availability and excess to modern spacing methods is better in the urban areas as compared to rural areas.

The variation in urban-rural disparity in family planning use across states and Union Territories of the country is also evident from the present analysis. What is more important that in some states/Union Territories, this disparity has increased in recent years. The inter-state variation in urban-rural disparity in family planning use suggests that there are state-specific factors that contribute to urban-rural disparity in family planning use. Identification of these factors and addressing them in the delivery of family planning services may contribute towards reducing urban-rural disparity in family planning use.

From the policy perspective, the analysis suggests a need of reinvigorating family planning efforts in the urban areas of the country as the increase in the prevalence of modern spacing methods in the urban areas has been slower than that in the rural areas and the prevalence of permanent methods of family planning is now higher in rural areas as compared to the prevalence in the urban areas. The recent increase in the prevalence of traditional methods in the urban areas also justifies the need of such a reinvigoration as practice of traditional methods of family planning is regarded as a reflection of the unmet need of modern spacing method family planning.

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