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Assessment of Maternal and Child Health Care in Selected Slum Areas of Raiganj Municipality, West Bengal, India

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ABSTRACT

The nutritional insufficiency among under 5 years children is a serious challenge for India. Despite several efforts have been made to improve the maternal health and child health care, disparities across various socio-economic groups in acquiring MCH services remains major challenges in India. This paper aims to examine the maternal health care and nutritional status of children in selected slums of Raiganj Municipality. A cross-sectional study has been carried out using primary data (n=180) collected from the selected slums. The Z-score of various anthropometric measures have been carried out using WHO Anthro software (version 3.2.2) and the various maternal health indicators have presented in percentage table. About 42% women married before 18 years of age and 17% were illiterate. Nearly 45% women took less than 4 times of antenatal care and only 54% were taken full course of IFA. Furthermore 8.9%, 20% and 16.1% children were severely underweight, stunted, wasted respectively. The findings of the study suggest that providing more attention to the pregnant women and children of under 5 years of slums of Raiganj to improve the nutritional status of the children.

1. Introduction

The concept 'Maternal and Child Health' is not only endorsing the health of mothers, infants, child, and adolescents, it's also emphasis on the sustainable development of human society as well as its future challenges. It covers both the health implication of the mother and nutritional status her child. The nutritional status of the children can be assess in terms of physical, mental and biological aspects and stunting, wasting and underweight are the indicators of malnutrition[1]. By the end of the MDG (Millennium Development Goals, 1990 to 2015) [2] programme, it needs to assess the present status of child mortality (Goal 4) and maternal health (Goal 5) in India. Globally the under-5 year's child mortality have reduced from 90 to 43 per 1000 live births (1990 to 2015), while India has also tried to match the global average as it is 39 per 1000 live births [3]. India likely to miss the MDG's target in reducing maternal mortality as it has declined only 16.03% from 2006 to 2013, while globally the rate is 45% from 1990 to 2013. In 1985, Rosenfield and Maine called for more attention to maternal health care in their landmark paper "Where is the M in MCH?"[4]. In the SDG's the goal no. 3 that is "*Good Health and Wellbeing*" is the matter of concern for this study[5]. There have some specific targets mentioned for the purpose of maternal and child health in this goal. Present study has revealed many facts and findings regarding the 'Maternal and Child Health status of slum dwellers of Raiganj Municipality which will reflect the preparation for sustainable development.

2. Study Area

The town Raiganj is located in the lower part of North Bengal. It is the District Head Quarter of Uttar Dinajpur and the main commercial hotspot for the surrounding suburbs. The present study carried out in the Raiganj Municipality, which lies between 25˚35'35"N to 25˚38'23"N and 88˚6'54"E to 88 ˚9'34"E. It located beside of NH 34 and Left Bank of River Kulik and 75 km away from Malda and 180 km from Siliguri. Administratively it comprises of 27 wards. In the western side it is bordered by Kulik River, Karnajora situated in the northern side, 12 no Barua GP on the East and Maraikura GP on the south. Slums represent a large section of people in Raiganj Municipality. According to Municipal record 2011 the Slum population of Raiganj Municipality was 68019, which was nearly 41% of the total population. These slums are located besides the railway, on the embankment of Kulik River and sides of the National Highway (NH34) etc. The total number of slums is 89, out of this 62 are notified and 27 are non-notified. The Slum Dwellers are basically migrants from Bihar, Jharkhand, Bangladesh and also from the rural areas. The main occupations are daily labors, construction labors, sweepers, vendors, municipal workers etc.

3. Database and Methodology

Data for this study were obtained from cross-sectional survey design to evaluate the factors of maternal health and physical fitness and body composition of children (under 5 years of age). The secondary data pertaining to population, health statistics, spatial data etc. have been collected from the municipal records, NFHS - IV district level statistics and other unpublished works. A two stage probability sampling method was used. The first stage included the selection of slums and second stage consisted of random sampling of respondent's women (15 – 49 years) and her child (Under 5). The study involved 15 slums (25%) randomly selected from a total of 62 notified slums within the Raiganj municipality. The total population of women who have under 5 years children are 1434 and children of under 5are 1694 (reported from local ICDS centers). Total 141(10% of total women) women and

their 180 children have been randomly selected for the primary data collection. The primary survey was carried out during 25th March 2018 to 7th April 2018.The data have been considered, analyzed and tabulated using MS Office Excel, 2007.

Anthropometric Measures -

Anthropometric measures are the most practical tool for assess health and nutritional status in the children[6]. These indices are widely used to evaluate the health and nutritional status of children. Based on the age, body weight and height, a number of indices such as weight for age, height-for-age, weight-for-height and body mass index have been suggested[7] For the calculation of anthropometric measures of 180 children, date of birth (age), height (using measuring tape at nearest 0.1 centimeters) and weight (using portable digital scale nearest at 0.1 kilogram) of the selected children have been recorded. The WHO Anthro (version 3.2.2) software has been used to calculate the height-for-weight, height-for-age, weight-for-age and BMI-for-age to evaluate the present nutritional status of children.

4. Results and Discussion

Age of Women at Marriage

The marital age of girls is an important indicator of her maternal health. India has adopted 18 years [8]of marital age for girls, as they can achieve adequate maturity to take the upcoming responsibilities. United Nations (UN) Conventions and Resolutions consider "child, early, and forced marriage" as a fundamental violation of human rights[9]. Many studies have revealed a significance association between the maternal child marriage and infant & child mortality and also low birth weight of the baby[10] – [20]. Early age of marriage can increased risk for premature birth and death as neonates, infants, or children. In India nearly 15.3 (20%) millions of girls having been married before 18 years of age in last 9 year time period between 2002 to 2011 (Census 2011).Table 1 reveal that nearly 42% of women from selected slums of Raiganj Municipality got married before they attained the age of 18 years, which is far away from the national average (20%) in 2011Census. This scenario determines poor socio-economic background, less awareness, male dominance in decision making, high risk factor for premature birth, neonatal deaths and health implications.

Literacy Rate

There has been a positive relationship found between education of woman and their health during maternity [21]-[22] Lack of education affects the health of the women during pregnancy and childbirth which creates vulnerable and negative outcomes[23]. Positive effects of education may leads to decrease the rate of high fertility and short birth intervals, which also decrease the risk of pregnancy complications[24]. Table 1 depicts about 17% are illiterates, 25% completed up to primary, 21% in Secondary and only 30% have completed higher secondary. It reveals that nearly 25% of the women of selected slums in Raiganj have attains their education up to primary level. Interestingly 17.02% surveyed women are illiterate and only 29.79% attain higher secondary level.

Table1 Indicators of Maternal Health

Variables	Number (n)	Weighted %
Age of marriage		
< 18 years	59	41.84
> 18 years	82	58.16
Education		
Illiterate	24	17.02
Literate	117	82.98
Level of literacy		
Primary	35	24.82
Secondary	31	21.99
Higher secondary	42	29.79
Above	9	6.38
Antenatal visits		
No visits	9	6.38
<4 visits	63	44.68
≥4 visits	69	48.94
IFA course		
Not taken	13	9.22
Half course	52	36.88
Full course	76	53.90
Institutional delivery		
Yes	114	80.85
No	27	19.15

Ante-natal Care Visits

The ANC service is treated as basic rights for all pregnant to keep safe their infants[25]. Complications occurred during delivery period are the most leading cause of maternal mortality and morbidity among women of 15 to 49 years age in developing countries[26]. Many studies have shown that it is possible to prevent maternal and neonate deaths. Antenatal care is one of the important key aspects for reducing maternal mortality and morbidity by diagnosing and treating of complications before the delivery[27]. It may cause adverse perinatal outcomes if the recommended ANC service is not taken [28].Minimum 4 ante-natal visits have referred as the standard number of visits for ante-natal care. The Ante-natal care (ANC) visits includes Weight measure, Blood Pressure check, HIV test, TT injection, IFAC course, Ultrasono, Counseling etc. Table 1 depicts nearly 93% of the surveyed women visited health centre during their recent pregnancy for antenatal care. But 44.68% of the women visited less than 4 times of ante-natal care. About 6% of women have not taken antenatal care during their recent pregnancy. Rest 48.94% visited 4 or more than 4 times.

Iron Folic Acid Course

The 2012 WHO report, more than 40% of worldwide pregnant women were anemic. Among this, 50% of the burden is caused by iron deficiency[29]. Prevalence of anaemia in pregnant women of India has declined from 57.90% to 50.30% (NFHS 3 to NFHS 4)[30]. Iron deficiency is most probably the main cause for anaemia in India[31]. National government has initiated the NIPI programme to provide daily doses of IFA to the pregnant women for next 100 days[32]. It is estimated that more than 40% of pregnant women worldwide are anemic (WHO). Table 1 reveal that nearly 54% of the surveyed women

of Raiganj Municipality have taken full course of Iron folic Acid Tablet Course (Minimum 100 Tabs). 37% of Surveyed slum's women have taken only half course of IFAC (Minimum 60 Tabs). Rest 9% of women has not taken the IFA tablets course.

Institutional Delivery

The place of delivery is also associated with the health implication of mother and new born baby. Nearly 79% of births in India were institutional[33]. Institutional delivery provides necessary health care services to both mother and child. The proportions of institutional delivery among the surveyed women are very high, that is 81%. Only 19% of deliveries have been taken place at Non-institutional places.

Table 2 Summary of nutritional indices among under-5 children

Nutritional Status	Percent		Mean Z-score	Standard Deviation
	<-3SD	<-2SD		
Underweight	8.9	29.4	-1.74	0.86
Stunted	20	44.4	-1.68	1.5
Wasted	16.1	26.7	-1.04	1.78
BMI for age	16.1	28.9	-1	1.86

Weight for Age (Underweight)

The measurement of weight for age of a child has been conducted to enquire whether the child is under weight or not. If the value of weight for age is below minus two standard deviations from mean value of weight for age of reference children, it's refer as 'Moderately Underweight' category and when it is below minus three standard deviation, it's refer as 'Severely Underweight' category. As can be seen in table 2 and figure 6, a fare segment of children exhibited under-weight growth. Nearly 29.4% of children are categorized as underweight (<−2SD) and 8.9% are severely underweight (<-3SD). Again table 3 and figure 1shows age- group wise Percentage of Under-weight Children in Selected Slum Areas or Raiganj Municipality. 75% of children ages of 0 to 5 months are moderately (75%) and severely (75%) under-weight. Again 14.3% of children ages of 12 to 23 months and 66.7% of children ages of 24 to 35 months are moderately underweight. About 16.7% of children ages of 24 to 35 months are severely underweight.

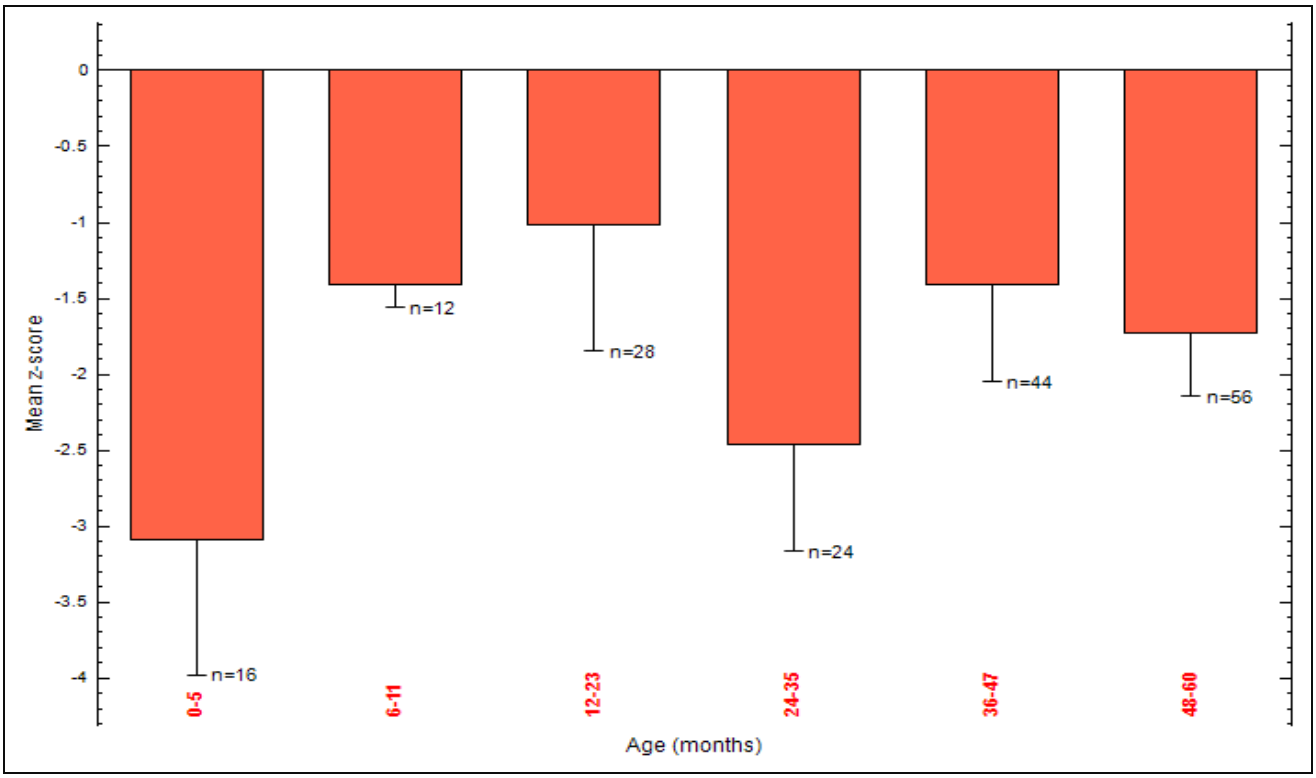

Figure 1Age-group wise Z-score distribution of the weight for age of Children

Height for Age (Stunting)

It is also called the measurement of stunting. If the value of height for age is below minus two standard deviations from mean value of weight for age of reference children, it's refer as 'Moderately Stunted' category, which means the height of the child is less than the standard value as per him/her age. When the value is below minus three standard deviations from mean, it refers as 'Severely Stunted' category. From table 2 and figure 2 it can be seen that 44.4% of children under-five age are classified as stunted (<−2SD) and 20% are severely stunted (<−3SD). While table 3 shows age- group wise Percentage of Stunting of children in Selected Slum Areas or Raiganj

Municipality. 50% of children ages of 0 to 5 months are moderately (50%) and severely (50%) stunted. In the age group of 36 to 47 months the percentage of stunted child (<-2SD) is 54.5% and 36.4% are severely stunted. Again in the age group 48 to 60 months the percentage of stunted child (<-2SD) are 14.3% and severely stunted (<−3SD) are 57.1%.

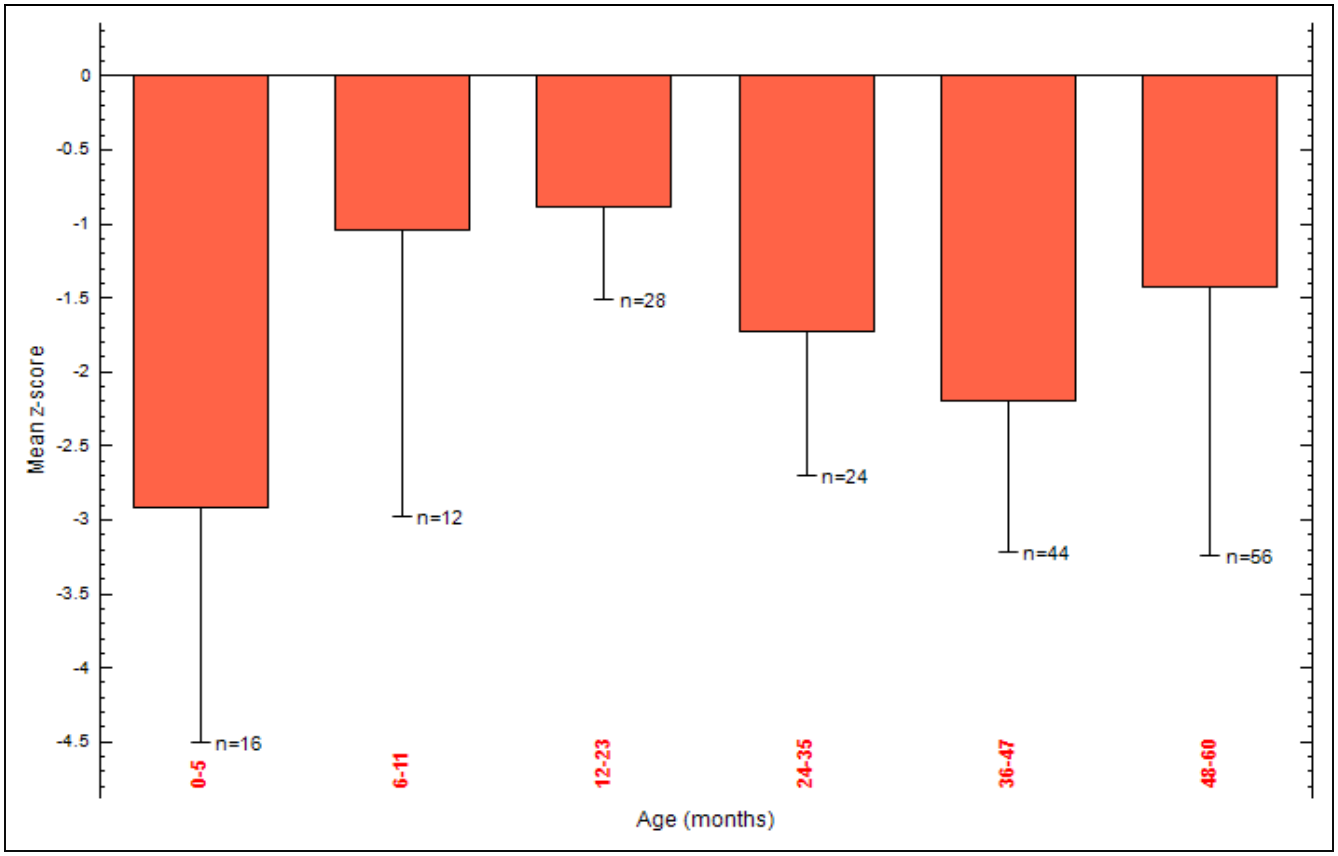

Figure 2 Age-group wise Z-score distribution of the height for age (Stunting) of Children

Table 3 Age- group wise Percentage of Under-weight, Stunting and Wasting Children

Age groups	Underweight			Stunting			Wasting			BMI		
	% < -3SD	% < -2SD	Mean Z-Score	% < -3SD	% < -2SD	Mean Z-Score	% < -3SD	% < -2SD	Mean Z-Score	% < -3SD	% < -2SD	Mean Z-Score
Total (0 - 60)	8.9	29.4	-1.74	20	44.4	-1.68	16.1	26.7	-1.04	16.1	28.9	-1
(0-5)	75	75	-3.08	50	50	-2.91	25	50	-1.09	25	50	-1.92
(6-11)	0	0	-1.41	33.3	33.3	-1.04	0	0	-0.91	0	33.3	-1.09
(12-23)	0	14.3	-1.02	0	0	-0.89	0	14.3	-0.83	0	28.6	-0.7
(24-35)	16.7	66.7	-2.47	0	50	-1.72	33.3	33.3	-2.17	33.3	33.3	-2.05
(36-47)	0	20.5	-1.41	36.4	54.5	-2.2	11.4	18.2	-0.23	11.4	18.2	0.02
(48-60)	0	21.4	-1.73	14.3	57.1	-1.42	21.4	35.7	-1.31	21.4	28.6	-1.22

Weight for Height (Wasting)

It simply denotes the weight of the children according to height. If the value of weight for height is below minus two standard deviations from mean value of weight for height of sample children, it's refer as 'Moderately Wasted' category, which means the weight of the child is less than the standard value as per him/her height. When the value is below minus three standard deviations from mean, it refers as 'Severely Wasted' category. Table 2 depicts 26.7% of children are classified as moderately wasting (<−2SD) and almost 16.1% are categorized as severely wasting (<-3SD).The above table 3 and figure 3 is showing age- group wise percentage of wasting children in selected slum areas or Raiganj Municipality. In the age group of 0-5 months the percentage of wasted child (<-2SD) are 50% and the percentage of severely wasted children (<−3SD) are 25%. Again 33.3% of children age of 24 to 35 months are wasted (<-2SD) and severely wasted. About 35% of children in 48 to 60 months age group are moderately wasted and 21.4% severely wasted.

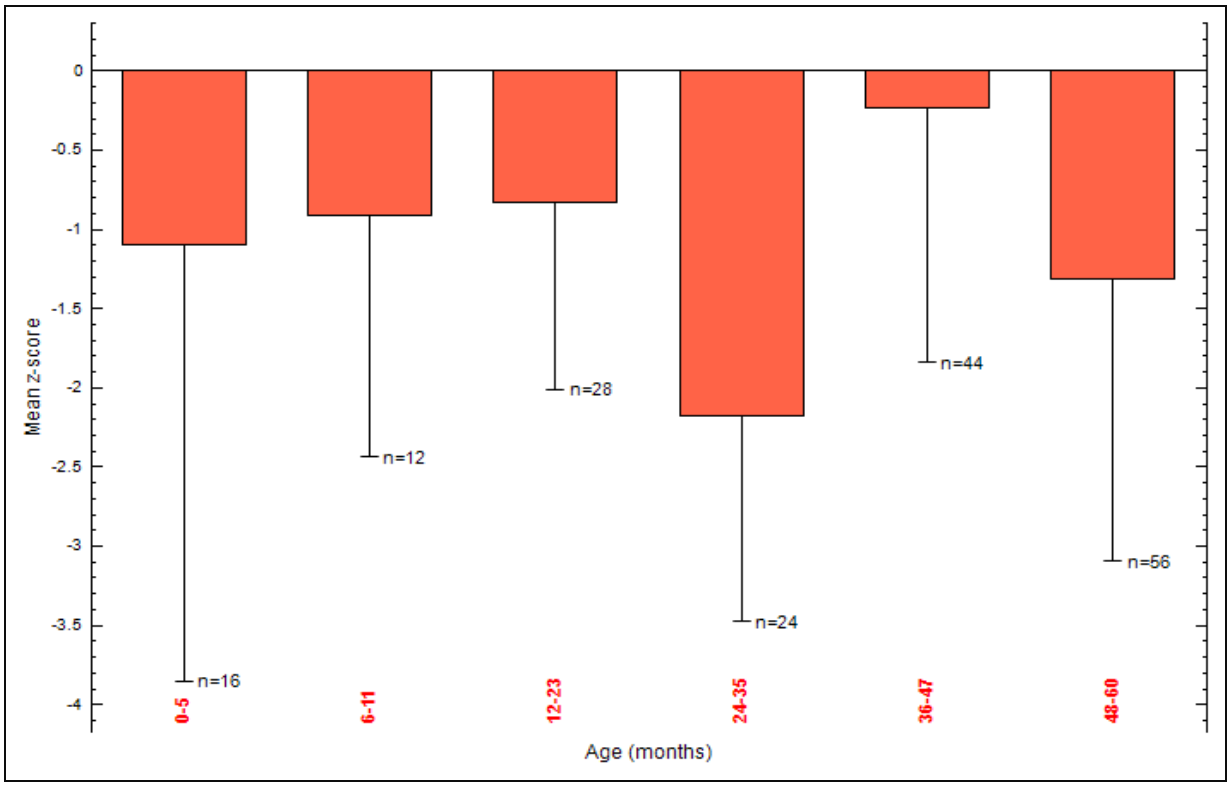

Figure 3 Age-group wise Z-score distribution of the weight for height (Wasting) of Children

Body Mass Index for Age

The body mass index is an estimate of body fat based on height and weight. BMI can help determine whether a person is at an unhealthy or healthy weight. High or Low BMI than the standard can cause many health implications. In this section we are calculating the BMI according to age of the children. Table 2 reveals the Z score distribution of BMI for age of the sample children from where it can be found that 28.9% of children are classified under <- 2SD of BMI for age and almost 16.1% are categorized under <-3SD. While table 3 and figure 4 is showing age- group wise percentage of BMI of the children in selected slum areas or Raiganj Municipality. 25% of children ages of 0 to 5 months are moderately less BMI and 50% severely less BMI. Again 33.3% of children age of 24 to 35 months of children s are moderately less BMI (<-2SD) and severely less BMI (<-3SD). About 21.4% and 28.6% of children ages of 48 to 60 months are moderately and severely less BMI.

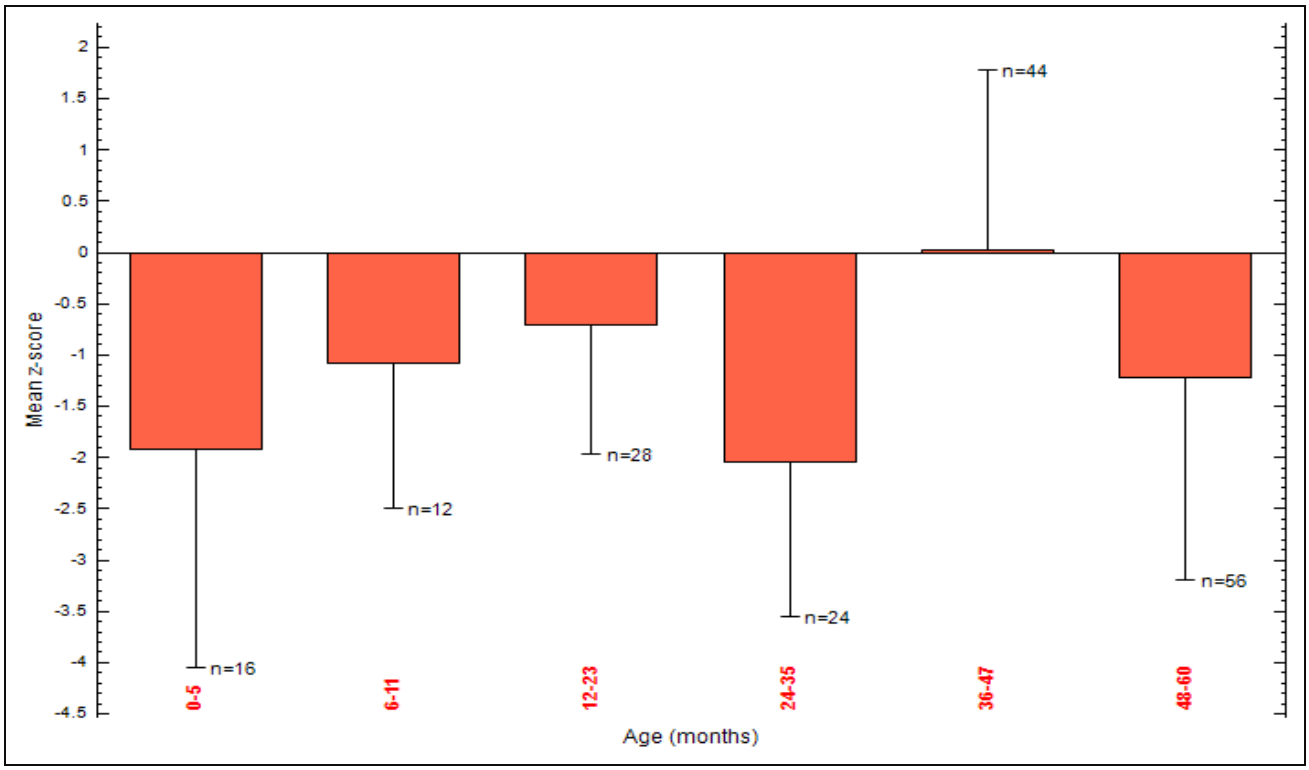

Figure 4 Age-group wise Z-score distribution of the BMI for age of Children

5. Recommendation and Conclusion

From the overall discussion it can be found that the present status of maternal and child health among the slum dwellers of Raiganj Municipality is not very significant and it also lagging behind the MDG target. For fill-up the present scenario multi-sectoral intervention needed as mentioned by the World Health Organization to achieve the SDG goal by 2030. A holistic approach should be made concerning the related authorities to improve the present health facilities. Mass awareness can be enhanced through various campaigning and discussion with the slum dwellers with relating to maternal child health.

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