

Study and compare Medical problems of ‘on the street’ and ‘of the street’ children

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Abstract: Introduction; A more serious and vulnerable group of the urban poor that is growing rapidly in big cities is that of street children and working children, with a home or without a home. In comparison to the urban poor, the phenomenon of street children is a recent one. The present study is an attempt to determine the physical health problem of street children registered at “Apanga Va Niradhar Bahuddeshiya Kalyankari Sanstha”, Nagpur, Maharashtra, India. Methods: 461 children were included in the study of which 343 were ‘on the street’ and 118 were ‘of the street’ children. Detailed clinical examination was carried out at centres of NGO including general and systemic examinations. Height and weight were recorded as per standard procedure and compared with NCHS standard 17. The haemoglobin estimation was performed on 442 street children. Stool samples of 298 street children were sent for microscopic examination. Treatment and referral – Treatment was given whenever required and necessary referrals to Government Hospital, Nagpur were made for further expert opinion and management. Results: The percentage change of median height and weight of boys as well as girls in ‘of the street’ category, from NCHS standard median height and weight was found to be more in all the ages than ‘on the street’ category. Major morbidities found to be in street children were anaemia. 192 (43.4%), wax in ear 175 (38%), dental carries 156 (33.8%), fungal infection 55 (11.9%), URI 49 (10.6%), worm infestation 28 (9.4%) and injury 36 (7.8%). The mean morbidity was found to be 1.7 per street children. Conclusions: The proportion of adoption of hygienic practices among ‘on the street’ children were significantly higher than ‘of the street’ children. Majority of street children 210 (45.6%) went to government hospital when become ill while 108 (23.4%) took treatment from medical store.

Keywords: Street children, health problem, morbidity, hygienec practice.

I. INTRODUCTION

In the world today, the process of urbanization has become a phenomenon, which is inevitable. A large number of people migrate from the rural areas and settle down in slums, jhuggi, jopad patties, or squat on wherever there is vacant land available. Some of them even cannot get this and lead their life on city streets, pavements, in public places, parks, etc., perhaps looking daily for a place to spend night. A more serious and vulnerable group of the urban poor that is growing rapidly in big cities is that of street children and working children, with a home or without a home. In comparison to the urban poor, the phenomenon of street children is a recent one. Street children are referred by varied names all over the world. In the developed north, they are labeled ‘homeless youth’, ‘runways’ and or even ‘throwaways’, ‘gaminismos’. In developing countries, they are called by different names in different countries. Official language tends to be softer and refer to street children ‘children in an irregular situation’ or ‘in difficult circumstances’⁵. The definition of street children is evolving as agencies working with children continue to study the phenomenon and its complexity. The United Nation defines a street child as ‘any girl or boy.....for whom the street (in the widest sense of the word, including unoccupied dwelling, waste land etc.) has become his or her abode and / or source of livelihood and who is inadequately protected,

supervised or directed by responsible adults¹³. For children on the street, the question of survival is of paramount importance. Their days are spent in ensuring survival and the activities to this, range from begging, collection of edibles from garbage, washing cars, pushing hand carts, shining of shoes, etc. Rag picking constitutes a major (almost 90%) occupation for street children. It is surely the most dehumanizing occupation where the nature of the work and work environment are unhygienic, dangerous, demanding and destructive of self-worth¹⁴. One of the most pressing health problem facing street children is substance abuse, which offers an escape from the harsh, daily realities of family break-up, poverty, hunger, violence and homelessness. Other conditions like allergies, ear, nose and throat problems, dermatological problems, gastro-intestinal problem, infectious diseases, trauma and psychosocial problem^{12,7}, oral health problem such as dental caries and gingivitis are common. All these condition are common because children are exposed to environmental hazards such as cold, dust and unhygienic condition. The present study is an attempt to determine the physical health problem of street children registered at “Apanga Va Niradhar Bahuddeshiya Kalyankari Sanstha”, Nagpur, Maharashtra, India.

II. MATERIAL AND METHODS

The study was carried out at Apang Va Niradhar Bahuddeshiya Kalyankari Sanstha, Nagpur. This Non-Governmental Organisation (NGO) works for street children in Nagpur city through “An integrated programme for street children” (recognized by Ministry of Social Justice and Empowerment, Government of India). The organization has two main residential (night shelters) units with ten contact centres (Day care centres) situated in different parts of Nagpur. Day care centres (Contact centres) offers counseling and guidance, provided non formal education, reintegration of children with their families and placements of children in foster care homes / hostels, enrolment of these children in school, provides facilities for training in meaningful vocations, trades and skill to earning money and provides health care facilities and nutritional supplements. 461 children were included in the study of which 343 were ‘on the street’ and 118 were ‘of the street’ children.

Methodology - Rapport was developed with the street children. From each street child, by interview technique, first general demographic information like age, sex, education etc. were obtained and these were confirmed from register of NGO. Street children were enquired regarding their reasons for present status, contact with parents, substance abuse, sexual activities (female street educator’s help was taken in case of female street children) etc. detailed clinical examination was carried out at centres of NGO including general and systemic examinations. Height and weight were recorded as per standard procedure and compared with NCHS standard¹⁷. The haemoglobin estimation was performed on 442 street children as 19 children were refused for investigation and 10 samples of blood were haemolysed. The samples, which were found to be reactive for VDRL, were subjected for ELISA for HIV. Stool samples were received and preserved in 10% formaldehyde and microscopic examination was done by wet slide preparation on stool samples of 298 street children. Treatment and referral – Treatment was given whenever required and necessary referrals to Government Hospital, Nagpur were made for further expert opinion and management.

III. RESULT

The present descriptive cross-sectional study was carried out at Apang Va Niradhar Bahuddeshiya Kalyankari Sanstha, Nagpur, to assess and compare the medical problems, social problem and correlates, prevalence and pattern of substance abuse among street children. 461 street children were included in the study. Majority of street children, 307 (66.6%) were from age group 9 -14years, in which ‘on the street’ children were 230 (67%) and ‘of the street’ were 77 (65.4%). The mean age of street children found to be 11.84 (SD \pm 2.86). The male to female ratio in general was found to be 1.9: 1. In ‘of the street’ children it was more (3.5:1) than ‘on the street’ children (1.6:1). When the height and weight of street children were measured, it was observed that the percentage change of median height and weight of boys as well as girls in ‘of the street’ category, from NCHS standard median height and weight was found to be more in all the ages than ‘on the street’ category. The proportion of adoption of hygienic practices among ‘on the street’ children were significantly higher than ‘of the street’ children Major morbidities found to be in street children were anaemia. 192 (43.4%) wax in ear, 175 (38%), dental carries 156 (33.8%), fungal infection 55 (11.9%), URI 49 (10.6%), worm infestation 28 (9.4%) and injury 36 (7.8%). The mean morbidity was found to be 1.7 per street children. VDRL seropositivity was found to be 1.6% in which, for ‘on the street’ it was 1.5% and for ‘of the street’ it was 1.8%. All of them had heterosexual behavior.

Majority of street children 210 (45.6%) went to government hospital when become ill while 108 (23.4%) took treatment from medical store.

Observation:

The data were analysed using mean and standard deviation. The statistical test like 'Z' test and Chi-square test were used for comparing means and proportion of 'on the street' and 'of the street' children

Table No.1: Age wise distribution of study subjects

Age (years)	Categories of street children				Total	
	On the street		Of the street		No.	%
	No.	%	No.	%		
6-8	58	17	11	9.3	69	15
9-11	90	26.2	34	29	124	27
12-14	140	40.8	43	36.4	183	39.6
15-17	53	15.4	26	22	79	17.1
Above 17	02	06	4	3.3	6	1.3
Total	343	100	118	100	461	100

Table No.2: Sexwise distribution of study subject

Age (years)	Categories of street children				Total	
	On the street		Of the street		No.	%
	No.	%	No.	%		
Male	211	61.6	92	78	303	65.8
Female	132	38.4	26	22	158	34.2
Total	343	100	118	100	461	100
M:F	1.6:1		3.5:1		1.9:1	

Table No.3: Hygiene practices of study subjects

Hygiene practices	Categories of street children				Total (n=461)		significance
	On the street (n=343)		Of the street (n=118)		No.	%	
	No.	%	No.	%			
Teeth cleaning	124	36.1	14	11.9	138	29.9	HS
Daily bathing	121	35.3	21	17.8	142	30.8	HS
Nail trimming	85	24.8	11	9.3	96	20.8	HS
Clean clothes	90	26.2	11	9.3	101	21.9	HS

Table No.4: Median height of male study subjects compared with NCHS standard

Age (years)	Boys(n=303)				NCHS Std Med	Percentage change from NCHS	
	On the street (n=211)		Of the street (n=93)			On the street	Of the street
	n	median	n	median			
6	6	105.1	3	99.8	116.1	9.5	14.0
7	8	112.0	3	110.2	121.7	8.0	9.4
8	12	115.7	8	113.9	127.0	8.9	10.3
9	16	119.7	4	119.7	132.2	9.3	9.5
10	27	123.8	11	119.8	137.5	10.0	12.9
11	18	132.4	8	128.5	143.3	7.6	10.3
12	37	136.7	13	133.8	149.7	8.7	10.6
13	31	142.7	15	135.7	156.5	8.8	13.3
14	18	143.2	7	143.2	163.1	10.4	12.2
15	26	153.0	9	148.8	169.0	9.5	11.9
16	8	157.0	4	153.9	173.5	9.5	11.3
17	4	157.9	3	152.7	176.2	10.4	13.3
18	0	-	4	161.6	176.8	-	8.6

Table No.5: Median height of female study subjects compared with NCHS standard

Age (years)	Boys(n=158)				NCHS Std Med	Percentage change from NCHS	
	On the street (n=211)		Of the street (n=93)			On the street	Of the street
	n	median	n	median			
6	2	104.2	0	-	114.6	8.6	-
7	7	106.4	2	105.9	120.6	11.8	12.2
8	13	105.8	5	-	126.4	8.4	12.7
9	5	119.4	1	122.2	132.2	9.7	-
10	12	127.0	5	126.2	138.4	8.2	11.6
11	14	130.2	3	126.6	144.8	10.1	12.6
12	19	136.7	4	132.0	151.5	9.8	12.9
13	18	141.0	3	137.2	157.1	10.2	12.7
14	16	144.6	2	141.9	160.4	9.9	11.5
15	6	146.2	0	-	161.8	9.6	-
16	8	148.6	1	-	162.4	8.5	-
17	10	149.4	0	-	163.1	8.4	-
18	2	150.0	0	-	163.7	8.4	-

Table No.6: Median weight of male study subjects compared with NCHS standard

Age (years)	Boys(n=303)				NCHS Std Med	Percentage change from NCHS	
	On the street (n=211)		Of the street (n=93)			On the street	Of the street
	n	median	n	median			
6	6	16.0	3	14.2	20.7	22.7	31.4
7	8	16.2	3	12.3	22.9	29.3	46.2
8	12	16.4	8	16.5	25.3	35.2	34.8
9	16	20.4	4	17.4	28.1	27.4	38.1
10	27	21.3	11	18.5	31.4	32.2	41.1
11	18	23.2	8	22.0	35.3	34.2	37.7
12	37	27.5	13	23.8	39.8	30.9	40.2
13	31	31.4	15	29.7	45.0	30.2	34.0
14	18	32.3	7	28.3	50.8	36.4	44.3
15	26	37.9	9	33.3	56.7	33.2	40.4
16	8	40.8	4	36.2	62.1	34.3	41.7
17	4	44.7	3	38.4	66.3	32.6	42.1
18	0	-	4	46.1	68.9	-	33.1

Table No.7: Median weight of female study subjects compared with NCHS standard

Age (years)	Boys(n=303)				NCHS Std Med	Percentage change from NCHS	
	On the street (n=211)		Of the street (n=92)			On the street	Of the street
	n	median	n	median			
6	2	18.9	0	-	19.5	28.4	-
7	7	17.4	2	15.7	21.8	20.2	28.0
8	13	18.6	5	17.2	24.8	25.0	30.6
9	5	20.1	1	-	28.5	29.5	-
10	12	23.7	5	22.4	31.5	27.3	31.2
11	14	25.8	3	23.3	37.0	30.3	37.0
12	19	27.8	4	27.4	41.5	33.0	38.8
13	18	30.5	3	26.8	46.2	33.8	41.9
14	16	33.1	2	29.2	50.3	34.2	41.9
15	6	36.2	0	-	53.7	32.6	-
16	8	39.8	1	-	55.9	28.8	-
17	10	39.5	0	-	56.7	30.3	-
18	2	41.3	0	-	56.6	27.0	-

Table No.8: Morbidity presents in study subjects

ICD10 20	morbidity	Categories of street children				Total (n=461)		
		On the street (n=343)		Of the street (n=118)		No.	%	
		No.	%	No.	%			
K02	Dental carries	98	28.6	58	49.2	156	33.8	HS
E50.1	Bitot's spot	6	1.73	2	1.7	8	1.7	NS
H61.2	Wax in Ear	126	6.7	49	41.5	175	38.0	NS
H66.3	CSOM	8	2.3	5	4.2	13	2.8	NS
B49	Fungal Infection	32	9.3	23	19.5	55	11.9	S
L40.0	Scalp psoriasis	0	0.0	1	0.8	1	0.2	-
B86	Scabies	15	4.4	8	6.8	23	5.0	NS
T14	Injury	21	6.1	15	12.7	36	7.8	S
L02.2	Multiple Boils	18	5.0	4	3.4	21	4.6	NS
J00-06	URI	39	11.4	10	8.5	49	10.6	NS
K13	Angular stomatitis	9	2.6	13	11.0	22	4.8	HS
R50.0	PUO	10	2.9	3	2.5	13	2.8	NS
K62.3	Rectal Prolapse	0	0.0	1	0.8	1	0.2	-
D64.9	Anemia's*	122	36.9	70	63.1	192	42.4	HS
A06-07	Worm Infection**	21	8.6	7	13.0	28	9.4	NS

*On the street (m) =331 Of the street (n) =111 Total (n) = 442

**On the street (n) =244 Of the street (n) =54 NS (n) = 298

S- Significant HS- Highly Significant NS- Not Significant

CSOM- Chronic Supportive Otitis Media PUO- Pyrexia of Unknown Origin URI- Upper Respiratory Tract infection

Table No.9: Number of morbid condition present in study subject

Number of Morbid condition	Categories of street children				Total	
	On the street		Of the street		No.	%
	No.	%	No.	%		
0	101	29.4	11	9.2	112	24.3
1	76	22.2	27	22.9	103	22.3
2	89	25.9	35	29.7	124	26.9
3	44	12.8	18	15.3	62	13.4
4	25	7.3	18	15.3	43	9.3
5	6	1.7	7	5.9	13	2.8
6	2	0.6	2	1.7	4	0.9
Total	343	100.0	118	100.0	461	100.0

Mean Morbidity- on the street 1.5

No. Morbid Vs Morbid condition

of the street-2.2

$X^2 = 18.08$, $df = 1$, $P < 0.05$, significant

Table No.10: Distribution of study subjects according to place of treatment taken when become ill

Place	Categories of street children				Total	
	On the street		Of the street		No.	%
	No.	%	No.	%		
Medical store	70	20.4	38	32.2	108	23.4
Private practitioner	31	9.0	8	6.8	39	8.5
Government hospital	169	53.4	27	22.9	210	45.6
From the NGO	59	17.2	45	38.1	104	22.5
Total	343	100.0	118	100.0	461	100.0

IV. DISCUSSION

461 children were included in the study of which 343 were 'on the street' and 118 were 'of the street' children. It was observed that the majority i.e. 307 (66.6%) of street children were from age group 9 to 14 years while 69 (15%) were in the age group 6 to 8 years, only 6 (1.3%) subjects were above 17 years of age. Mean age was 11.84 (SD \pm 2.86). Majority i.e. 230 (67%) 'on the street' and 77 (65.4%) 'of the street' children were from the age group 9 to 14 years. Mean age of 'on the street' children was 11.89 (SD \pm 2.75) and 'of the street' children was 11.72 (SD \pm 2.89) (table 1). Study done by **D'Lima H et al (1992)**⁶ on 2169 street children at Bombay reported that 39.9% were from the age group 11 to 15 years followed by 26.8% from 16 to 18 years. Whereas **Ghosh A (1992)**⁸ at Bombay and **Rao BVR et al (1992)**¹⁰ at Hyderabad reported that there were more children (i.e. 57.5% and 41.8% respectively) in age group of 6 to 10 years. According to sex it was observed that the majority i.e. 303 (65.8%) were male and 158 (34.2%) were female study subjects. Male to female ratio 1.9: 1. The proportion of male 'of the street' children 92 (78%) were more than the proportion of male 'on the street' children 211 (61.6%), which was found to be statistically significant. Thus, the male to female ratio was 1.6:1 in 'on the street' children and 3.5:1 in the 'of the street' children (Table 2). Related to hygiene practices, only 42 (30.8%) street children had daily bath, 138 (29.9%) brushed daily, 101 (21.9%) were having their clothes clean and 96 (20.8%) street children had their nail trimmed while the rest were living with unhygienic practices. Further, the proportion of adoption of hygiene practices among 'on the street' children like daily teeth cleaning 124 (36.1%), daily bathing 121 (35.3%), nail trimming 85 (24.8%) and clothes clean 90 (26.2%) were found to be significantly higher than the adoption of hygiene practices among 'of the street' children such as daily teeth cleaning 14 (11.3%), daily bathing 21 (17.8%), nail trimming 11 (9.3%) and clothes clean 11 (9.3%) (Table 3). **Padwal P (2002)**² reported that personal hygiene habits were uncommon in substance users as compared to non-users. When the heights of boys were measured, median height of 'on the street' children was found to be vary between 7.6% to 10.4% and 'of the street' children was between 8.6% to 14.0% less from the expected median height of these children by NCHS standard (Table 4). In girls, median height of 'on the street' children was found to be vary between 8.2% to 11.8% and 'of the street' children was between 11.5% to 12.9% (Table 5). Regarding the weight of male, median weight of 'on the street' children was found to be vary between 22.7% to 36.4% and 'of the street' children was vary between 31.4% to 46.2% (table 6). In female, median weight of 'on the street' children was found to be vary between 20.2% to 34.2% and 'of the street' children was found between 28.0% to 41.9% less from the expected median weight of these children by NCHS standard (Table 7). It was further observed that both in male and female the percentage change of median height and weight from NCHS standard median height and weight in 'of the street' category found to be more than in 'on the street'. In the present study the most prevalent morbid condition found in street children was anaemia 192 (43.4%) followed by wax in ear 175 (38%), dental caries 156 (33.8%), fungal infection 55 (11.9%), upper respiratory tract infection 49 (10.6%) and injury 36 (7.8%) and worm infestation in 28 (9.4%) out of 298 on which stool examination was performed. One scalp psoriasis and one rectal prolapse were also found in street children. Five street children were diagnosed as a case of sickle cell anaemia. Statistically the proportion of anaemia (Hb<12gm/dl)¹³, dental caries, fungal infection, injuries and angular stomatitis were found to be highly significant among children 'of the street' than children 'on the street'. And percentage of other condition like wax in ear 49 (41.5%), scabies 8 (6.8%), worm infestation 7 (13%) and CSOM 5 (4.2%) were also found to be more among children 'of the street'. While URI 39 (11.4%), Multiple Boils 17 (5%) and pyrexia of unknown origin 10 (2.9%) were found to be more in number among children 'on the street' (Table 8). **Arimpoor J (1992)**⁵ in Madras found that 30.8% of street children were suffering from diarrhea and dysentery, 14.3% from malaria, 13.7% from asthma and 7.7% from skin disease. **Padwal P (2002)**² at Don Bosco Shelter, Mumbai found that 48.3% of substance users had respiratory symptoms, which were more as compared to 24.4% in non-users. Also 40.8% of substance users had skin problems. Accidents and injuries were more common in substance users. **Bhanu P and Pagare D (2003)**¹ studied on 1010 street children, out of these 68.1% had some physical illness mainly skin 26%, respiratory 21% and gastrointestinal 12% and 16% with non-specific complaints. 31.9% of total OPD cases suffered only from psychological problems, 32 subjects had STD. More than 19% of children were unimmunized and 94 suffered from measles, mumps and chickenpox during their stay. Morbidity of street children i.e. 124 (26.9%) had two morbid conditions followed by one in 103 (22.3%), three in 62 (13.4%) and 60 (13%) street children had more than or equal to four morbid conditions. Average morbidity per street children was found to be 1.7 (Table 9). One, two or three morbid conditions per children of 'on the street' and 'of the street' was found to be almost similar while more than or equal to four morbid conditions among children of 'of the street' 27 (22.9%) were found to be more than children of 'on the street' 33 (9.6%). The average

morbidity per children 'on the street' was 1.5 and children 'of the street' was 2.2. Statistically the proportion of morbidity among 'of the street' children 106 (89.8%) was found to be significantly higher than children 'on the street' 241 (70.3%). In our study it was observed that 210 (45.6%) street children went to government hospital when ill followed by 108 (23.4%) took treatment from medical store, 104 (22.5%) from the NGO itself and only 39 (8.5%) went to private practitioner when become sick. 183 (53.4%) of 'on the street' children went to government hospital when sick while 45 (38.1%) and 38 (32.2%) of 'of the street' children took treatment from the NGO and medical store (Table 10). **Reddy N (1992)**¹¹ observed that most of the street children i.e. 76.17% used government hospital, 6.34% had access to private clinics. Similar findings were also reported by **D'Lima H et al (1992)**⁶, **Phillips WSK (1992)**⁹ and **Arimpoor J (1992)**⁵ whereas **Padwal P (2002)**² reported that only about 8% street children approach to government hospital when sick. **Rao BVR et al (1992)**¹⁰ and **Ghosh A (1992)**⁸ reported that 85-90% street children don't get any medical facilities when they were ill.

V. CONCLUSION

Major morbidity found in street children were anaemia, wax in ear, dental carries, fungal infection, URI, worm infestation and injury. Adoption of hygienec practices among 'on the street' children were found to be better than 'of the street' children. Regular health check-up, treatment and referral whenever required are necessary to deal with various health problems of street children. Health education should be imparted to all street children.

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