



Prevalence of skin infection among street children in Kolkata, West Bengal, India

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ABSTRACT

Street children are considered to be a high risk group for infectious diseases especially skin infection. The aim of this study was to investigate the skin health status of children aged from 3 to 18 years living in Kolkata metropolitan city and assessment of their hygiene practices. A cross sectional study was conducted on 540 street children aged from 3 to 18 years in different 10 zones in Kolkata. Skin infection prevalence was 56.66%. Health consciousness and food intake had great influence on their skin health status. ($p=0.000$). Skin health status of the examined street children was quite poor. Reasons for such findings can be lack of awareness regarding infection problems, financial constraints to afford hygiene aids, timely health check up, substance abuse and also lack of nutrient like vitamin and protein.

KEYWORDS : Street Children, skin infection, substance abuse, health consciousness

INTRODUCTION:

Street children are a term for children experiencing homelessness who live on the streets of a city, town, or village. Homeless youth are often called street kids and street youth; the definition of street children is contested, but many practitioners and policymakers use UNICEF's concept of boys and girls, aged under eighteen years, for whom "the street" (including unoccupied dwellings and wasteland) has become home and/or their source of livelihood, and who are inadequately protected or supervised.^[1] The street children in India choose to leave their families and homes for three strategic reasons - urban poverty, families, and urbanization. They are result of increasing poverty & unemployment, increased migration of families, broken families, neglect, abuse and violence, armed conflicts, natural and manmade disaster, decreasing resources in rural areas and the attraction of cities.^[2] Not only they are exposed and susceptible to disease, they are also unlikely to be vaccinated or receive medical treatment.^[3] Street children in India face additional vulnerability because of their lack of access to nutritious food, sanitation, and medical care. Street children lack of access to nutritious food, because many are dependent on leftovers from small restaurants or hotels, food stalls, or garbage bins. It is observed by Thapa K, Ghatane S, Rimal SP in their survey on health problems among the street children of Dharan municipality that most of them suffered from infection problem, mainly skin infection.^[4] In a number of studies prevalence has to be higher among boys. A survey on health status of street children in selected wards of urban area, it was found that prevalence of infection was 27.00%.^[5] Hence the present study aims to assess the health status and health consciousness of street children in Kolkata city, West Bengal.

MATERIALS & METHODS:

A total of 540 street children aged up to 18 years participated in this cross sectional and descriptive study. These were drawn from different places in Kolkata city. According to the Assembly (Vidhansabha) constituencies, 10 zones were chosen for the survey on the street children. The zones were - Kolkata port, Bhabanipur, Rashbehari, Ballygunge, Chowringhee, Entally, Belegghata, Jorasanko, Shyampukur and Maniktala. The samples taken from the zones were 44, 53, 60, 57, 56, 58, 53, 61, 52 & 46 respectively. The respondents (street children) were visited for the data collection through observation, interviews and measurements. The survey was done in 6 months.

In a pilot study on 27 street children of Kolkata, 20 were found malnourished. So, proportion of malnourished children = $20/27 \times 100\% = 74\%$ among street children was considered. $P=0.74$ and at 95% confidence level and 5% allowable relative error, sample size = $n = (1.96)^2 \times p(1-p)/L^2 = 540$. A sample of 540 street children was selected randomly. Of these 331 (61.29%) were boys and 209 (38.70%) girls. The sample represented the west, east, north, south and central parts of Kolkata city.

Clearance from University Bio ethics committee for Animal and Human Research studies, Calcutta University was obtained. Consent was taken from the children or parents before survey.

A self administered, predesigned and pretested semi structured anonymous questionnaire was used for collecting information. Suitable time schedule was fixed for the survey without hampering their daily working schedule. Information regarding the demographic factors, personal habits and hygiene practices was obtained from 10-15 study subjects in a day by interviews method using the questionnaire in a private area away from other participants. Guardians of the children aged 3-10 years were allowed with them.

The primary data included socio-economic status, food consumption, and nutritional aspects involving anthropometric data of street children and blood hemoglobin level, blood glucose level, and health status (oral health status, diarrhea, skin infection). On the day of the survey participants were briefed about the objective of the study as well as the questionnaire. Their willingness to participate in the study was obtained and questionnaires were filled by obtaining information from them of their guardian within specific time period.

Blood sample was collected from to examine their ESR value.

The data obtained from questionnaires and already edited on field was entered into the computerized file by using the software of Microsoft excels. Categorization and tabulation were made for the health status of children. The resultant mean, standard deviation, frequency and proportion were presented in the form of tables. Means, standard deviation, frequency and proportion as well as tabulation were calculated with a combination of software

applications: Microsoft Excel and Statistical Analysis System (SPSS).

RESULTS:

Out of the 540 street children 331 (61.29%) were boys and 209 (38.70%) were girls in the present survey. [Table – 1]. The number of participants belonged to the age group of 6 to 13 years 285 (52.77%) was more than 3- up to 6 years 148 (27.40%) and 13 – up to 18 years 107 (19.81%). [Table – 2] Majorities of their mothers were illiterate 313 (57.96 %) and the rest 227 (42.04 %) studied up to primary. [Table – 3] Most 456 (84.44 %) of the street children belonged to lower socio-economic status (using Prasad's socio economic status classification for 2015).⁶¹ [Table – 4] Majority of the children 338 (62.59%) did not have sufficient breast milk (exclusive breast feeding up to 6 months from delivery) from mother during their childhood. [Table – 5] It was also observed that health consciousness had a great influence on the health status of the street children. Unhealthy habits like irregular brushing, improper mouth washing, substance abuse, irregular bathing, wearing dirty clothes and skipping meal were certainly the main causes of poor nutritional status of the street children. Among 540 street children only 128 (23.70%) showed health consciousness in the survey. [Table–6]

According to the present study, 189 (35%) indulged in substance abuse at some time in their life. The most common substance abused was tobacco in the form of cigarettes or *bidis*, *gutkha* and an inhalant substance, 'whitener'– a white fluid containing organic solvents, used to erase errors in hand written, printed papers. Multiple responses to the type of substance abuse were observed. It was also observed that health consciousness had a great influence on the health status of the street children. [Table – 7]

**TABLE -1
AGEWISE DISTRIBUTION OF SAMPLE:**

AGE GROUP IN YEARS	FREQUENCY	PERCENTAGE
3- UP TO 6	148	27.41%
6- UP TO 13	285	52.78%
13- UP TO 18	107	19.81%
TOTAL	540	100.00%

**TABLE -2
GENDERWISE DISTRIBUTION OF SAMPLE:**

GENDER	FREQUENCY	PERCENTAGE
BOYS	331	61.30%
GIRLS	209	38.70%
TOTAL	540	100.00%

**TABLE-3
MATERNAL LITERACY WISE DISTRIBUTION OF SAMPLE:**

MATERNAL LITERACY LEVEL	FREQUENCY	PERCENTAGE
ILLITERATE	313	57.96%
LITERATE	227	42.04%
TOTAL	540	100.00%

**TABLE-4
PER CAPITA INCOME WISE DISTRIBUTION OF SAMPLE:**

PER CAPITA INCOME	FREQUENCY	PERCENTAGE
<942	456	84.44%
>942	84	15.56%
TOTAL	540	100.00%

**TABLE-5
BREAST FEEDING DURATION WISE DISTRIBUTION OF SAMPLE:**

DURATION OF BREAST FEEDING	FREQUENCY	PERCENTAGE
<6 MONTHS	338	62.59%
>6 MONTHS	202	37.41%
TOTAL	540	100.00%

**TABLE-6
HEALTH CONSCIOUSNESS WISE DISTRIBUTION OF SAMPLE:**

HEALTH CONSCIOUSNESS	FREQUENCY	PERCENTAGE
YES	128	23.70%
NO	412	76.30%
TOTAL	540	100.00%

**TABLE-7
SUBSTANCE ABUSE WISE DISTRIBUTION OF SAMPLE:**

SUBSTANCE ABUSE	FREQUENCY	PERCENTAGE
YES	189	35.00%
NO	351	65.00%
TOTAL	540	100.00%

TABLE-8: ZONAL DISTRIBUTION OF STREET CHILDREN ACCORDING TO HEALTH CONSCIOUSNESS:

ZONE	CONSCIOUS	%	UNCONSCIOUS	%
KOLKATA PORT	11	25	33	75
BHABANIPUR	14	26.42	39	73.58
RASHBEHARI	18	30	42	70
BALLYGUNGE	9	15.79	48	84.21
CHOWRANGHEE	12	21.43	44	78.57
ENTALLY	13	22.42	45	77.58
BELEGHATA	14	26.42	39	73.58
JORASANKO	10	16.4	51	83.6
SHYAMPUKUR	14	26.92	38	73.08
MANIKTALA	13	28.26	33	71.74

TABLE-9 - PREVALENCE OF SKIN PROBLEM AMONG THE STREET CHILDREN

INDEPENDENT VARIABLE	TYPE	YES	NO	TOTAL	chi-square	p VALUE
AGE (YEAR)	3- UP TO 6	75 50.68%	73 49.32%	148 27.41%	11.9	0.003
	6- UP TO 13	181 63.51%	104 36.49%	285 52.78%		
	13- UP TO 18	50 46.73%	57 53.27%	107 19.81%		
GENDER	BOY	178 53.78%	153 46.22%	331 61.30%	2.61	0.106
	GIRL	128 61.24%	81 38.76%	209 38.70%		
MOTHER'S QUALIFICATION	ILLITERATE	242 77.32%	71 22.68%	313 57.96%	127.3	<0.0001
	LITERATE	64 28.19%	163 71.81%	227 42.04%		
MONTHLY PER CAPITA INCOME	≤ Rs 866	279 61.18%	177 38.82%	456 84.44%	23.19	<0.0001
	> Rs 866	27 32.14%	57 67.86%	84 15.56%		
BREAST FEEDING DURATION	≥6 MONTHS	132 65.35%	70 34.65%	202 37.41%	9.34	0.002
	<6 MONTHS	174 51.48%	164 48.52%	338 62.59%		
HEALTH CONSCIOUSNESS	YES	47 36.72%	81 63.28%	128 23.70%	26.13	<0.0001
	NO	259 62.86%	153 37.14%	412 76.30%		
SUBSTANCE ABUSE	YES	72 38.10%	117 61.90%	189 35.00%	39.69	<0.0001
	NO	234 66.67%	117 33.33%	351 65.00%		

In the present study 56.66% children suffered from skin problems including infection due to unhealthy habits like irregular bathing and wearing dirty clothes. The children who were not health conscious suffered more from skin disease than others. The difference was highly significant (p < .0001) [Table –9]

TABLE:10- PREVALENCE OF HIGH ESR AMONG THE STREET CHILDREN

INDEPENDENT VARIABLE	TYPE	YES	NO	TOTAL	chi-square	p VALUE
AGE (YEAR)	3- UP TO 6	77.27 %	22.73 %	27.1 %	2.37	0.3057
	6- UP TO 13	86.05 %	13.95 %	53.0 %		
	13- UP TO 18	68.75 %	31.25 %	19.7 %		
GENDER	BOY	82.00 %	18.00 %	61.7 %	0.05	0.032
	GIRL	77.42 %	22.58 %	38.2 %		
MOTHER'S QUALIFICATION	ILLITERATE	97.87 %	2.13 %	58.0 %	19.38	0.000
	LITERATE	55.88 %	44.12 %	41.9 %		
MONTHLY PER CAPITA INCOME	≤ Rs 866	83.82 %	16.18 %	83.9 %	2.16	0.532
	> Rs 866	61.54 %	38.46 %	16.0 %		
BREAST FEEDING DURATION	≥6 MONTHS	51.61 %	48.39 %	38.2 %	13.13	0.000
	<6 MONTHS	98.00 %	2.00 %	61.7 %		
HEALTH CONSCIOUSNESS	YES	52.63 %	47.37 %	23.4 %	9.77	0.000
	NO	88.71 %	11.29 %	76.5 %		
SUBSTANCE ABUSE	YES	75.00 %	25.00 %	34.5 %	0.32	0.004
	NO	83.02 %	16.98 %	65.4 %		

Blood test for ESR was done on 81 (15%)^[10] street children selected randomly from 10 different zones. 80.24% (n=65) were found to have higher ESR level than that of normal range.

DISCUSSION: Out of 540 study subjects, boys were 62.71% and girls were 37.29%. This is accordance to the study conducted by FK Kahabuka et al (2006)^[3] reported 68% boys and 32% girls and in contrast to the study conducted by Elsa K Delgado et al (2009)^[7] and Pisarn et al (2006)^[8] who observed 48.6% boys and 53.3% girls, 42.9% boys and 57.1% girls respectively.

In the present study 540 children belong to the age group of 3 to 18 years. Mean age of study subject was 11.125 year. Majority of the children belong to 3-10 years (59.38%) than 11-18 years (40.63%). This is in accordance to study conducted by R Contreras- Bulness et al (2008)^[9] reported that 32(10.3%) belong to 15 years of age. Many studies have determined that street children are most often ages between 10-14 years.

It is observed by Thapa K,Ghatane S, Rimal SP in their survey on health problems among the street children of Dharan municipality that most of them suffered from infection problem, mainly skin infection (17%).^[4] There were observed 56.66 % skin infection in the conducted study which is higher than the findings of various studies in various time frames in various countries. According to a research report^[5], the greater bulk of street children were found in infection gainers due to lacked access to safe drinking water, scanty nutritious foods consumption, low nutritional knowledge, lack of hygiene practices and shelter facilities. In our study protein deficiency was found 76.30% were not health conscious.

CONCLUSION:

Life on the street continues to have an adverse effect on the health of children living and working on the street, particularly young

children below 13 years. Street children have a higher risk of experiencing health problems because their young age increases their vulnerability. Lack of protein and calorie intake causes malnutrition among them. Healthy habits like regular brushing, proper mouth washing, no substance abuse, regular bathing, wearing clean clothes and not skipping any meal were encouraged. New mothers were advised to give exclusive breast milk to their babies. At the end of the survey, idea about low cost nutritious food and minimum hygiene practice was given among the street children and their mothers to combat malnutrition. Skin health policies and preventive services including skin health promotion programmes which aim to give information about skin infection and to make positive changes in behavioral and environmental factors should be developed.

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