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Living Condition and Health of Two Social Groups Inhabiting a Squatter Settlement in Calcutta, India

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KEY WORDS Living condition; squatter dwellers; health.

ABSTRACT Squatter dwellers are found in almost all the Third World countries. Poor living condition is the characteristic feature of all the squatter settlements. Again, poor living condition is also associated with the health condition of the squatter dwellers. In the present study an attempt has been made to compare and contrast the living condition of two social groups (Hindu and Muslim) inhabiting a squatter settlement in Calcutta, India. The results show that the overall living condition of the Muslim is worse than the Hindu. The morbidity pattern is also worse in the Muslim in the Hindu.

INTRODUCTION

Twentieth century urbanization has brought in his wake an alarming, inevitable and persistent problem of slums and squatters. The National Commission on Urbanization in its report submitted to the Government of India (1988) has observed that "the most visible and dehumanizing manifestation of India's urbanization is the large number of squatters and shanty dwellers". The causes of this distressing situation are deep rooted in wide ranging factors" (Cited by Tewari, 1991). The growth of these squatters and shanty dwellers has become a conspicuous phenomenon in the Third World cities of Asia, Africa and Latin America (Marshall, 1966). The physical characteristics of squatters all over the world are the following: low-cost housing, uncertain electricity facilities, inadequate sanitation and water facilities, personal hygienic practices, etc. These are the most common factors that affect the health of a population. The squatter dwellers thus are more susceptible to different morbid conditions. A number of studies conform that women are more vulnerable than men to many of the environmental hazards associated with poor housing and living conditions, as they take the sole responsibility for child rearing and household management (Moser and Peake, 1987; Lee-Smith and Trujillo, 1992; Satterthwaite, 1993; Surjadi et al., 1994).

The World Health Organisation (WHO) emphasizes the health implication of housing as one of the common disadvantages of squatter settlements thus: " housing is intimately related to health. Poor housing condition may provide weak defense and injury or even increases vulnerability to them" (Tewari, 1991). Stephens et al. (1985) showed a strong positive association between poor housing condition and various chronic and infectious diseases. Poor urban habitation promotes the survival and transmission of intestinal parasites and aggravates infection (Crompton and Savioli, 1993). A number of studies ranging from all over the world have established greater prevalence of diarrhoea and various helminthiasis in environments with poor housing, water and sanitation facilities (Bradley et al., 1992). Songsore and McGranahan (1993) showed that in the poorer areas of Ghana, diarrhoea is highly correlated with sharing a toilet with five other households. According to a survey report (1954-58) on the slums of Calcutta, the majority of the houses possessed 30 sq. ft. per capita space, and about 55% of the households shared a toilet with more than 10 households (Sen, 1970). However, Bapat and Crooke (1984) in a survey in Poona city found a negative correlation between morbidity and per capita provision of latrine. Indoor air pollution from the combustion of fuels for cooking leads to respiratory tract infection, which in turn may lead to repeated episode of acute respiratory tract infections (ARI), paving the way for early onset of chronic obstructive lung disease (WHO, 1992; Chen et al., 1990; Surjadi, 1993). Guha (1958) surveyed a slum population in Calcutta and pointed out that 1.6% of the individuals are affected with tuberculosis.

Studies from all over the world show that poor ventilation, inadequate water supply, improper waste disposal and less per capita space lead to high incidence of mortality (Mahadevan, 1983; Gunatilleke, 1991). Tecky and Shorter (1984) showed that housing condition, personal hygiene and economic status are some of the prime determinants of child mortality in a squatter

settlement in Jordan. In Turkey, increased infant and child mortality was found in households where the overall dwelling quality (as measured by building materials) was poor (Timaeus and Hill, 1985).

In view of this, the objective of the present study is to compare and contrast the sanitation facilities, living condition, hygienic practices of two social groups inhabiting the same squatter settlement in Calcutta. Moreover, an attempt has been made to see whether these three factors have any relationship to some health related traits.

The study has been restricted to hygienic practices and health of mothers and sanitation facilities and household conditions in general.

MATERIALS AND METHODS

In the Calcutta Metropolitan area, there are large slums and squatter settlements. One such squatter settlement is located on the embankment of the canal stretching from Baghbazar to Beliaghata Railway Bridge. The settlement is located on both sides of the embankment. The study population comprises Hindu and Muslim, migrated from South 24 Parganas district of West Bengal.

The environment of the squatter settlement studied is extremely unhygienic. The lack of sanitation and garbage accumulation is conspicuous. The impoverished condition of these people is manifested in the dwelling types, materials used for constructing the dwellings, overcrowding, etc. The stretch selected for the study comprises Calcutta Municipal Corporation Ward nos. 28 and 36 (Canal West) and 29 (Canal East). This stretch has been selected particularly because the two social groups reside there in adjacent clusters. Most of the adults of both the sexes and groups are non-literate and work as day labourers.

In the present study, living condition is measured with indicators like sanitation facilities, hygienic practices and household conditions. Data on sanitation facilities, hygienic practices and housing conditions were collected through questionnaire/schedule on 119 mothers (Hindu 69, Muslim 50) between 20 and 40 years of age. The following types of information were collected: sanitation facilities - sources of water for drinking, cooking, washing of clothes and utensils, disposal of waste, type and sharing of toilet; hygienic practices - bathing, paring of nails, washing of hands before taking principal meal and after easing (with soap); housing conditions - household density, provision of ventilation, building materials, place of cooking, etc. Data on morbidity were collected on the same set of mothers for a period of two week immediately preceding the date of survey. Data on the following symptoms were collected: diarrhoea, blood/mucus in the faeces, stomach ache, vertigo, sore throat, hoarseness, dry cough, wet cough, breathlessness, cold and acidity.

The data were collected during the December 1996-January 1997.

Table 1: Sources of water for various purposes

Groups		*Public hydrant*	*Tap*	*Tube-well*	*Public hydrant and tap*	*Public hydrant and tubewell*	*Tap and Tubewell*	*Public hydrant, tap and tubewell*	*Total*
Drinking									
Hindu	No.	0	50	13	0	0	6	0	69
Muslim	No.	0	48	2	0	0	0	0	50
Bathing									
Hindu	No.	27	29	2	5	5	0	1	69
Muslim	No.	19	27	1	3	0	0	0	50
Cleaning Clothes									
Hindu	No.	39	21	2	5	2	0	0	69
Muslim	No.	23	23	1	3	0	0	0	50
Cleaning Utensils									
Hindu	No.	19	35	4	3	2	6	0	69
Muslim	No.	10	37	2	1	0	0	0	50
Cleaning Food Items									
Hindu	No.	0	55	5	0	0	9	0	69
Muslim	No.	0	46	4	0	0	0	0	50

RESULTS

Sanitation Facilities

Table 1 shows that majority of the households of both the groups use tap water for drinking, bathing, cleaning utensils and food items. The frequency of use of tap water for these purposes is more in the Muslim compared to the Hindu households. For cleaning clothes, majority of the households of both the groups use public hydrants. However, the frequency is higher in the Hindu than in the Muslim households. A section of the Hindu and Muslim households also use tap water and public hydrants for cleaning clothes and utensils respectively.

The container meant for storing drinking water is cleaned at least once a day by most of the households (73.0%) of both the groups. A certain section of both the groups clean the drinking water container three times a week.

More than 80.0% of both the households of both the groups share a pit toilet. A section of the adults (12) belonging to the Hindu households use the Calcutta Munjcipal Corporation's community latrine.

Table 2: Number of households sharing a toilet

Groups		*No. of household/toilet*			
		<5	*5-9*	*≥10*	*Total*
Hindu*	No.	21	22	14	57
	%	36.84	38.60	24.56	100.0
Muslim	No.	6	11	33	50
	%	12.0	22.0	66.0	

*Household adults sharing community toilet of the Calcutta Municipal Corporation has been excluded.

Table 2 shows the number of households sharing a toilet. Toilets which are used by <10 households have been pooled as "infrequently used" and those used by ≥ 10 households as "frequently used". However, most of the Hindu households fall in the "infrequently used" category. Most of the Muslim households belong to the "frequently used" category compared to the Hindu households.

Table 3 shows that waste water from most of the households of both the groups are deposited in the canal. The frequency of disposal of waste water in the canal is more frequent in the Hindu than in the Muslim households. The frequency of waste water remaining stagnant in front of the house is higher in the Muslim than in the Hindu households.

The frequency of disposal of solid waste from households in the canal is the highest in both the groups. The frequency is higher in the Hindu (89.96%, 60) than in the Muslim (76.0%, 38) households. The rest of the sections of both the groups dispose solid waste in open space like roadside or empty land.

Hygienic Practices

Majority of the individuals of both the groups (more than 90.0%) take bath daily. The frequency of taking bath daily is similar in both the groups.

Table 4 shows that the frequency of using soap daily, during bath is the highest in both the groups. The frequency is higher in the Hindu than in the Muslim. A gradual decrease in the frequency of using soap during bath is found in both the groups, in the following order: thrice a week, twice a week and once a week- except in the Muslim.

The frequency of paring of nails at least two times in a month is the highest in the Hindu (62.32%, 43) followed by once (37.68%, 26). In the Muslim, the frequency is the highest in the once-a-month category (54.0%, 27) followed by twice (46.0%, 23).

Majority of the individuals of both the groups do not wash their hands with soap after easing. The frequency of not washing hands with soap after easing is higher in the Muslim (96.0%, 48) than in the Hindu (79.71%, 55). However, majority of the individuals of both the groups (more than 94.0%) wash their hands with plain water before taking their principal meal.

Housing Conditions

Table 5 shows that most of the households of

Table 3: Disposal of wastewater

Groups		*Canal*	*Nearby gutter*	*Remains stagnant in front of the house*	*Total*
Hindu	No.	48 (69.57)	10 (14.49)	11 (15.94)	69 (100.0)
Muslim	No.	26 (52.0)	8 (16.0)	16 (32.0)	50 (100.0)

Percentage in parentheses

Table 4: Use of soap during bath (in a week)

Groups		*Daily*	*Thrice*	*Twice*	*Once*	*Total*
Hindu	No.	38 (55.07)	15 (21.74)	12 (17.39)	4 (5.80)	69 (100.0)
Muslim	No.	20 (40.0)	12 (24.0)	16 (32.0)	4 (8.90)	50 (100.0)

Percentage in parentheses

Table 5: Principal fuels used for cooking

Groups		*Fire wood*	*Charcoal*	*Kerosene*	*Kerosene and fire wood*	*Total*
Hindu	No.	44 (63.77)	6 (8.70)	13	6 (8.70)	69 (100.0)
Muslim	No.	24 (48.0)	16 (32.0)	7 (14.0)	3 (6.0)	50 (100.0)

Percentage in parentheses

both the groups use firewood as principal fuel. The frequency of using firewood as principal fuel is higher in the Hindu than in the Muslim households. A large section of the Muslim use charcoal as principal fuel. The frequency of using kerosene as principal fuel is higher in the Hindu than in the Muslim.

Table 6 shows that the frequency of using family room (which is the only room generally available) as kitchen is the highest in both the groups. The frequency is higher in the Hindu compared to the Muslim households. A large section of the Muslim cook food in open air.

Table 7 shows that a small section of both the groups have household density of <5 sq.ft./person. The frequency of household density ranging from 5 to <10 sq.ft./person is higher in the Muslim than in the Hindu. The frequency of household density in the categories 10 to <15 sq.ft./person and ≥ 15 sq.ft./person is higher in the Hindu than in the Muslim.

Most of the households of both the groups are with one room (95%) with roofs made up of bamboo and plastic sheets and walls made up of bamboo splits. Most of the houses of both the groups have no proper ventilation (above 65%). However, the frequency of houses with ventilation is higher in the Hindu (37.4%, 24) than in the Muslim (28.0%, 14).

Self-reported Morbidity

Table 8 shows that cold and acidity are the two major ailments (frequency-wise) reported by the individuals of both the groups. These two ailments have been reported more by the Hindu than that by the Muslim. Stomach ache has been reported by more number of Muslim than that of the Hindu. Occurrence of diarrohea has been reported more by the Muslim than by the Hindu. However, only 3 Muslim individuals reportedly suffered from blood/mucus in faeces. Regarding ailment of throat, most of the individuals of both the groups reported suffering from wet cough. The frequency of reporting this ailment is higher in the Muslim than in the Hindu. Breathlessness

Table 6: Place of cooking

Groups		*Separate kitchen*	*Open air*	*Family room*	*Total*
Hindu	No.	11 (15.94)	2 (2.90)	56 (81.16)	69 (100.0)
Muslim	No.	2 (4.0)	15 (30.0)	33 (66.0)	50 (100.0)

Percentage in parentheses

Table 7: Household density (sq.ft./person)

Groups		*<5 sq.ft./person*	*5-10 sq.ft./person*	*10-15 sq.ft./person*	*≥15 sq.ft./person*	*Total*
Hindu	No.	2	16	26	25	69
Muslim	No.	9	30	9	2	50

Table 8: Self reported morbidity

Types of ailments	*Hindu*		*Muslim*	
	No.	*%*	*No.*	*%*
No illness	10	14.49	7	14.0
Diarrohea	7	10.14	12	24.0
Blood/mucus in faeces	0	-	3	6.0
Stomach ache	8	11.59	20	40.0
Vertigo	10	14.49	10	20.0
Sore throat	6	8.70	0	-
Hoarseness	2	2.90	1	2.0
Dry cough	4	5.80	2	4.0
Wet cough	7	10.14	8	16.0
Breathlessness	7	10.14	4	8.0
Cold	25	36.23	10	20.0
Acidity	35	50.72	20	40.0
Others	13	18.84	8	16.0

has been reported more by the Hindu than by the Muslim. Similarly, vertigo, and fever associated with body ache, have been reported more by the Hindu than by the Muslim. Frequency of reporting "no illness" is the same in both the groups.

DISCUSSION

The study population resides in an unhygienic environmental condition manifested by their dwelling types, overcrowding of dwellings, building materials, etc. The canal, beside which they stay itself is very polluted. As the people under study reside in settlements not recognized by the Calcutta Municipal Corporation, they are deprived of facilities like adequate water supply, sanitation facilities, electricity, etc. For procuring water, the peoples of this area have to go in the nearby areas which are under the municipal jurisdiction.

Roadside taps are the major source of water for the purpose of drinking, cleaning utensils and cleaning food items for both the groups. Water from public hydrants is also used by a section of the households for the purpose of bathing and cleaning clothes and utensils, in both the groups. In general, the Muslim households have been found using tap water for various purposes more frequently than the Hindu households. Also, in general, both the groups clean the container meant for storing drinking water regularly.

Most of the individuals of both the groups use pit-toilets with enclosures. However, a section of the Hindu individuals also use a community latrine situated in the adjacent slum area. Each pit-toilet is shared by a number of households, the number varying from <5 households/toilet to ≥10 households/toilet. The frequency of using toilets shared by ≥10 households is higher in the Muslim than in the Hindu.

The canal is the place for the disposal of waste-water and solid wastes for the both the groups. However, a section of the households of both the groups dispose waste water in front of their houses and solid wastes on the road sides (the Muslim does this in higher frequency).

Though most of the individuals of both the groups take daily bath, however, daily use of soap during bath is more frequent among the Hindu individuals than among their Muslim counterparts.

The Hindu individuals seem to be more conscious about paring of nails than the Muslim. Washing of hands with soap after easing does not appear to be the usual practice in both the groups. However, the Muslim seems to be less conscious than the Hindu in respect of this practice.

Firewood is the principal source of fuel in case of both the groups. Most of the households of both the groups are "single-roomed" within which they cook and live. So, the chance of indoor air pollution affecting the health of household members is high. The magnitude of pollution increases, as most of the houses of both the groups are ill ventilated. In the Hindu-Muslim comparison, the frequency of the provision of ventilation in households is higher in the Hindu than in the Muslim. Household density also affects health. Most of the Muslim live in more dense households than the Hindu. In general, the dwelling materials of most of the houses are very poor.

It appears from the study that the overall living condition of both the Hindu and Muslim study groups is poor. However, the Hindu has a relatively better living condition than the Muslim. A number of studies showed that there exists a strong association between living condition and health related traits like ARI, diarrohea, helminthiasis, anaemia and child mortality (Tecky and Shorter, 1984; Timaeus and Hill, 1985; Mahadevan, 1983; Gunatilleke, 1991; Surjadi, 1993; Songsore and McGranahan, 1993; Bradely et al., 1992). In the present study too, it has been found that the reported cases of morbidity (mainly ARI and stomach disorders) are frequent in both the study groups. However, the frequencies of reporting these disorders are higher in the Muslim than in the Hindu, except for acidity and breathlessness. About the present study

groups, Ray et al. (1997) reported high prevalence of intestinal parasitic infestations in both the groups, and higher frequency of Ascaris infestation in the Muslim than in the Hindu; anaemia is more frequent in the Muslim than in the Hindu (Ray et al., 1998b); the infant and child mortality is also very higher in the Muslim than in the Hindu (Ray et al., 1998a).

Thus, the present study conforms to the other studies in demonstrating that poor living condition is associated with health related traits. Moreover, higher morbidity and child mortality in the Muslim are associated with the worse living condition when compared to the Hindu.

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REFERENCES

Bapat, M. and N.Crook. 1984. "The Environment, Health and Nutrition. An Analysis of Interrelationships from a Case Study of Hutment Settlements in the City of Poona," *Habitat International*, 8: 12. (Cited by Bradely et al. 1992).

Bradely, D., C. Stephens, T. Harpham and S. Cairncross. 1992. *A Review of Environmental Health Impacts in Developing Cities*. Washington D.C.: The World Bank.

Chen, B.H. et al. 1990. "Indoor Air Pollution in Developing Countries," *WHO Statistics Quaterly*, 43: 127-138. (Cited by Sujadi et al., 1994).

Crompton, D.W.T. and L. Savioli. 1993. "Intestinal Parasitic Infections and Urbanization," *Bulletin of the World Health Organisation*, 71 (1): 1-7.

Ghosh, B. 1991. "Slums in India," (pp. 287-385) in B. Ghosh (ed.), *Health Implication of Public Policy: Case Studies, Modules and Methodologies*. Bangalore: Indian Institute of Management.

Guha, U. 1958. *A Sample Survey of the Socioeconomic Conditions of Sahebbagan Bustee, Rajabazar*. Calcutta: Anthropological Survey of India.

Gunatilleke, N. 1991. "Urban Poor: Case of Sri Lanka," (pp. 327-340) in B. Ghosh (ed.), *Health Implication of Public Policy: Case Studies, Modules and Methodologies*. Bangalore: Indian Institute of Management.

Lee-Smith, D. and C.H. Trujillo. 1992. "The Struggle to Legitimise Subsistence: Women and Sustainable Development," *Environment and Urbanization*, 4 (1), *April*. (Cited by Satterthwaite et al. 1995).

Mahadevan, K. 1983. *Rethinking on Policy and Interventions to Control Infant and Childhood Mortality in Developing Countries*. Seminar on Social and Health Policy and Mortality Prospects. Paris: INED and IUSSP. (Mimeo).

Marshall, C.B. 1966. *Slums and Community Development*. New York: Free Press.

Moser, C.O.N. and L. Peake. 1987. *Women Human Settlements and Housing*. London: Tavistock Publication.

Ray, S. 1998a. "Family Planning Practices, Fertility and Mortality in Two Social Groups Inhabiting a Squatter Settlement in Calcutta," *Social Biology and Human Affairs*, 63 (2): 12-23.

Ray, S., S. Basak and P.K. Mitra. 1997. "Prevalence of Intestinal Parasitic Infestations Among Two Squatter Settlement Populations of Calcutta," *Journal of Human Ecology*, 8 (6): 463-466.

Ray, S., S. Basak, P.K. Mitra, and P. Bharati. 1998. "Health Profile of Two Social Groups Living in a Squatter Settlement in Calcutta," *Collegium Antropologicum*, 22 (1): 247-257.

Satterthwaite, D. 1993. "The Impact of Health of Urban Environment," *Environment and Urbanization*, 5 (2): 87-111.

Satterthwaite, D., R. Hart, C. Levy, D. Mitlin, D. Ross, J. Smit and C. Stephens. 1995. *An Environment for Children. Understanding and Acting on Environmental Hazards that Threatens Infants and Children and Their Parents*. London: IIED.

Sen, S.N. 1970. "Slums and Bustees in Calcutta," in A.R. Desai and D.S. Pillai (eds.), *Slums and Urbanization*. Bombay: Popular Prakashan.

Songsore, J. and G. McGranahan. 1993. "Environment Wealth and Health: Towards an Analysis of Intra-Urban Differential. Within the Greater Accra Metropolitan Area, Ghana," *Environment and Urbanization*, 5 (2): 10-34.

Stephens, B., J.P. Mason and R.B. Isley. 1985. " Health and Low Cost Housing," *World Health Forum*, 6 (1): 59-62.

Surjadi, C. 1993. "Respiratory Diseases of Mothers and Children and Environmental Factors Among Households in Jakarta," *Environment and Urbanization*, 5 (3): 78-86.

Surjadi, C., L. Padmasutra, D. Wahuyuningsih, G. McGranahan and M. Kjellen. 1994. *Household Environmental Problems in Jakarta*. Stockholm: Stockholm Environmental Institute.

Tecky, B. and F.C. Shorter. 1984. "Determinants of Child Mortality: A Study of Squatter settlements in Jordan," (pp. 257-279) in W.H. Mosely and L.C. Chen (eds.), *Child Survival Strategies and Research*. Population And Development Review, Vol. 10 (a supplement). New York: The Population Council.

Tewari, V.K. 1991. "Healthy Housing: Urban India," (pp.256-286) in B. Ghosh (ed.), *Health Implications of Public Policy: Case Studies, Modules Methodologies*. Bangalore: Indian Institute of Management.

Timaeus, I. and A. Hill. 1985. *Housing, Sanitation and Child Mortality in the Cukurova Metropolitan Region: Results from a Pilot Household Survey*. London: Centre for Population Studies, London School of Hygiene and Tropical Medicine.

World Health Organisation. 1992. *Our Planet , Our Health. Report of the Commission on Health and Environment*. Geneva: World Health Organisation.