An Assessment of Health Status of Street Children in Tangail, Bangladesh

Md. Abdul Hakim[*], Md. Jalal Talukder

Department of Food Technology and Nutritional Science, Faculty of Life Science, Mawlana Bhashani Science and Technology University, Santosh, Tangail, Bangladesh

Email address:
info.hakim.bd@gmail.com (M. A. Hakim), jalal.info10mission@gmail.com (M. J. Talukder).

Abstract: The study was conducted in a regional city Tangail, which is located in the central part of Bangladesh and well connected with the capital city Dhaka. There were 10% gamines and 90% street boys selected for the study from the twelve different upazilas in Tangail applying the simple random sampling method. Results divulged to contribute 66.67% underweight and 33.33% normal weight street children. According to the study, 34.97% children were different works doers and also about 65% were absolute work abstainers. The mainstream (85.5%) children were the three times and another 14.5% were two times daily meal eaters. Most children (85.3%) washed their hand before taking meal, 57.5% taken bath daily and 59.8% of them were diseases sufferers in the last 3 months prior to conducting study.

Keywords: Health status, street children, malnutrition, Tangail district, Bangladesh

1. Introduction

The street children are the girls and boys coming to fight to adorn the streets for their habitual abode and livelihood drifted into a nomadic life [1]. Child is a young up to 18 years age according to the section 4 of in vogue Bangladeshi Child Act 2013. Street children is a term to denote the homeless children regarding to live on the streets of different cities and urban areas worldwide and the homeless youth are often termed as street kids and street youths. The definition of street children is contradictory, but most of the practitioners and policymakers adopt the UNICEF given concept of homeless, care free and unprotected boys and girls aged less than 18 years to dwell on the streets are the street children [2]. The street children are considered as a part of thrown away (forced to leave home) children in many developed nations who are more likely to come from single-parent homes [3], or due to the consequence of polygamy in different societies across the world. These fellow children are often subject to abuse, neglect, exploitation, or extreme cases, murder by clean-up squad hired by businessmen, criminal gang and very often the police to retain great business benefit [4]. They are often involving in different illegal activities such as drug dealing, crime, theft, swindling and gang activities on the spur of their deprivation on culture, moral, tradition, shelter, income, social networking, health, nutrition, hygiene cares and religious rights owing to living away from families since the childhood [5] and however, a greater bulk of them is legal life sustaining works doers such as parking car washing, baggage loading, show polishing and others in different countries on the basis of cultural variation across the globe.

The UNICEF defines 3 groups of street children as (a) Street Living Children (children ran away from their families and live alone on the street), (b) Street Working Children (children to spend most of their day time on the streets fending for themselves, but returns home on a regular basis) and (c) Street Family Children (children living on the streets with their families) [6].

Children leave the home and heading to the streets in view of poverty, intra-family feud and alluring the modernity getting obstacles in continuation on these tend in their family structures and consequently broken families and child abuse [7, 8].

The bulk of street children are on the rise day by day and they may reach 800 million if apt initiatives delayed to overcome the faced problems in this regard [9]. There are 63% of them going to bed hungry and 53% are chronic

malnutrition sufferers, 27 million are severely underweight and 33million are not in school entry at all [1]. In 1990, the government assumed that there are about 1.8 million children on the streets in Bangladesh, about 215, 000 children including 1, 00000 girls are thought to be in Dhaka City alone and 12 years later, there are probably 7 million children on Bangladeshi streets, most of them work as car cleaners, beggars, vendors, newspaper sellers, garages helpers, rag pickers and in other informal areas in different hazardous works [10].

According to a report from Consortium for Street Children, a United Kingdom based consortium of related Non Government Organizations, UNICEF estimated that 100 million children were growing up on urban streets around the world. Fourteen years later, in 2002, UNICEF similarly reported, "The latest estimates put the numbers of these children as high as 100 million [11].

Research reveal that different form of malnutrition is associated poor growth, cognitive developments, educational performances and income in later life [12-18]. The children are the different diseases sufferers [19-21] on the basis of seasonal variation and some are chronic health disorders sufferers according to their dwelling topographic variation. About 73% of street children in Dhaka city suffer from chronic malnutrition while mortality and morbidity status among street dwellers has reached an alarming level for lack of basic health and nutritional care services [22]. A range of social, demographic and community factors have significant impacts on childhood malnutrition [23-26].

The study explores the health status situation of the street children in Tangail district, the central body of Bangladesh, which may help to form relevant programs on their issues. The study aim was to assess the nutritional status in association with their socio-demographic condition.

2. Methodology

2.1. Study Nature

The study was a cross-sectional study.

2.2. Study Areas

The villages at Tangail Sadar, Sakhipur, Basail, Madhupur, Ghatail, Kalihati, Nagarpur, Mirzapur, Gopalpur, Delduar, Bhuapur and Dhanbari upazilas of Tangail district on Dhaka division in Bangladesh were the areas to conduct the study.

2.3. Data Collecting Assay

A planned questionnaire was developed containing both the closed and open ended query to collect data through face-to-face interview with the respondents. The questionnaire was pretested in areas far away from the sample areas and revised according to the feedback gained in the field level. The questionnaire was formed to obtain the relevant information considering personal, household, social and economic details, dietary patterns, general behaviors, leisure period activities, drug addiction and abuse, anthropometric

assessments and interrelation between different variables.

2.4. Anthropometric Data Collection

The anthropometric data were collected using the procedures listed below:

2.5. Body Weight Measurement

The body weight was recorded using the standard weighing machine keeping the respondent bare footed with minimal cloths.

2.6. Body Height Measurement

The height was recorded using modified tape keeping the respondent stranded on a platform, bare footed with their head upright, looking straight forward.

2.8. Nutritional Status Assessment

The nutritional statuses of the respondents were assessed using measured BMI.

2.9. Data Verification

The questionnaire was checked per day taking the interview and again these were carefully rechecked after collecting all the data and coaded prior the entrancing into computer technology. The   data was edited in case of sighting discrepancy (doubt entry, wrong entry etc.).

2.10. Statistical Analysis

The data were processed to undergo statistical analysis using SPSS 16 windows program. Microsoft Word, Microsoft Excel were used to represent the tabular, charts and graphical representation.

3. Results

Table 1. Socio-demographic contour of street children.

Grouping	Frequency	Percentage
Gender		
Gamines	12	10
Boys	108	90
Ages (Years)		
6 to 10	35	29.17
11 to 15	85	70.83
Siblings		
< 3	22	18.33
3 to 5	57	47.5
6 to 8	41	34.17

Table 1 showed age distribution of respondent where 70.83% within 11 to 15 and 29.17% within 6 to 10 age ranging and it's also observed that 47.5% respondent had 3 to 5 and 18.33% had <3 siblings respectively.

Table 2. Monthly income and daily meal eaten frequency.

Grouping	Respondents (%)
Monthly income (BDT)	
>2000	35.5

Grouping	Respondents (%)
1501 to 2000	28.5
1000 to 1500	31.8
<1000	4.2
Daily meal eaten frequency	
4	0
3	85.5
2	14.5
1	0

Table 2 showed that 35.5% respondent earned >2000 BDT (highest) and 4.2% were <1000 BDT (lowest) earners. The highest (85.5%) children were the three times, 14.5% two times and 0% was four and single time meal takers per day.

Table 3. *Hygiene practices and diseases experience.*

Patterns	Respondents (%)
Hand washing before eating	
Yes	85.3
No	14.7
Daily bath taken	
Yes	57.5
No	42.5
Suffering from diseases in last 3 months	
Yes	59.8
No	40.2

According to table 3 information, 57.5% respondent took bath daily, 59.8% suffered from diseases in last 3 months and 85.3% washed their hand before eating as a common hygiene practices.
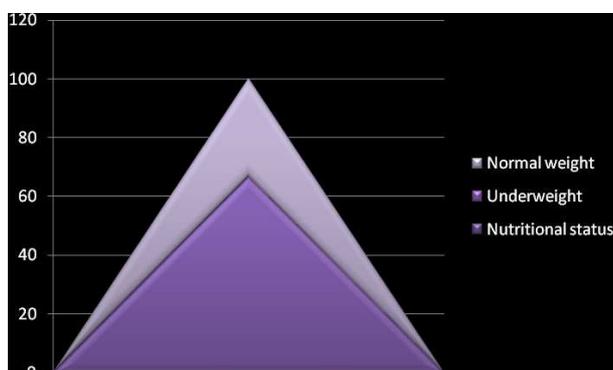

Figure 1. *Summary of Nutritional status on the BMI basis.*

Figure 1 presented to have 33.33% normal weight and 66.67% underweight respondent measured using the BMI standard. The greater portion of respondent was found in underweight meaning a galore gape on the track to attain nutritional soundness.

Table 4. *Crosstab between nutritional status and age.*

Ages (Years)	Nutritional status	
	Underweight (n)	Normal weight (n)
6 to 10	23	12
11 to 15	57	28
φ=-0.013		

Table 4 proved that maximum respondent were in underweight and the gained phi coefficient (φ=-0.013)

indicated that age of the respondent tends no difference in their nutritional status.

Table 5. *Crosstab between nutritional status and education level.*

Education level	Illiterate	Upto the PSC
Underweight (n)	55	25
Normal weight (n)	12	28
φ=+0.367		

The phi coefficient (φ=+0.367) from table 5 indicated that there were weak positive association of nutritional status with the education level of respondents.

Table 6. *Crosstab between nutritional status and drinking water sources.*

Water sources	Underweight (n)	Normal weight (n)
Tube well	29	57
Others	11	23
φ=+0.013		

Table 6 represented that most respondents were tube well water drinker and the phi coefficient (φ=+0.013) achieved from the table indicated that the drinking water sources make difference in nutritional status.

Table 7. *Working patterns of the respondents.*

Patterns	Percentage
Street hawker	10
Garbage picker	5.8
Buss helper	12.5
Others	6.67

Table 7 showed that 34.97% respondents were involved in different patterns of working status (Street hawker, garbage picker, buss helper etc.) and on the other hand the rest 65% of them were not involved in any type of works.

4. Discussion

The study was steered at Tangail district, the central landscape in Bangladesh of some 3.6 million populations with 1,100/ km^2 population density on 3414.35 km^2 surface area [27] in order to make the coverage of nutritional status of Tangail district street children as a central body of the state to support the ultimate nutritional assessment of Bangladeshi street children as a whole to aid taking intervention to upgrade their prevailing nutritional status assisting different socio- economic and demographic contour [28, 29]. The government should take solvable action to reduce the malnutrition degree in association with the social status upgrading bid as the government is obliged to ensure the right to adequate healthcare and nutritional soundness to all the rural and urban population irrespective of cast, creed, income, gender and religion across the country as per the section 18 (A) of Bangladeshi Constitution lowering the prevailing malnutrition intensity. The education level of the children is desired to improve, using safe drinking water in obligatory in accordance with the achieved phi coefficient (φ=+0.367) from table 5 and phi coefficient (φ=+0.013) from table 6 orderly to improve their nutritional status and social

living standard. The huge percentage of street children was found to be the malnutrition gainers by dint of lacked access to safe drinking water, inadequate nutritious foods, lack of hygiene practices and shelter. There were observed 66.67% underweight and 33.33% normal weigh in support of the conducted study which is comparable to findings of various studies conducted in various time frames in various countries [30, 31]. Nutritional status reflects possible option to assure physiological needs driving away multidimensional existing horror in the target population to form malnourishment as big headache in the societies. With nutrients consuming in adequate proportion sorting various foods maintaining food guide pyramid, the standard nutritional status can gained through proper metabolism [32 - 34] in the body to support growth and development, health and nutritional care and physical and mental activities and help to prevent diseases [35 - 37]. Lack of nutrition and homelessness related stress can be also contributing to early smoking behaviours of these children and smoking a significant social burden [38]. If their (nutrients) deficiency (often) and excess (rare) condition exists for long time, they result in interference with body functioning and increasing the occurrence of diseases [39]. The government should speed up national child protection system monitoring the children's rights violation keeping them from going back to the streets through various programs like education, drug detoxification programs and providing a safe family-like environment. A new type of socioeconomic modelling and policy analysis tools such as spatial microsimulation models [40-44] can be useful in this case to design effective policies and see any governments and non-governments organisations, environmental and spatial effects across different countries [45-48]. The International Day for Street Children is commemorates on April 12 each year with different gala themes as a formal advertisement fighting shy of the concerned children's rights but the day's importance and purposes are to be make clear to all the street children and the prompt measures proceed with as usual with the purposes to curb their life to lead astray.

5. Conclusion

Malnutrition is one of the premier public health problems in developing countries, the gravest single threat to global public health and the foremost child mortality contributor across the globe also. The current study findings revealed that malnutrition problem is in multi-dimensional helm pointing different linkages to social, economic and demographic factors. The street life is in alarming magnitude of supreme vulnerability to feel into the destitute ditch making their hang heavy hard up life. The street children are in physical, mental, social and spiritual health perils and they are at bay of different violence, abuse and so on. The state patronization, different local and international Non Government Organizations are in galore need to come up with health, nutrition, hygiene and education programs to upgrade their condition on behalf of attaining their secured childhood.

References

[1]   UNICE (2007) Street Children. http://www.unicef.org.

[2]   Sarah Thomas de Benitez (February 23, 2009). State of the World's Street Children: Violence Report. SlideShare. SlideShare Inc. Retrieved November 30, 2012.

[3]   Flowers (2010). pp. 20-21.

[4]   Evgenia Berezina (1997). Victimization and Abuse of Street Children Worldwide. Youth Advocate Program International Resource Paper, Yapi. Retrieved November 30, 2012.

[5]   UNCHS, 2000.

[6]   www.mexico-ch-ld-link.org/street-children.

[7]   Hatley A, Huser A. (2005) Identification of Street Children: Characteristics of street children in Bamako and Acca. FAFO Report 474.

[8]   Aptekar L (1884) Street Children in the Developing World: A review of their condition. Cross Cultural Research, 28 (30): 195-224.

[9]   Rita P, Isma W, Mitra D, Dadang S (2010) Nutrients intake and nutritional status of street children in bandung, Journal of Nutrition and Food, 5 (3): 177-183.

[10]   Lassoer J (2004) The UNDP Resident Representative in Bangladesh, UN Conversation on the right of the child, 1990, Shamanic; Child Rights Week 2004, October 5, 2004.

[11]   Sarah Thomas Benetez (2007). Street Children Series. Consortium for Street Children (UK). Retrieved November 30, 2012.

[12]   Rahman, A. and Chowdhury, S. (2007). Determinants of chronic malnutrition among preschool children in Bangladesh, *Journal of Biosocial Science,* 39(2), pp.161-173.

[13]   Rahman, A., Chowdhury, S., and Hossain, D. (2009). Acute malnutrition in Bangladeshi children: levels and determinants. *Asia-Pacific Journal of Public Health,* 21(3), pp. 294-302.

[14]   Rahman, A., Chowdhury, S., Karim, A. and Ahmed, S. (2008). Factors associated with nutritional status of children in Bangladesh: A multivariate analysis. *Demography India,* 37(1), pp. 95-109.

[15]   Megabiaw B, and Rahman A. (2013) Prevalence and determinants of chronic malnutrition among under-5 children in Ethiopia. *International Journal of Child Health and Nutrition,* 2(3), pp. 230-236.

[16]   Rahman, A. and Biswas, S.C. (2009). Nutritional status of under-5 children in Bangladesh. *South Asian Journal of Population and Health* 2(1), pp. 1-11.

[17]   Rahman, A. and Harding, A. (2013). Prevalence of overweight and obesity epidemic in Australia: some causes and consequences, *JP Journal of Biostatistics,* 10(1), pp. 31-48.

[18]   Rahman, A. and Harding, A. (2010). Some health related issues in Australia and methodologies for estimating small area health related characteristics, *Online Working Paper Series: WP-15,* NATSEM, University of Canberra, pp. 1-59.

[19] Kuddus, A. and Rahman, A. (2015). Affect of Urbanization on Health and Nutrition, *International Journal of Statistics and Systems,* 10(2), pp. 164-174.Rahman, A. and Sapkota, M. (2014), Knowledge on vitamin A rich foods among mothers of preschool children in Nepal: impacts on public health and policy concerns, *Science Journal of Public Health*, 2(4), pp. 316-322.

[20] Kuddus, A. and Rahman, A., Talukder, M.R. and Hoque, A. (2014). A modified SIR model to study on physical behaviour among smallpox infective population in Bangladesh, *American Journal of Mathematics and Statistics,* 4(5), pp. 231-239.

[21] ICDDR, B (2010) Street dwellers performance for health care services in Dhaka, Bangladesh. Dhaka: ICDDR, B.

[22] Rahman, A. and Kuddus, A. (2014). Effects of some sociological factors on the outbreak of chickenpox disease, *JP Journal of Biostatistics,* 11 (1), pp. 37-53.

[23] Sally, B., Gormez, A., Rahman, A., and colleagues (2012). Jurisdictional, socioeconomic and gender inequalities in child health and development: Analysis of a national census of 5 year olds in Australia, *BMJ Open,* 2(5):e001075, pp. 1-15.

[24] Rahman, A. and Kuddus, A. (2014). Effects of some sociological factors on the outbreak of chickenpox disease, *JP Journal of Biostatistics,* 11 (1), pp. 37-53.

[25] Kuddus, A. and Rahman, A. (2015). Human Right Abuse: A Case Study on Child Labor in Bangladesh, *International Journal of Management and Humanities*, 1(8), pp. 1-4.

[26] Ashraful Islam (2012) Tangail District. In Sirajul Islam and Ahmed A. Jamal. Banglapedia: National Encyclopedia of Bangladesh (Second edn.). Asiatic Societic of Bangladesh.

[27] Bhuiya A, Wojtyniak B, D'Suzoa, Zimili S (1986) Socio-economic determinants of child nutritional status: boys versus girls. *Food Nutr Bull,* 8 (3): 3-7.

[28] Vicor CG, Vaughan PJ, Kirkwood BR, Martinez JC, Barcelos LB. (1986) Risk factors for malnutrition in Brazilian children: the role of social and environmental variables. *Bull WHO*, 64: 299-309.

[29] Mahan P (2000) Street Youth in Southern Africa. *International Social Science Journal,* 5 (164): 233-243.

[30] Ayaya S, Esami F (2001) Health problems of street children in Eldoret, Kenya, *East African Medical Journal,* 78 (12): 624-9.

[31] Smith E, Morowitz H ((2004) Universality in intermediary metabolism. *Proc Natl Acad Sci USA* 101 (36): 13168-73.

[32] Ganong, William F. Review of Medical Physiology. (Twentieth edition), p. 271, ISBN 0-07-112064-5.

[33] Ebenhoh O, Heinrich R (2001) Evolutionary optimization of metabolic pathway. *Bull Math Biol* 63 (1): 21-25.

[34] Whitney, Elanor and Sharon Rolfes (2005) Understanding Nutrition (Tenth edition), p. 6.

[35] Frances Sizer, Ellie Whitney (November 12, 2007) Nutrition: Concepts and Controversies. Cengage Learning, pp. 26. ISBN 987-0-495-39065-7. Retrieved October 12, 2010.

[36] Murphy SP, Allen LH (2003) Nutritional importance of animal source foods. *J Nutr,*; 133: S3932-5.

[37] Rahman, A. and Harding, A. (2011), Social and health costs of tobacco smoking in Australia: Level, trend and determinants, *International Journal of Statistics and Systems,* 6(4), pp. 375-387.

[38] [39]Mahan LK, S Escott-Stump (2007) Krause's Food, Nutrition and Diet Therapy. Elsevier.

[39] Rahman, A., Harding, A., Tanton, R. and Liu, S. (2013), Simulating the characteristics of populations at the small area level: New validation techniques for a spatial microsimulation model in Australia, *Computational Statistics & Data Analysis,* 57(1), pp. 149-165.

[40] Rahman, A., Harding, A., Tanton, R. and Liu, S. (2010), Methodological issues in spatial microsimulation modelling for small area estimation, *International Journal of Microsimulation* 3(2), pp. 3-22.

[41] Rahman, A. and Harding, A. (2014), Spatial analysis of housing stress estimation in Australia with statistical validation, *Australasian Journal of Regional Studies* 20(3), pp. 452-486.

[42] Islam, D., Ashraf, M., Rahman, A. and Hasan, R. (2015). Quantitative Analysis of Amartya Sen's Theory: An ICT4D Perspective, *International Journal of Information Communication Technologies and Human Development,* 7(3), pp. 13-26.

[43] Rahman, A. and Harding, A. (2012). A new analysis of the characteristics of households in housing stress: results and tools for validation, *Paper presented at the 6th Australasian Housing Researchers' Conference 2012 (AHRC12)* The University of Adelaide, Adelaide, South Australia, pp. 1-23 (February 8 – 10).

[44] Rahman, A. (2009). Small area estimation through spatial microsimulation models: Some methodological issues, *Paper presented at the 2nd General Conference of the International Microsimulation Association,* The National Conference Centre Ottawa, Canada, pp. 1- 45 (June 8 to 10).

[45] Rahman, A. (2008). A review of small area estimation problems and methodological developments, *Online Discussion Paper Series: DP-66,* NATSEM, University of Canberra, pp. 1-56 [ISBN 978-174-088-3030].

[46] Rahman, A. and Harding, A. (2010). Some health related issues in Australia and methodologies for estimating small area health related characteristics, *Online Working Paper Series: WP-15,* NATSEM, University of Canberra, pp. 1-59.

[47] Phil, M. (2011), Small area housing stress estimation in Australia: Microsimulation modelling and statistical reliability, University of Canberra, Australia.

[48] Rahman, A. and Upadhyay, S. (2015). A Bayesian reweighting technique for small area estimation. In *Current Trends in Bayesian Methodology with Applications*, CRC Press, London, pp. 503-519.