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Female Infanticide in Tamil Nadu Some Evidence

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This paper reports and discusses evidence from a field survey on the existence of the practice of female infanticide in Tamil Nadu. Primary, health center records analyzed provide strong corroborative evidence that the phenomenon is not, as earlier thought, confined to a few blocks of Madurai and Salem districts but is seen in an almost contiguous belt from Madurai to North Arcot Ambedkar districts of Tamil Nadu.

Female infanticide - the killing of female infants because they are female- has occurred not only in several cultures across history, but is known to occur in contemporary societies as well [George et al 1992]. [Panigrahi 1972][Viswa Nath 1973][Clark 1983] have documented female infanticide in India the period of British colonial rule. In the period since independence, the gruesome practice has been reported as occurring in many parts of the country including Tamil Nadu, where the phenomenon is of recent origin, and was not known to exist before independence, except the among the Thodas of Nilgiris.

In respect of several standard indicators of health and education, Tamil Nadu is a comparatively better performer among the various major states. Thus, it ranked second only to Kerala in terms of the literacy rate according to the 1991 Census. Its infant mortality rate for 1995 as per SRS data stood at 56 per 1,000 live births, and only three states had a lower IMR [1]. The state has a good network of primary schools and comparatively better rates of enrolment and retention. Its birth and death rates do not compare badly with those of many major states. Yet the practice of female infanticide (FI) has been reported to exist in the state and its occurrence officially admitted [2]. The first major reporting of FI in Tamil Nadu appeared in the popular press (S H Venkatramani), India Today, June 15, 1986. This report dealt with incidence of FI in Madurai district, and focused upon a particular community in rural Madurai. Several years later, in 1992, female infanticide was reported from Salem district, more than a hundred miles from the Usilampatti region of Madurai district which had figured in the 1986 report (Viji Srinivasan, Frontline, 1992; Asha Krishnakumar, Frontline 1992).

Sex Ratios

Data from the Census of 1991 on sex ratio (defined as females per 1, 000 males) for both the general population and the juvenile population (0-6 age group) are highly unfavorable to women in several blocks and districts to Tamil Nadu, While the average sex ratio for the general population of Tamil Nadu as a whole was much higher at 974 as against the national average of 929, it was only 937 in Salem district and 942 in Dharmapuri. For the 0-6 population, Tamil Nadu's figure at 948 was slightly above India's at 945, but three districts - Salem, Dharmapuri and Madurai - reported much lower values of 849, 905 and 918, respectively. Salem district has, in fact, the dubious distinction of having the lowest juvenile sex ratio of 849 among all the districts in the country. According to the 1991 Census, there were 54 districts in the country (besides the union territory of Chandigarh) which had 0-6 sex ratios below 900. These districts were located in just seven states: all the districts of Haryana (16) and Punjab (12), 7 districts (out of 27) in Rajasthan, 10 out of 63 in Uttar Pradesh, 4 out of 19 in Gujarat, 4 out of 45 in Madhya Pradesh and one (Salem district) out of 21 in Tamil Nadu.

Table 1 presents data on juvenile sex ratios for Tamil Nadu and its districts from 1941 to 1991 across censuses. Two things are immediately evident. First, there is a general tendency for juvenile sex ratios to decline. Second, in the case of three districts, the decline is exceptionally sharp: Dharmapuri, Salem and Madurai. It may be noted that in Periyar and Dindigul (part of Madurai district up to 1981), the juvenile sex ratios for 1991 are well below the state average, though higher than those for Salem, Dharmapuri and Madurai. The general decline in juvenile sex ratios may be related to the greater access to better health care that male infants receive than do female infants, arising from the general patriarchal norms prevalent in society. But the particularly sharp decline in a few districts appears to reflect much stronger son preference leading to the practice of female infanticide. This impression is strengthened further by the data in Table 2 which show that the three districts of Dharmapuri, Salem and Madurai account for 41 out of 46 blocks in Tamil Nadu with a rural sex ratio of 900 or less. The other five blocks belong to Periyar and Dindigul districts which, as already noted, have extremely low sex ratios. A related point that emerges is that the sharp decline in juvenile sex ratios is a relatively recent phenomenon. One is led to hypothesize that this would be true of female infanticide as well. Table 3 shows the sex ratios, Birth rates, infant mortality rates, DPH survey for 1995.

Table 1: Sex Ratios 1941-1991, Juvenile Population: All India, Tamil Nadu State and District of Tamil Nadu

Territory	1941 (0-4 Years)	1951 (0-4 Years)	1961 (0-4 Years)	1971 (0-4 Years)	1981 (0-4 Years)	1991 (0-6 Years)
Dharmapuri	-	-	-	993	955	905
Madurai	1011	978	988	981	970	918
Salem	1010	1016	990	966	900	849
Tiruvannamalai	-	-	-	-	-	-
Sambuvarayar	-	-	-	-	-	964
Dindigul	-	-	-	-	-	934
North Arcot Ambedkar	1013	995	998	988	999	962
South Arcot	1007	1015	1017	981	973	970
Pudukkottai	-	-	-	-	999	976
Periyar	-	-	-	-	964	929
Coimbatore	1006	976	987	978	969	966
Chidambaram	-	-	-	-	-	964
Kanyakumari	-	-	966	978	997	970
Nilgiris	921	-	998	985	987	968
Thanjavur	1017	1008	997	984	987	965
Tiruchirappalli	1035	1017	1005	994	969	955
Kamarajar	-	-	-	-	-	946
Chengai	999	999	1015	986	996	970
Nagai Quaide- e-	-	-	-	-	-	971

Milleth						
Tirunelveli Kattabomman	990	1042	986	995	973	955
Pasumpon Muthramalinga	-	-	-	-	-	-
Thevar	-	-	-	-	-	958
Ramanathapuram	1042	1015	995	998	969	960
Madras	942	928	976	969	987	962
Tamil Nadu	1010	999	995	984	974	948
India	-	1010	999	964	962	945

Note: District names as of 1991 have been used in this table. See Table 4 for the current list, after Reconstitution and adoption of new names in 1996.

Source: Census of India, various volumes.

Table 2: Blocks of Tamil Nadu with Low Juveniles sex ratio in 1991

Territory	Total Number of Blocks	Number of Blocks with 0-6 sex Ratio (Rural) < 900 in 1991
Dharmapuri	18	8
Madurai	21	10
Salem	35	23
Tiruvannamalai	-	-
Sambuvarayar	18	nil
Dindigul	14	2

North Arcot Ambedkar	20	nil
South Arcot	35	nil
Pudukkottai	13	nil
Periyar	20	3
Coimbtore	21	nil
Chidambaranar	12	nil
Kanyakumari	9	nil
Nilgiris	4	nil
Thanjavur	15	nil
Nagappattinam Nagai Quaide- e- Milleth	20	nil
Tiruchirapally	32	Nil
Kamarajar	11	nil
Chengai	27	nil
Tirunelveli Kattabomman	19	nil
Pasumpon Muthramalinga	-	-
Thevar	11	nil
Ramanathapuram	11	nil
Tamil Nadu	385	46

Notes: 1 District names as of 1991 have been used in this table. 2 Madras being a completely urban district has been excluded

Source: Census of India 1991

Table 3: Some Sample Characteristics, DPH Survey for 1995

Item	Values
No of household surveyed	10,37,630
Population surveyed	44,97,086
Household size	4.3
Sex ratio	987
Birth rate	21.1
Death rate	7.6
Infant mortality rate (male)	52.7
Infant mortality rate (female)	57.3
Infant mortality rate (total)	54.9
Neo-natal mortality rate	38.8

Source: Directorate of Public Health, Survey, 1996

The data on sex ratios thus reinforces the reports of FI that have appeared in the popular press from time to time in the last decade. However, there has so far been no systematic documentation of the magnitudes and the geographical spread of the practice.

In this paper, we report both direct evidence from a sample survey of rural households in Tamil Nadu that confirms the widespread existence of the practice of female infanticide, and strong corroborative evidence from primary health center records. We also draw on field level interviews and on responses to a questionnaire on female infanticide from nearly 3,000 respondents. An important finding that emerges is that the phenomenon is not confined to just one block or two in Madurai and Salem. There is in fact an almost contiguous belt of female infanticide territory running from Madurai to North Arcot Ambedkar via Dindigul, Karur, Periyar, Salem, and Dharmapuri.

Data Sources

(i) Survey Methodology and Procedures

Reliable data on vital rates is available through SRS, but only for the state as a whole. The data available from the civil registration system is known to be far from reliable. But any serious analysis of vital rates for purposes of policy and for addressing the issues of levels of and gender differentials in infant mortality rates, and of infanticide would be greatly facilitated by availability of these data at district and further levels of disaggregation. To this end, a large-scale survey was carried out to study infant mortality and its variation across gender in rural Tamil Nadu. The state has an extensive network of primary health centers (PHCs), and below them health sub-centers (HSCs). On an average, a PHC serves a population of around 30,000 while a HSC caters to about 5,000 people. Tamil Nadu had, at the time that it was decided to conduct the survey (February 1996), 24 revenue districts (RDs) divided into 41 health unit districts (HUDs). The sample consisted, for each revenue district, on an average, of 40 randomly chosen HSCs, involving a population of around two lakhs per district. In the state as a whole (with Chennai, totally urban district, being excluded), a total of 960 HSCs were covered.

Questionnaires seeking information on live births, still births and infant deaths in the household during the calendar year 1995 were canvassed with 10,37,630 households. The total population covered was 44,97,086. The survey was carried out by functionaries of the department of public health who cross matched the demographic events netted by them in the field with the records of the village health nurses (VHNs), workers of the Integrated Child Development Services (ICDS), and village administrative officers (VAOs). Discrepancies that came to light were resolved by reverification in the field with the concerned household. While the methodology and data collection procedures do have limitations, they are robust enough for establishing the fact of incidence of female infanticide and for demonstrating significant gender differences in IMR and neo-natal mortality rates.

(ii) PHC Records

The PHC/HSC network referred to earlier employ an extensive army of field staff distributed over most villages of the state. They monitor all pregnancies, provide antenatal care, record pregnancy outcomes and monitor infant deaths. Their coverage may be incomplete, especially on account of pregnant women moving to natal homes outside the jurisdiction of the PHCs located where they normally reside. However, the data collected by the field staff and entered into PHC record's, is still useful for comparative purposes. The absolute values of such vital rates as birth, death and infant mortality rates may not be accurate, but they are unlikely to be biased in different directions across districts [3].

The PHC records provide information on pregnancies, deliveries, births, still births, early neo-natal (0-6 days) deaths, other neo-natal deaths (7-27 days), and post-natal (28-364 days) deaths genderwise. By aggregating PHC data, one can obtain the corresponding figures blockwise. Thus one can compute IMR genderwise for every block. The field staff, of the public health network also obtains information on causes of infant deaths, and one of the cause categories used is 'death due to social cause'. This category refers to female/male infanticide. Our perusal of PHC data aggregated blockwise shows that, while male infanticide does occur, it is a relatively rare phenomenon. Further, where it does occur, it is highly correlated with female infanticide. In this paper, we confine our discussion to female infanticide. Using data from PHC records of 1995, we have computed the number of female infanticide deaths block wise, and the ratio of these deaths to total female infant deaths, districtwise. The results provide strong support to the picture that emerges from the 1996 sample survey referred to earlier, namely, that of widespread practice of female infanticide in a contiguous stretch of the state encompassing several districts.

Infant Mortality Rates

(i) Survey

The sample survey conducted in February 1996 provides interesting evidence on infant mortality rates (IMR), genderwise. Some important characteristics of the total sample are presented in Table 3. As already noted, the survey covered 10,37,630 households with a total population of 44,97,086. The population was predominantly rural. The sample sex ratio was 987 as compared to 981 for rural Tamil Nadu as per Census 1991 and 1,041 as per HFHS 1992-93. The sample birth and death rates are 21.0 and 9.6 respectively as against 20.2 and 9.0 as per SRS (three-year moving average, 1992-94). The reported IMR at 54.9 is distinctly lower than the SRS figure of 61 for rural Tamil Nadu in 1995. These discrepancies in absolute terms notwithstanding, the overall sample as well as those for each district are adequate enough to permit fairly robust inter-district comparisons, and for a prima facie assessment of gender differentials in IMR as well as the question of presence and extent of female infanticide.

Table 4 presents sample data on gender-specific infant mortality rate and gender-differential in IMR for each district. There are five districts with IMR exceeding 65; 13 districts have IMR between 45 and 65, with the overall sample average at the midpoint of the interval. Six districts report what are, by comparison, 'low'

infant mortality rates, with that of Kanyakumari resembling the figures for Kerala.

Table 4: Gender-Specific Infant Mortality Rates and Gender Differentials in IMR

Revenue District	Infant Mortality Rate			IMR Gender Differential IMR(F)-IMR (M)
	Male	Female	Person	
Dharmapuri	69.0	130.8	98.1	61.8
Madurai ¹	69.2	100.3	84.5	31.1
Salem ²	67.3	95.6	80.2	28.3
Tiruvannamalai Sambuvarayar	46.9	52.2	49.6	5.3
Dindigul ³	62.1	69.9	65.9	7.8
Villuppuram Ramasamy	52.0	59.1	55.6	7.1
North Arcot Ambedkar	49.1	56.1	52.6	7.0
South Arcot Vallalar	49.0	54.3	51.6	5.3
Pudukkottai	45.7	48.2	46.9	2.5
Periyar	49.3	49.0	49.2	-0.3
Coimbtore	37.9	37.4	37.6	-0.5
Chidambaranar	43.3	42.5	42.9	-0.8
Kanyakumari	19.1	17.7	18.5	-1.4
Karur Dheeran Chinnamalai	52.7	50.0	51.4	-2.7
Nilgiris	48.1	45.1	46.7	-3.0
Thanjavur ⁴	46.4	42.5	44.6	-3.9
Nagappattinam Nagai Quaide- e-	45.3	37.8	41.8	-7.5

Milleth				
Tiruchirapally	62.0	58.4	60.3	-3.6
Kamarajar	45.6	41.1	43.5	-4.5
Chengai MGR⁵	47.8	42.3	45.1	-5.5
Tirunelveli Kattabomman	56.4	44.2	50.5	-12.2
Pasumpon Muthramalinga Thevar	56.3	42.1	49.3	-14.2
Ramanathapura m	87.0	68.6	78.2	-18.4
Tamil Nadu	52.7	57.3	54.9	4.6

Notes: 1 Now bifurcated into Madurai and Vaigai Veeran Alagumuthu districts.

2 Now bifurcated into Salem and Rajaji districts.

3 Renamed now as Mannar Thirumalai district.

4 A new district called A T Panneerselvam district has now been created, comprising some blocks from Thajavur

Source: DPH Survey, 1996

Among the five high IMR districts, the figures for Ramanathapuram are reported to be under review and are regarded as unreliable. We leave them out of our discussion [4]. The four remaining high IMR districts are Dharmapuri, Salem, Dindigul and Madurai. In all these cases, the female IMR is substantially larger than the male IMR. Table 5 presents the grouping of districts on the basis of various ranges of value of the gender-differential in IMR expressed as female IMR minus male IMR.

Table 5: Grouping of Districts By [IMR(Female) - IMR (Male)] Values

Range of Values of [IMR (F)-IMR (M)]	No. of Districts (Total No = 24)
<-5	5
Between -5 and 0	9
Between 0 and 5	1
Between 5 and 10	6
> 10	3

Source: Table 4

In the majority of districts (14 out of 24), male IMR exceeds female IMR. Among the 10 districts where female IMR exceeds male IMR, three districts - Dharmapuri, Salem and Madurai - show female IMRs that are exceptionally high at 130.8, 95.6 and 100.3 respectively. It is of course, also true that these three districts report the highest male IMRs (leaving out Ramanathapuram for reasons already stated) at 69.0, 67.3 and 69.2 respectively. But the gender-differential in IMR is very large, being, in the same sequence, 61.8, 28.3 and 31.1 points. Clearly, something more than general backwardness in terms of health status is needed to explain the exceptionally high levels of female infant mortality rates in these three districts.

(ii) PHC Records

The PHC records provide detailed data PHC-wise on infant deaths broken into the following components: early neo-natal (infant death occurring in the first six days of the infant's life), late neo-natal (infant death occurring seven to 27 days after birth) and post-natal (infant death occurring after the first 27 days but within 365 days). Gender specific values for infant mortality rate and its components can be computed from the data. Table 6 presents the relevant data for the districts of Tamil Nadu.

Table 6: Gender Specific Infant Mortality Rate and Components and Sex Ratios, 1995

Name of the District	Infant Mortality Rate		Early Neo-Natal Mortality Rate (0-6 days)		Later Neo-Natal Mortality Rate (7-27 days)		Post Neo-Natal Mortality Rate (28-364 Days)		Sex Ratio	Sex Ratio at Birth
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Dharmapur	45.0	100.0	26.4	76.0	7.0	11.7	11.6	12.4	938	903
Madurai	39.7	70.0	19.0	43.4	8.0	12.6	12.7	14.0	967	922
Salem	43.7	85.4	25.0	60.4	7.2	12.3	11.5	12.8	937	884
Ramnad	46.6	42.4	28.0	22.0	6.1	8.0	12.6	12.4	994	913
Dindigul	43.1	52.9	23.8	27.0	7.5	11.1	11.8	14.7	971	940
Trichy	38.4	38.8	20.0	17.8	6.1	6.5	12.3	14.5	984	922
Perambalur-Thiruvallur	37.5	35.9	16.7	15.9	6.7	7.8	14.1	14.2	970	946
Villupuram	33.7	34.6	13.9	14.6	7.4	8.3	12.4	11.8	957	942
N A Ambedkar	38.1	45.0	14.6	19.7	8.0	9.3	15.4	16.0	1003	961
S A Vallalar	34.2	33.3	18.4	15.8	5.4	7.0	10.4	10.4	964	953
Karur	33.6	33.2	18.2	16.1	3.5	4.7	11.9	12.4	988	949
Tirunelveli	43.3	38.5	17.1	12.3	6.8	5.9	19.4	20.4	1007	967
Thiruvannamalai	31.7	39.2	14.3	16.5	6.1	8.1	11.3	14.6	966	943

P M Thevar	33.4	27.2	15.4	11.5	6.0	5.1	12.1	10.6	996	976
Periyar	37.7	38.9	20.0	18.3	6.0	7.9	11.7	12.7	938	916
Padukkottai	35.4	35.6	17.2	15.2	6.6	7.2	11.6	13.2	995	935
Nilgiris	36.0	37.5	18.7	20.5	6.4	6.7	10.8	10.2	995	954
Chennai MGR	28.4	25.4	14.1	11.1	4.7	4.7	9.6	9.6	976	951
Thanjavur	31.3	27.8	17.6	12.9	4.7	6.4	9.0	8.5	995	961
Kamaraajar	43.5	36.5	17.9	15.6	5.6	5.8	20.0	15.0	994	945
Chidambarnar	42.4	34.6	21.2	14.3	6.4	6.1	14.8	14.2	1035	980
Nagai	35.8	32.4	20.4	17.6	5.4	5.2	9.9	9.6	967	929
Coimbatore	31.4	29.0	16.1	12.9	5.3	5.2	10.0	10.9	964	912
Kanyakumari	14.7	14.6	6.5	6.6	2.1	2.1	6.1	6.0	1013	990
Tamil Nadu	36.9	44.3	18.5	24.0	6.2	7.7	12.1	12.6	974	937

Source: PHC Records 1995

Certain key points emerge from an examination of the data in Table 6. While several districts such as Dharmapuri, Salem, Madurai and North Arcot Ambedkar exhibit a significant positive differential between female and male IMRs; the striking feature is that there is hardly any gender differential in post-natal infant death rates in most of these districts. On the other hand, mortality rates are considerably higher for female as opposed to male infants in the entire

neo-natal phase. The difference is at its sharpest in the early neo-natal phase where female infant deaths outnumber male infant deaths by more than a factor of two in these districts. As can be seen from Table 7, the ratios of early neo-natal female to male infant deaths in 1995 were 2.60, 2.13, 2.11 and 1.30 for Dharmapuri, Salem, Madurai and North Arcot Ambedkar districts respectively. Dindigul and Periyar districts, from where also a sizeable number of female infanticide deaths are reported, show a somewhat different pattern. In these two districts, female to male infant death ratios is at their highest levels in the late neo-natal phase. These differences apart, what emerges clearly is that districts with widespread and significant incidence of female infanticide are also districts where female infants face the largest proportional survival disadvantages in the neo-natal phase. The data also suggest that a large proportion of female infanticide deaths takes place in the early neo-natal phase.

Table 7: Female Infant Deaths: Early Neo-Natal, Late Neo-Natal, Post-Natal and Female Infanticide

District		0-6 Days	Ratio of Female to male deaths	7-27 days	Ratio of Female to Male Deaths	28-365 Days	Ratio of Female to Male Deaths	Female Infanticide (FI) Deaths	FI Deaths as proportion of Female Neo-natal Deaths
Dharmapuri	Female	1805		277		294		1199	
Salem	Male	694	2.6	183	1.5	306	1.0		57.6
	Female	1710		348		361		1033	
Madurai	Male	801	2.1	230	1.5	369	1.0	-	50.2
	Female	973		283		314		571	
North Arcot Ambedkar	Male	461	2.1	195	1.5	309	1.0	-	45.5
	Female	476		224		387		177	
Dindigul	Male	367	1.3	202	1.1	388	1.0	-	25.3
	Female	403		166		220		129	

Periyar	Male	378	1.1	119	1.4	187	1.2	-	22.7
	Female	309		132		214		69	
	Male	368	0.8	110	1.2	216	1.0	-	15.6

Source: PHC Records 1995

Female Infanticide

Evidence on female infanticide from both the sample survey and PHC records are discussed below:

(i) Survey

In the course of the survey, information on infanticide was also collected. Table 8 present data on total infant deaths and deaths due to female infanticide. We have calculated and reported the rate of female infanticide' expressed as percentage of all female infant deaths.

Table 8: Total Infant Deaths, Female Infanticide Deaths And 'Female Infanticide Rates', Sample Survey For 1995

District	Total Infant Deaths		Female Infanticide Deaths	Female Infanticide Rate = Female Infanticide Deaths as per cent of female Infant Deaths
	Male	Female		
Dharmapuri	182	308	183	59.4
Madurai ¹	149	208	112	53.8
Salem ²				
Tiruvannamalai Sambuvarayar	89	99	9	9.1

Dindigul ³	128	135	28	20.7
Villipuram Ramasamy	118	134	1	0.7
North Arcot Ambedkar	99	111	-	-
Perambalur Thiruvalluvar	108	110	1	0.9
South Arcot Vallalar	129	135	1	0.7
Pudukkottai	114	109	-	-
Periyar	101	88	-	-
Coimbatore	74	65	-	-
Chidambaran ar	84	80	-	-
Kanyakumari	33	27	-	-
Karur Dheeran Chinnamalai	96	91	9	9.9
Nilgiris	45	38	-	-
Thanjavur ⁴	94	76	-	-
Tiruchirapalli	136	120	1	0.8
Kamarajar	111	91	-	-
Chengai MGR ⁵	96	81	-	-
Nagai Quaid-e-Milleth ⁴	102	77	-	-
Tirunelveli Kattabomma n	130	95	-	-
Pasumpon Muthramalin ga Thevar	86	63	-	-

Ramanathapuram	135	98	-	-
Tamil Nadu	2585	2613	-	-

Notes: 1 Now bifurcated into madurai and Vagai Alagumuthu Districts.

2 Now bifurcated into Salem and Rajaji districts.

3 Renamed now as Mannar Thirumalai districts.

4 A new district called A T Panneerselvam district has now been created, comprising some blocks from Thanjavur and some from Nagapattinam Quaid-e-Milleth.

5 Now bifurcated into Chengai MGR and Chengai Anna districts.

Source: DPH Survey, 1996.

The results are striking and disturbing. Ten districts report at least one instance of female infanticide even in our relatively small sample. Census coverage would quite possibly reveal a wider geographical spread of this horrifying social practice as is in fact suggested by data from primary health centers that we discuss later on. Four districts - comprising in all eight health unit districts (HUDs)- show very high incidence of female infanticide: Dharmapuri, Madurai, Salem and Dindigul. In the first two, more than half of all female infant deaths and over two-thirds of neo-natal deaths of female infant occurs on account of female infanticide. In Salem, a third of female infant deaths and nearly two-fifths of female neo-natal deaths are due to infanticide. In the case of Dindigul, the proportions are over one-fifth and nearly three-tenths respectively.

(ii) PHC Data 1995

Data from PHC records provide strong confirmation of the survey finding that the practice of female infanticide is very widespread in Dharmapuri, Salem and Madurai districts. Besides these four 'intensive female infanticide' districts, four other districts, North Arcot Ambedkar, Periyar, Karur and Villupuram

Ramasamy, report a minimum of 10 female infanticide deaths. The data are summarized in Table 9.

Table 9: Infant Deaths and Infanticide as per PHC Records, Districts of Tamil Nadu, 1995

District	Infants Deaths			Infant Deaths Due to "Social Cause"		
	Male	Female	Total	Male	Female	Total
Dharmapuri	1183	2375	3558	57	1199	1256
Madurai	965	1570	2535	8	571	579
Salem	1400	2419	3819	58	1033	1118
Tiruvannamalai Sambuvarayar	594	692	1286	0	2	2
Dindigul	684	789	1473	3	129	132
Villupuram Ramaswamy	924	895	1819	1	11	12
North Arcot Ambedkar	957	1087	2044	1	177	178
Perambalur- Thiruvalluvar	391	374	765	2	1	3
South Arcot Vallalar	623	578	1201	0	1	1
Pudukkottai	458	430	888	2	3	5
Periyar	694	655	1349	0	69	69

Coimbtore	647	545	1192	0	0	0
Chidambaranar	491	393	884	0	0	0
Kanyakumari	154	152	306	0	0	0
Karur	240	225	465	1	13	14
Nilgiris	173	172	345	0	0	0
Thanjavur	531	453	984	0	0	0
Nagappattinam Nagai Quaide- e- Milleth	772	651	1423	0	0	0
Tiruchirappally	588	549	1137	1	11	12
Kamarajar	542	529	971	1	5	6
Chengai	980	834	1814	0	1	1
Tirunelveli Kattabomman	900	775	1675	0	0	0
Tirunelveli Kattabomman Pasumpon	900	775	1675	0	0	0
Muthuramalinga Thevar	310	247	557	0	0	0
Ramanathapuram	545	452	997	0	0	0
Tamil Nadu	15746	17741	33487	162	3226	3388

Source: PHC Records

The eight districts where 10 or more female infanticide deaths occur form a contiguous belt. More important, as the map of infanticide brings out clearly, there is a contiguous cluster of blocks where female infanticide occurs. Further, one can see an emerging pattern. While there is a 'hard core' female infanticide region, comprising the northern blocks of Salem district; the southern blocks of Dharmapuri district; a cluster of southern blocks of Dindigul district and of the western half of Madurai district, what should also cause particular concern is the manner in which the phenomenon is spreading from the core area to a much wider neighboring periphery and beyond.

Table 10 (table is missing) presents the distribution of blocks by the number of female infanticide deaths. The table brings out a clear and striking regional pattern. The southern and eastern coastal districts as well as the Cauvery delta districts are by and large free of female infanticide. So are the districts of Coimbatore and Nilgiris on the western border of the state adjoining Kerala. Leaving out metropolitan Chennai, this gives us a contiguous belt of panchayat unions running from the western half of Madurai district through Dindigul, Karur, Periyar, Salem and Dharmapuri to the western end of North Arcot Ambedkar district. Within this belt, the PHC data broadly confirm the picture that emerges from the 1996 sample survey.

While the belt of 'infanticide blocks' is contiguous, the quantum of incidence of infanticide varies considerably along the belt. Out of 386 blocks in the state, 105 blocks report occurrence of female infanticide. Of these, roughly half (52 out of 105 blocks) report less than ten FI deaths. At the other end, just seven blocks report FI deaths exceeding 100 each, and together account for 1,092 FI deaths out of a total of 3,218 FI deaths in the entire state. Of these seven, one was in Salem (Idappadi) while the other six were all in Dharmapuri. Another 16 blocks, mostly from Salem (nine blocks) and Madurai (five blocks), each with infanticide deaths exceeding 50 but below 100, account for 1,123 deaths. Thus 23 blocks account for practically 70 percent of all female infanticide deaths in Tamil Nadu in 1995 as per PHC records. Less widespread but far from negligible incidence of female infanticide is found in 30 blocks, with the number of FI deaths ranging between 10 and 49. These blocks are again concentrated in the two core regions of Salem-Dharmapuri and Madurai-Dindigul, which between them account for 24 blocks, but there is also a spread at this level of some of the blocks in the districts of North Arcot Ambedkar and Periyar. These blocks of Periyar and North Arcot districts are the ones adjoining the core infanticide zones of Salem and Dharmapuri. Together, these 30 blocks account for 481 FI deaths in 1995 which is a little over one-fourth of total FI deaths in the state in 1995. Finally, we have 52 blocks where the incidence of female infanticide is sporadic, but which clearly signal the grave danger of a further and far wider spread of this heinous social

practice. Several non-core districts enter the picture here: Chengai, Kamarajar, Karur, South Arcot Vallalar, Villupuram Ramasamy, Pudukkottai, Tiruchirappalli and Thiruvannamalai Sambuvarayar, Karur, more or less at the midpoint of the FI belt, is especially vulnerable. Seven of its 13 blocks report female infanticide.

Survey and PHC Data: Some Remarks

The data from the primary survey of 1995 and those from the PHC records for the same year broadly corroborate each other, but there are some puzzling differences. The estimates of the rate of female infanticide, defined as the percentage of female infanticide deaths to total female infant deaths, as obtained from the survey and from PHC records are brought together in Table 11 (table is missing). Four districts figure unambiguously in both the survey and the PHC records as major FI districts: Dharmapuri, Salem, Madurai and Dindigul. The district of Karur also emerges from both sources as an area of significant incidence of FI. But rather surprisingly, in the two districts of North Arcot Ambedkar and Periyar, the sample survey did not find a single instance of FI, while PHC records show 177 and 69 FI deaths respectively in these two districts. In the case of Periyar, only two blocks - Ammapet and Bhavani - report a significant number of FI deaths as per PHC records. It is thus possible that the sample survey may have missed out FI cases in Periyar. But since the phenomenon is much more widespread in North Arcot Ambedkar, with nine out of 20 blocks reporting FI as per PHC records, it is difficult to understand how no case of FI came into the sample of the survey.

Caste Factor

In 1986 when the practice of female infanticide in Madurai district of Tamil Nadu first received major media attention, the focus was on the caste group known as 'piramalai kallars'. It was generally held at that time that the practice of female infanticide was for all practical purposes confined to the piramalai kallars. Later, in 1992, when female infanticide was found to be widespread in Salem district, the 'gounder' community was considered to be the one practicing it, and it was believed by many that the practice did not exist among other castes. Our survey results - and the study of 3,000 respondent household where female infanticide had occurred in 1994 or 1995- show a somewhat different and alarming picture.

While the survey data has not yet been completed analyzed, it is abundantly clear that the practice of female infanticide is not confined either to piramalai

kallars in Madurai district or to gounders in Salem. It has spread to many castes. Data from one district alone - Dindigul (now `Mannar Thirumalai') - show occurrence of female infanticide in 35 (self-ascribed) caste groups. Further, the practice seems to be widespread among the poorer and socially disadvantaged communities including thevars, vanniars and scheduled castes. For instance, of 124 cases of female infanticide in Dindigul health unit district, as many as 82 or slightly over two-thirds, were accounted for by the piramalai kallars, other kallars, thevar, parayar and pallar households. Scheduled caste households belonging to the pallar and parayar groups accounted for 46 of these deaths or around three-eighths of all female infanticide deaths in Dindigul health unit district. Similarly, in Salem and Dharmapuri districts, vanniar and scheduled caste households are also practicing female infanticide. Data from Salem health unit district's records for 1994 and 1995 show that vanniar household account for nearly half of all FI deaths. The other castes accounting for a sizeable number and proportion of FI deaths include various SC groups and gounders. The SC groups and the gounders account for around 10 percent each of all FI deaths. It would not be incorrect to conclude that while the piramalai kallars and gounders in their respective areas of numerical and social dominance may have initiated the practice of female infanticide, it now appears to cut across castes. Nevertheless, it is also very likely the case that the practice of female infanticide by the dominant peasant/landlord caste of the local community served to legitimize and provide social sanction to the practice, and contribute substantially to its spread among all castes. The value system of the dominant peasant/landlord caste of the region, and the norms of ritual expenditure patterns established by them also raise, through pressure for emulation, the perceived cost of bringing up female infants for poorer members of the dominant caste in particular, and for all the castes in general.

A question that arises with regard to female infanticide is whether birth order influences the chance of survival of the female infant. Some indicative evidence from the survey of respondents from households where female infanticide had occurred in 1995 is presented in Table 12 (table is missing). Ideally, one would want to look at the ratio of female infanticide deaths to female births for each parity. The data available with us has not yet been fully analyzed in this regard. However, given that the number of births would typically decrease with birth order, some general inferences seem to follow reasonably from the data in Table 10 (table is missing), which pertain to three health unit districts for which the data has been analyzed. The first female infant is, in a majority of cases, not a victim of female infanticide even in these high FI HUDs, although there are instances when it is. The second female infant has a much greater chance of escaping infanticide in Madurai HUD than she does in Periyakulam and Dharmapuri HUDs. While the third female infant is at much greater risk than the first in all

three HUDs, both the second and third seem to be equally at risk in Periyakulam. In Madurai and Dharmapuri, on the other hand, the third female infant runs a much higher risk of being a victim of infanticide than the second is. Given that the population sizes of these HUDs are not widely different, one may not be wrong in inferring that female infant's face the highest risk of death in Dharmapuri HUD, closely followed by Periyakulam HUD.

Concluding Remarks

We have so far confined ourselves to presenting a detailed statistical picture of the incidence of female infanticide in Tamil Nadu, relying primarily on the PHC records for 1995, a statewide sample survey carried out by the directorate of public health in 1996 January-March, and field investigations. These data confirm the widespread of the horrifying phenomenon of FI, and point to a clearly recognizable core region, and a belt running south to north along the western half of the state: four districts at the core, three more as part of the belt, and most disturbing, an expanding periphery of nine districts. While our exposition thus far has clearly established these points of fact, a comprehensive analysis of the phenomenon is beyond the limited objective of this paper.

Notes

1. While Kerala had an incredibly low IMR of 16, Punjab and Maharashtra with IMRs of 54 and 55 respectively did marginally better than Tamil Nadu, according to SRS provisional estimates of 1995.
2. The State Action Plan for the Child in Tamil Nadu in 1994 listed elimination of female infanticide explicitly as a policy objective.
3. The PHC data appear, in general, to under-estimate IMR. Thus, at the state level, for 1995 SRS gives a rural IMR of 61 (provisional), the 1996 sample survey yields 54.9 and the PHC data a figure of 40.5. However, the under-estimation appears to be fairly consistent across districts. The survey-based IMR figures are significantly higher than PHC-based figures for all districts.
4. One point may be noted here. Even though the survey reports a high IMR of 78.2, the reported male IMR at 87.0 is significantly higher than the

female IMR at 68.6. Clearly, Ramanathapuram is not a district where female infanticide is being practiced.

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