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What Ails the Fishermen Community in Ennore Creek: A Socio - Demographic Analysis

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Abstract

Background/Objectives: Fishing communities are socially, economically and educationally disadvantaged. Their settlements are characterized by overcrowding with extremely poor sanitation. Information about the socio – demographic profile of these communities is essential to address the felt needs of this community. The aim of this study is to explore the socio – demographic profile of the fishermen community residing at Ennore Creek in East Coast of India. **Methods/ Statistical Analysis:** A cross sectional study was done among the fishing community in Ennore Creek of North Chennai, Tamil Nadu, India. The cluster sampling method was adopted and 30 clusters were randomly selected by the probability Proportionate to Size (PPS) method. The structured questionnaire was used to collect information regarding the socio – demographic details about the selected study participants and other family members. The study population included individuals who are living in the nine fishing wards of Ennore Creek for the minimum of six months period. Data entry and analysis was done using Statistical Package for Social Sciences (SPSS) version 15. Descriptive statistics were calculated for the variables. **Findings:** In the 780 families with 3542 individuals it was found that about 60.6% lived in semi pucca houses, 100% of the households had electricity, 88.3% of the households had improved drinking water supply, 64.4% of the households had improved sanitation facility, 35.6% of the households practiced open air defeaction, 64.2% of the households had clean fuel for cooking and 12.2% of the households had health insurance. Population below the age of 15 years was 1110 (31.3%), adult population (15–49 years) was 1919 (54.2%) and 254 (7.2%) were above 60 years of age. Number of males to females was 1815 (51.2%): 1727 (48.8%) were females Male literacy was found to be 52.1% while the female literacy was found to be 47.9%. With regard to occupation, 30.5% were fishermen, 27.9% were fish vendors and 22% were involved in non fishing jobs. A sizeable segment (80.1%) of the adults aged between 15–49 years was married. Men (15–49 years) who got married before the age of 21 years were 27.8% and women (15–49 years) who got married before the age of 18 years were 36.4%. It was found that 54.1% of the participants hailed from nuclear families, 60.1% of them had the family size more than four and 65.1% of them belonged to the category of low standard of living. In this community it was found that the current users of any form of tobacco (smoked/chewed/snuffed) were 58.5% while the current consumers of alcohol consumption were found to be 65%. **Application/Improvements:** The settlements and environment of fishermen community is bereft of basic infrastructure, water supply, sanitation, public services and access to healthcare. Low literacy rates, practice of early marriages, declining income from fishing activity and hence inclination to seek non-fishing jobs, prevailing lower socio – economic status, rampant and indiscriminate use of tobacco and alcohol are the salient features that prevail among the fishermen community of Ennore Creek. Health education and health promotional activities to increase the awareness on the hazards of tobacco use, alcohol consumption, importance of environmental hygiene, hazards of open air defecation, importance and benefits of education especially female literacy should be provided to bring about a change in this community.

Keywords: Environmental Hygiene, Ennore Creek, Fishermen Community, Socio Demographic Profile

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1. Introduction

Ennore creek has been supporting the livelihood of many fishing families who are settled in nearby nine villages. Fishermen are one of the few significant occupational communities who succumb and suffer to the unfavourable environmental changes. Despite fishing being the traditional occupation, owing to the dwindling income from fishing, they are compelled to pursue an alternate profession for their livelihood for pragmatic reasons. Fishing communities are socially, economically, educationally disadvantaged, lack financial resources in fulfilling their basic needs and these communities have their distinct social, cultural governance structures and traditional practices.

Urban poor are deprived human settlements are demographically, economically and environmentally vulnerable[1]. The settlements of the fishing communities are characterized by overcrowding and congestion, extremely poor sanitation, lack of civic amenities and deviant behavior like alcoholism and prostitution. Information about the socio-demographic profile are essential to address the felt needs of this community and only population based study can suggest the changes that needs to be embraced for the benefit of the community.

There are few studies that address the impact of pollution on their socio-economic status[2], their health seeking behaviour[3], morbidity profile of the fishermen[4], their treatment seeking preferences for their ailments[5] of the fishermen community in Ennore creek and a landmark study that has described the distribution of diseases among the fishermen community in Pondicherry[6], legal aspect of economic regulation of environmental protection[7] yet it is evident that there is a paucity of literature that has described the socio-demographic profile of fishing community.

2. Materials and Methods

This population based study was conducted in April 2010 among the fishing community in Ennore Creek which is located at the fringe area of North Chennai of Thiruvallur District, Tamil Nadu. Ethical clearance was obtained from the Institutional Ethics Committee of Sri Ramachandra Medical College and Research Institute (DU) (REF: IEC - NI/08/ Mar/03/13). Ennore Creek has twenty four wards with a total population of 35,646 out of which nine wards belong to the fishing community with a total population of 14,461. The nine wards of the fishing community are Sivanpadiveethi, Ellaimaankoil nagar, Kattukuppam are along the banks of Buckingham canal while Ennorekuppam, Mugathuvarakuppam, Nettukuppam, Thanzhamkuppam, Periyakuppam and Chinnakuppam are studded along the coast of Bay of Bengal. There are sixty streets in the nine wards with 3,219 families that belong to fishing community. The population in Ennore Creek is served by a government municipal dispensary, two ICDS centres, one private nursing home and ten private modern medical care practitioners.

2.1 Sampling Method

The cluster sampling method was adopted and 30 clusters were randomly selected by the Probability Proportionate to Size (PPS) method.

2.2 Sample Size

This study is part of a larger study done on the health seeking behaviour among fishermen community and hence sample size was calculated for the same. The prevalence of health seeking behaviour has been assumed to be 50% (as there are no studies done on the health seeking behaviour among the fishermen community), with alpha error of 5%, limit of accuracy of 10% and a design effect of 2, the minimum sample size required for the study was 768.

There were sixty streets in the study area and its cumulative population was prepared for selecting 30 clusters by PPS method. Streets with population of very small number were clubbed with the adjoining streets so that each cluster has a minimum of 100 populations and a list of 55 street clusters with the corresponding population was obtained. The sampling interval was determined by dividing the total cumulative population (14,461) by the total number of clusters (30). The sampling interval obtained was 482. Thirty clusters (streets) were selected by Probability Proportionate to Size (PPS) method and the number of individuals selected in each cluster was 26, total number of individuals studied for the main study was 780. The families which had at least one individual who had illness in the last six months were identified and accordingly 780 subjects were selected. The population of these families comprised to a total of 3542 individuals.

3. Study Tool

A structured questionnaire was developed which was pretested among the fishermen community residing at Thiruvottriyur, Thiruvallur District, Tamil Nadu (not part of actual study area). The structured questionnaire thus developed solicited information on background details like name, age, gender, address, religion, level of education, occupation status, marital status, details about the family composition, type of family, family size, socio-demographic aspects of the subjects concerned including Standard of Living Index (SLI) questionnaire used in National Family Health Survey (NFHS - 2), the type of vehicle used for fishing, details regarding population household profile and details on use of tobacco and alcohol.

4. Data Collection

A written informed consent was obtained prior to the interview. A detailed inquiry about the family members was made to the wife of the head of the household and if in case she was not available at the time of the visit that particular household was revisited.

4.1 Standard of Living Index

Standard of living of study subjects was assessed by inspecting their living conditions and enquiring about their material possessions and graded as high, medium or low as per the guidelines followed in NFHS - II survey[8].

4.2 Improved Drinking Water Supply

Improved drinking water supply was assessed based on the provision of drinking water through Piped water into dwelling/yard/plot, public tap/standpipe, tube well or borehole, protected dug well, protected spring, rainwater, community RO plant as per the guidelines followed in NFHS 3[9].

4.3 Improved Sanitation Facility

Improved sanitation facility was assessed based on the presence and use of Flush to piped sewer system, flush to septic tank, flush to pit latrine, Ventilated Improved Pit (VIP)/biogas latrine, pit latrine with slab, twin pit/composting toilet, which are not shared with any other household as per the guidelines followed in NFHS 3[9]

4.4 Clean fuel for cooking

Clean fuel for cooking was assessed based on the presence and use of Electricity, LPG/natural gas, biogas as per the guidelines followed in NFHS 3[9].

4.5 Health Insurance or Health Scheme

The health insurance may be through a mutual or community- based program, a national or state insurance scheme (e.g., Central Government Health Scheme), a plan offered by an employer (either that of the respondent or of another family member) or a private policy purchased from a commercial provider as per the guidelines followed in NFHS 3[9].

5. Data Compilation and Analysis

Data entry and analysis was done using SPSS version 15. Descriptive statistics were calculated for the variables.

6. Results

The study included 780 families with a total of 3542 individuals from the fishermen community who were residing for the last six months at Ennore Creek. In this study population below the age of 15 years was 1110 (31.3%), adult population (15-49 years) was 1919 (54.2%) and 254 (7.2%) were above 60 years of age. Mean age of the population was 26.5 years (median of 25 years) and the age ranged between a minimum of 1 month and a maximum of 105 years. It was found that 1815 (51.2%) were males and 1727 (48.8%) were females.

In terms of education, this study revealed that 876 (29.3%) of the participants were illiterates; the total male literates were 1100 (52.1%) while the total female literates were 1012 (47.9%). Among the adult population aged between 15-49 years (n = 1919), 501 (26.1%) of them were illiterates while 1418 (73.9%) were literates. Among the adult literates (n = 1418), adult male literates were found to be 720 (50.8%) while adult female literates were found to be 698 (49.2%).

With respect to occupation in this study 742 (30.5%) participants were fishermen, 678 (27.9%) participants were engaged in fish vending while 534 (22%) participants were involved in non - fishing jobs. In this study it was found that among the children less than 14 years of age, 14 children were involved in fishing activity and

10 children were engaged in fish vending. The types of vehicles used for fishing activity were catamaran (63.9%), fibre boat (33.6%) and launchers (2.5%) by the fishermen (n = 742).

Among the adult population aged between 15-49 years (n = 1919), it was found that 1538 (80.1%) participants were married. With regard to age at marriage, 427 (56.1%) of the married men aged between 15-49 years (n = 761) were married before the age of 21 years while 560 (72.1%) of the married women aged between 15-49 years (n = 777) were married before the age of 18 years. Mean age of marriage for men and women (15-49 years) were 18.7 years and 16.4 years respectively.

Men married (25-29 years, n = 123) before the age of 21 years were found to be 34 (27.6%) while women married (20-24 years, n = 27) before the age of 18 years was found to be 48 (37.8%). Mean age of marriage for men (25-29 years) and for women (20-24 years) were 22 years and 18.9 years respectively.

Participants who hailed from nuclear families were found to be 1916 (54.1%) while 23 (0.6%) participants were either uni-member or belonged to the family of single parent with children. With regard to their family size, 2128 (60.1%) subjects belonged to the family with members more than four. The mean size of the family in the study population was 5.04 and the number of family members in the study population ranged from a minimum of a single member to a maximum of 11 members.

Substance use like tobacco and alcohol was present among the fishermen community and the current users of any form of tobacco (smoked/chewed/snuffed) were found to be 58.5% while current consumers of alcohol consumption were found to be 65%.

With regard to the availability of civic amenities in this community, all the 780 (100%) households had electricity, 689 (88.3%) of the households received improved drinking water supply (piped water into dwelling/public tap/public standpipe/municipal water tanks) while 91 (11.7%) of the households procured drinking water from indiscriminate sources.

Improved sanitation facility (Flush to piped sewer system/flush to septic tank) was present in 502 (64.4%) households while 278 (35.6%) of the households practiced open air defeaction. Clean fuel for cooking like LPG was used in 501 (64.2%) of the households while 279 (35.8%) of the households used kerosene, charcoal and wood as their fuel for cooking.

Health scheme or health insurance (medical reimbursement from the employer/private commercial health insurance schemes) among this fishermen community was availed by 12.2% households. Socio demographic profile, environmental profile of the fishermen community are given in Table 1.

Table 1. Socio-demographic characteristics of the fishermen community

Sl. No.	Characteristics	
1	Age (n = 3542)	N (%)
	0 – 6 years	554(15.6%)
	7 – 14 years	556(15.7%)
	15 – 49 years	1919 (54.2%)
	50 – 59 years	259 (7.3%)
	Above 60 years	254(7.2%)
2	Gender (n = 3542)	N (%)
	Males	1815(51.2%)
	Females	1727(48.8%)
3	Religion (n = 3542)	Total – N(%)
	Hindu	1922(54.3%)
	Christian	1034(29.2%)
	Muslim	586(16.5%)
4	**Education (n = 2988) –** (Children less than 7 years of age (n = 554) were excluded)	N (%)
	Illiterate	876(29.3%)
	Primary education	944 (31.6%)
	High school (6 – 10)	1064 (35.6%)
	Higher secondary & College education	104 (3.5%)
5	**Literacy Status (n = 2112) –** (Only the literates above 7 years of age were included)	N (%)
	Male literacy	1100 (52.1%)
	Female literacy	1012 (47.9%)
6	**Occupation (n = 2432) –** (Children less than 14 years of age (n = 1110) were excluded)	N (%)
	Fishermen	742 (30.5%)
	Fish vendors	678 (27.9%)
	Housewife	260 (10.7%)
	Unemployed	74 (3.0%)
	Non Fishing Jobs	534 (22.0%)

	Students (Above 14 years of age)	144 (5.9%)
7	**Marital status (n = 1919) –** (Adults aged 15 – 49 years were only included)	N(%)
	Unmarried	381 (19.9%)
	Married	1479 (77.1%)
	Widower / Widow	34 (1.8%)
	Separated / Divorced	25 (1.2%)
8	Age at marriage of married men aged between 15 – 49 years (n = 761)	N(%)
	Men married before the age of 21 years	427 (56.1%)
	Men married after the age of 21 years	334 (43.9%)
	Mean age at marriage for men	18.7 years
	Age at marriage of married women aged between 15 – 49 years (n = 777)	N(%)
	Women married before the age of 18 years	560 (72.1%)
	Women married after the age of 18 years	217 (27.9%)
	Mean age at marriage for women	16.4 years
9	Type of Family (n = 3542)	N(%)
	Nuclear Family	1916(54.1%)
	Joint Family	1603(45.3%)
	Others	23(0.6%)
10	Standard of Living Index (n = 3542)	N(%)
	High	172(4.9%)
	Medium	1064(30.0%)
	Low	2306(65.1%)
11	Use of tobacco (n = 2454)	N(%)
	Non user of tobacco	776 (31.6%)
	Ex user of tobacco	242 (9.9%)
	Current user of tobacco above 15 years	1414 (57.6%)
	Current user of tobacco less than 14 years	22 (0.9%)
12	Use of alcohol (n = 2474)	N(%)
	Non user of alcohol	624 (25.2%)
	Ex user of alcohol	242 (9.8%)
	Current user of alcohol above 15 years	1566 (63.3%)
	Current user of alcohol less than 14 years	42 (1.7%)
13	Type of Housing (n = 780 households)	N(%)
	Kutcha	239 (30.6%)
	Semi pucca	473 (60.6%)
	Pucca	68 (8.7%)
14	Civic Amenities (n = 780 households)	N(%)
	Electricity	780 (100%)
	Availability of improved drinking water	689 (88.3%)
	Availability of Improved sanitation facility	502 (64.4%)
	Practice of open air defecation	278 (35.6%)
	Availability of Clean cooking fuel	501 (64.2%)
	Availability of Health Scheme / Health Insurance	95 (12.2%)

7. Discussion

The study is based on the sample of individuals among the fishermen community who were selected by cluster sampling method based on the presence of at least one illness during the last six months. The families which had at least one individual who had illness in the last six months were identified and accordingly 780 subjects were selected. The population of the 780 families comprised to a total of 3542 individuals from all age groups. Hence, in order to describe the profile of the 780 families with 3542 individuals are discussed. The fishing community formed a heterogeneous lot because of varied socio-cultural background, educational status, occupation and this ensures the great extent of external validity of this study.

Literate is a person who can read and write with understanding in any language. Effective literacy rate is the number of literates per 100 population aged 7 years and above[10]. In this study it was found that 31.6% of them have had d primary education, 35.6% of them had education up to high school and 3.5% of them have had higher education. This is in concordance with the study conducted among the fishermen community in Pondicherry by Dr. Rotti where 27.6% of the subjects have had primary education, 43.2% of them had education up to high school and 1.3% of them have had higher education[6]. Upon interaction with the community it was understood that the government policies to provide free education and mid - day meal schemes to school children it is observed that the enrolment in the government school in this area has shown a positive trend.

Among the fishermen community in Ennore Creek, total literacy (all literates above the age of 7 years) found to be 70.7% while the in the study conducted among the fishermen community of Pondicherry by Dr. Rotti the total literacy was found to be 72.1%[6]. Male literacy in this study was found to be 52.1% while the female literacy was found to be 47.9% which are alarmingly low. Adult literacy rate is the number of literates per 100 population aged between 15-49 years[11] and in this study was found to be 73.9% while adult male literacy was found to be 50.8% and adult female literacy rate was found to be 49.2%. In the opinion of the researcher the literacy status of the fishermen community in Ennore Creek are overwhelmingly abysmal and mandates immediate and necessary intervention. Goswami Mihir et al in their study reported that 16.8% males and 5.6% females were literate. The observed difference between literate males and females was statistically significant ($p<0.001$)[12]. Marimuthu P et al in their study conducted at Delhi slums reported 73.8% and 49.5% literacy rate among males and females respectively[13]. Viswanathan V et al. had reported 51.8% and 26.1% literacy rate among males and females respectively at slums of Chennai[14]. Concordance between the present study and the various reference studies indicate that the education is not the prime priority among the disadvantaged communities.

With regard to occupation in this community, it was found that 30.5% were involved in fishing activity while 27.9% of the participants were involved in fish vending and 22% of them were involved in non - fishing jobs. According to legislation of labour, children less than 14 years are not allowed to be employed. Nevertheless, in this community it was found that 14 children less than 14 years of age were involved in fishing and 10 children were involved in fish vending. During the conduct of the study it was comprehended that owing to the rapid industrialization and degradation of the natural ecosystem the income from fish catch has declined over the past years. Due to the increased environmental pollution and mushrooming of the industries gone are the days when fishing was claimed as their traditional occupation. Given the economic crunch which is expected more to increase in the years to come, nowadays they prefer to seek non - fishing jobs (labourer, painter, housekeeping, working in export company, tailor, housemaid etc) to sustain their living.

The types of vehicles used for fishing activity were catamaran (63.9%), fibre boat (33.6%) and launchers (2.5%) by the fishermen in Ennore Creek. Similar findings were found in the study conducted by Dr. Rotti, where the fishermen in Pondicherry used catamaran (59%) and fibre boats (37%) as their vehicles for fishing activity[6]. Fishermen in this community who used launchers worked as hired workers and did not own them and this was the same state of affairs among the fishermen in the reference study. While discussing with the community it was evident that while using a catamaran, duration of fishing activity is far less than the duration of fishing activity while using a launcher. It was apparent that fish catch was also relatively high when compared to that of catamaran and fibre boat. The types of fishes caught with use of launcher were far more lucrative because the ability to fish in deep sea as compared to catamaran and fibre boat on shallow waters. Fishermen who worked in the launchers were either paid in cash or with some share of fish catch. Despite this depth in knowledge it is still not possible for them to procure for various pragmatic financial and opinionated reasons.

A discernible proportion of 80.1% adults aged between 15-49 years were married. Despite the declining trend of early marriage among the adults aged between 20-29 years, the occurrence of early marriages cannot be denied. Fishermen community is one occupational group with deep rooted cultural beliefs and mores. During the conduct of the study it was understood that early marriages are quite frequent and they intend to propose the same within their community. Owing to their cultural beliefs and community norms, it was found that polygamy was widely practiced and the community does not seem to be concerned about this practice but seemed to consider it as a way of life.

In this community, 54.1% participants hailed from nuclear families while 45.3% participants hailed from joint families and with regard to family size it was found that 60.1% of the participants belonged to the family whose family size was more than four. Dr. Rotti in his study conducted among the fishermen community in Pondicherry found that 82.5% of the subjects hailed from nuclear families and with regard to family size it was found that for 57.7% of the participants the family size was more than four[6]. Therefore it is obvious that the fishermen live in nuclear families but have large families. This feature best describes the detrimental effects of practice of early marriage, decreased literacy status coupled with the lack of knowledge and awareness of the available and acceptable contraceptive practices.

Socio-economic status in this study was assessed using SLI[9] (standard of living index according to NHFS 3) while in the study by Dr. Rotti, Prasad's social classification was used to assess the socio-economic status. With reference to standard of living index it was found that greater (65.1%) proportion of the subjects belonged to the category of low standard of living. According to members in this community, the average monthly per capita income was found to be Rs. 894.73 (ranged between Rs. 250 to Rs. 2500) and this was highly erratic and variable. It was further found that about 87.9% of the community had monthly per capita income of Rs. 1000 which is in concordance with the estimates had per capita (98% had monthly per capita income of less than Rs. 1050) depicted in the study conducted by Dr. Rotti[6].

In this fishermen community it was found that the current users of any form of tobacco were 58.5% while current consumer of alcohol consumption was found to be 65%. Dr. Rotti in his study found that only 21.8% of the fishermen were current users of tobacco while 60.6% of the fishermen of Pondicherry were current users alcohol[6]. Essentially fisher folk of Ennore Creek used any form of tobacco (smoked/chewed/snuffed) as of much as they consumed alcohol but the fishermen of Pondicherry consumed alcohol more than they smoked tobacco.

In essence, the use of tobacco and consumption of alcohol is highly rampant in this community. It is alarming and important to note that children less than 14 years of age are indulged in smoking and drinking alcohol in this community. They were found to be presumptuous about their preference to smoke cigarettes and consume alcohol as they considered it to be stylish and flamboyant. The proportion of tobacco use and alcohol consumption is perturbing high and absolutely detrimental to the society. This kind of disruptive behavioural risk tends to percolate in the community and hence it is important to promote awareness and health educational activities to curb these unhealthy behaviours from escalation.

With regard to the availability of civic amenities in this community it was study it was found that all the 780 (100%) households had electricity, 88.3% of the community received improved drinking water supply which is in concordance with estimates ascertained by NFHS-4 (99.2% for electricity and 86.9% for households with an improved drinking water source)[11]. On interaction with the community it was apparent that there was an intermittent drinking water supply through piped tap/hand pump/municipal water tanks at public places and further the water tanks were cleaned once in two-three months and the common well were not periodically disinfected.

Improved sanitation facility was present in 502 (64.4%) households which are in concordance with the estimates to the NFHS-4 data where households with an improved sanitation facility was found to be 69.7% in urban areas[11]. It is noteworthy that sizeable proportion 278 (35.6%) of the households practiced open air defeaction. Researcher perceived that the community felt a separate toilet was not necessary and was a waste of space. In some households toilets were present but were used for other purposes like storehouse/dump yard. Open air defeaction according to the community was considered as a practice for generations and they were found to be defiant about their behaviour. Goswami Mihir et al in their study found that there was no sanitary latrine facility or underground drainage systems resulting in all inhabitants of studied slum were compelled to defecate on open land[12].

Health scheme or health insurance among this fishermen community was availed by 12.2% households; it was predominantly medical reimbursement from the employer while few were private commercial health insurance schemes. Rotti in his study explains that are number of welfare measures being taken for the benefit of the fishermen like providing subsidy for wooden mechanized boats, fibreglass reinforced plastic boats, different types of catamaran, housing, training regarding modern technologies of fishing, fishermen saving cum relief scheme, fishermen group accident insurance scheme etc. but there are hardly any welfare programs existing in the health sector[6].

8. Conclusion

Profile of the fishermen community is seemingly rustic and unsophisticated but lucid and scrupulous understanding of the socio demographic characteristics of this special occupational group is vital. This conscientious assessment enables one to realize their customs, beliefs, values, cultural practices, qualms, their felt needs that are specific to the fishermen community.

The settlements and environment of fishermen community is bereft of basic infrastructure, water supply, sanitation, public services and access to health care. Low literacy rates, practice of early marriages, environmental degradation, rapid proliferation of industries, declining income from fishing activity and hence inclination to seek non-fishing jobs, prevailing lower socio-economic status,

rampant and indiscriminate use of tobacco and alcohol are the salient features that prevail among the fishermen community of Ennore Creek. The complexity of the urban environment and the social strata therein presents a tough challenge to the sustainability and relevance of health and development programmes[15].

Health education and health promotional activities to increase the awareness on the hazards of tobacco use, alcohol consumption, importance of environmental hygiene, hazards of open air defecation, importance and benefits of education especially female literacy should be provided to bring about a change in this community. The millennium has presented with an increasingly grim challenge to these disadvantaged groups, failing which the gains achieved till date may soon recede into oblivion[15]. As a social responsibility it is only ethical to understand their needs and offer the best to meet their requirements; respect and protect their rights and enable them to live their life to their full potential.

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