Tuijin Jishu/Journal of Propulsion Technology
ISSN: 1001-4055
Vol. 44 No. 6 (2023)

A Study to Assess Family Status and Parent's Health Education on the Nutritional Status of Children Selected Urban Community Areas of District Gwalior

Manish Kankar[1], Mini Anil[2], Rakesh Kumar[3]

School of Nursing Sciences

ITM University, Gwalior, India

Abstract

Several factors, including a family's socioeconomic standing, level of education, and health literacy, influence their nutritional standing. Children and women from low-income families are disproportionately affected by India's widespread malnutrition crisis. The prevalence of malnutrition is particularly severe in the Indian region of Gwalior. A family's nutritional status is heavily influenced by socioeconomic factors and the level of health literacy of the parents. The availability and accessibility of healthy food in the home is influenced by the family's socioeconomic standing, which includes characteristics such as income, education level, and occupation. Parents' knowledge of nutrition and healthy eating is a major factor in shaping their children's and other family members' diets. The goal of this research is to determine how socioeconomic status, parental health education, and child nutrition in a few randomly chosen urban neighbourhoods of the Gwalior district, Madhya Pradesh (MP), interact with one another. The purpose of this research is to learn how these variables affect kids' diets in urban settings. This research employed a descriptive correlative method. Gwalior, India, was the site of the research. This study used a correlative methodology. The sample included of 100 family. Sample was selected using purposive sampling technique. Adult participants provided written informed consent and permission to perform the study before any data was collected. Information was gathered through the use of an interview schedule and a checklist to record observations. Descriptive and inferential statistics (both pre- and post-tests) were used to examine the data. Families with college degrees were found to have more knowledge than the ordinary family. Seventy percent of responders were ill-informed about their own nutritional status. After receiving health education, however, only 36.66 percent scored above average and 46.66 percent scored below. The effectiveness of health education was demonstrated by a statistically significant rise in test scores (mean post test score of 18.3, compared to mean pretest score of 7.9) at the 0.00001 level. The socioeconomic level of families and parental health education were found to be significant factors in determining children's nutritional status in urban community areas of District Gwalior. Evidence suggests that improving parental knowledge, especially in the areas of nutrition and health-related activities, can have a beneficial effect on children's dietary intake. These results have important implications for the design of future treatments and policies meant to enhance the nutritional health of children living in comparable conditions. It is important to evaluate the long-term effects of initiatives in this area, and further study is needed to determine the precise processes by which parental health education and socioeconomic position affect children's diets.

Keywords- *nutrition, education, children, under nourished*

1. Introduction

Among the different variables of nutritional status, parent's education is probably the next most important component after the socio-economic level. Mothers who have completed some level of formal education are better able to make the most of limited resources for their children than those who have not [1]. According to D'souza et al. [2], women's education has a direct impact on their children's health and nutrition because of the care they take in these areas at home. Children of educated mothers have better anthropometric measurements than those of their less-educated counterparts, according to research conducted by Arya et al. in the city of Parbhani, Marathwada (Maharashtra) [3]. When Sive et al. compared 106 children hospitalized for conditions other than malnutrition to 53 children with kwashiorkor, they found that the mothers' levels of education were the most significant difference between the two groups. In contrast to the 93% literacy rate among non-kwashiorkor moms, only 57% of those caring for children with kwashiorkor could read or write [4].

While there is strong evidence linking maternal education and child wellbeing, there is less conclusive evidence linking paternal education or joint parental education to child wellbeing [5,6].

With this in mind, researchers analysed data from primary school students in Pune cantonment to learn about

a) The correlation between parental education and their children's nutritional state.

b) The correlation between a mother's level of education and her children's health and nutrition.

c) The correlation between maternal education and girls' relative nutritional status to males.

d) The connection between father's education and the nutritional status of children.

e) The correlation between father's education and girls' versus boys' nutritional status.

2. Substances and Techniques

Primary schools in a sizable Cantonment were the sites of the current cross-sectional study, which was conducted between June 1994 and May 1995. During the time of the study, the Cantonment was home to 37 different elementary schools. There were a total of 14497 kids enrolled in these institutions from kindergarten through fifth grade, with ages ranging from five to fifteen.

Using a type I error of 0.05 and a two-tailed test, the minimum sample size was determined to be 2100. To fulfill this criterion, at least seven schools have to be chosen at random. Out of the total of 37 schools on the list, 7 were chosen at random, representing 2,585 students. This not only boosted the study's accuracy but also made sure that no students from the chosen schools were excluded from the test.

Information regarding the education of the parents was obtained by a questionnaire delivered to parents in the form of a letter. Parents' educational backgrounds were to be disclosed independently, with responses ranging from "illiterate" to “X” for high school, “VUl” for middle school, “X” for high school, “10+2” for junior college, “graduate” for college, and “professional” for graduate school. Meeting the parents and talking to the kids helped verify the data that was made public. The parents were then further separated into three groups based on the information, with one group consisting of primary school dropouts. in the second group, up to X standard, and in the third group, above X standard.

From the student's academic file, we learned his or her age, gender, and grade level. Ages were rounded up to the nearest full year. The kids' weights were measured using a beam balance of the platform variety to within 0.1 Kg. Every morning, before class, a set of reference weights was used to double-check the accuracy of the scale. The kids were instructed to stand in the middle of the platform without touching it or anything else. They weighed them while they were dressed uniformly but barefoot. Later, consistent weight (often around 200 gms) was subtracted from each person's total weight to account for adjustments. The indicator weight-for-age was used to evaluate nutritional status. All children with weight for age less than 80% of standard (as per lAP

classification) were considered undernourished. The socioeconomic stratum (7) was determined using Kuppuswamy's Socioeconomic Status (SES) Scale (urban).

3. Parental Education &Child Nutrition

Mother's Literacy status	**Father's Literacy status**	**Literacy (upto X std in %)**	**Above X std (%)**	**Total (%)**
Illiterate/Primary	912(35.97)	689(27.73)	89(4.51)	1678(65.89)
Up to X std	186(7.88)	592(23.59)	115(5.52)	873(34.76)
Above X std	6(0.21)	18(0.76)	17(0.73)	41 (1.57)
Total	1092 (42.82)	1297(49.86)	229(9.54)	2596(100)

4. Results

Of the 2585 youngsters that participated in the study, 1332 (51.53%) were female and 1253 (48.57%) were male. They were distributed as follows: 0.12% from the upper SES, 52.19 % from the medium SES, 15 % from the lower SES, 31.84 % from the middle SES, and 0.85 % from the lower SES. The distribution by socioeconomic status, however, was found to be gender-neutral.

3.1 Literacy Level

The distribution of children according to the educational status of their parents is indicated in Table-I.

From the data in the table, we can conclude that 34.86 percent, or 901 out of a total of 2585 children, were raised by parents with no more than a primary school education. When both parents had completed high school, the number of children dropped to 581 (22.48%), and when both had completed college, it dropped to 16 (0.62%). Children's nutritional status was correlated with parents' education level using these data.

Table 2 shows the sex distribution of children whose fathers are literate, while Table 3 shows the sex distribution of children whose moms are literate.

Father's Education	**Male (%)**	**Female (%)**	**Total (%)**
Illiterate/ Primary	651(44.92)	543(38.85)	1192(42.92)
Up to X std	716(49.39)	692(62.24)	1397(47.86)
Above X std	89(8.93)	121(9.23)	329(9.45)
Total	1264 (100)	1443(100)	2696(100)

According to the data, 41.81 percent of children had fathers who were either uneducated or had only completed elementary school.

This increased dramatically up to 64.87% in case of moms.

3.2 Condition of Nutrition

882 (34.12%) children were classified as normal based on their weight in relation to their age (lAP Classification), indicating that they were undernourished.

855 (34.08%) children were suffering from mild undernutrition, 619 (23.95%) from moderate undernutrition, and 229 (8.89%) from severe undernutrition. In order to analyse the effect of education of parents on nutritional status, the nutritional grades were regrouped. Those with a weight-for-age ratio of less than 70% (lAP classification) were classified as undernourished, while those with a ratio that was greater than 70% were classified as well-nourished.

After the children were regrouped, 1737 (67.20%) were found to be healthy, including 866 boys and 871 girls. However, 848 (32.8%) were found to be malnourished, comprising 387 boys and 461 girls.

3.3 The Effect of Parental Education on Child's Nutrition

Table 4 shows how the nutritional health of children varies according to the combined educational level of their parents. The chart shows that 36.51 percent of children were undernourished when both parents had no more than a primary school education. The percentage of malnourished children dropped to 30.29 percent and 18.75 percent when both parents' literacy levels rose to or above the X level. It was determined that there was a statistically significant link between parental education level and children's diet quality.

3.4 The Effect of Mothers' Education on Their Children's Nutrition

Table-S displays the variance in children's nutritional status as a function of their mothers' levels of education. Among women with only a primary education, 34.47 percent of their children were underweight. When mothers' education reached X, the percentage of their children who were undernourished dropped to 30.34%; when it exceeded X, the percentage dropped to 15.79%. Further a stratified analysis was carried out to find sex differential in undernourished at each level of educational standard of moms. This was helpful in determining how likely it was that a girl would be undernourished on her own. The findings are shown in Table-6. The table shows that the likelihood of a girl child being undernourished was 1.16 times higher than a boy kid when the mother's education level was just primary, 1.24 times higher when it was between X and primary, and 3.42 times higher when it was above X and primary. These results, however, did not reach statistical significance. Girls had a 1.19-fold increased chance of being undernourished compared to boys. Indeed, statistical significance was shown for this result.

The Effect of the Father's Level of Education on the Children's Diet

Table- shows the demographic breakdown of children by their fathers' levels of education and food security. The table shows that when dads had only completed primary schooling, 35.99% of their children were undernourished. Having a father who has completed high school reduces a child's risk of malnutrition by 31.57%. If dads had completed secondary school or higher, the likelihood of their children being undernourished would drop to 24.31%. These results point to a negative correlation between a father's level of education and child malnutrition. Detecting the gender gap in undernourishment and the independent risk of a female child being undernourished required a stratified analysis, the results of which are displayed in Table-S.

If dads only had a primary school education, the odds of having an undernourished daughter were 1.13 times greater than those of having a son, and 1.17 times higher if fathers had completed high school. These differences were statistically not significant. However, a statistically significant difference in the nutritional health of girls and boys was observed when fathers were educated beyond X standard. One study found that a girl's risk of being malnourished was 1.20 times that of a boy's.

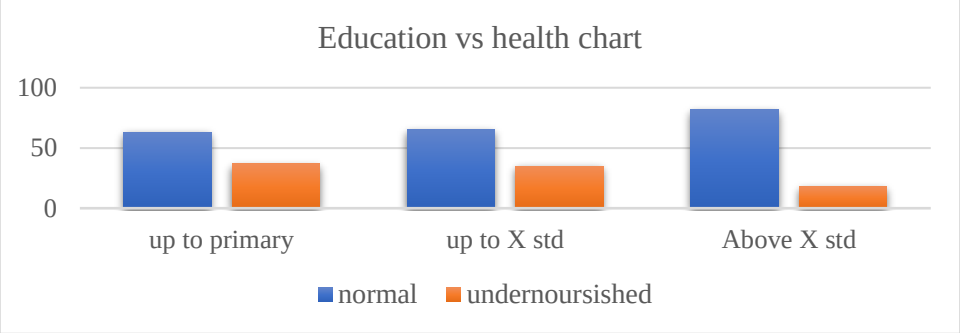

Figure 1. Education vs health chart

5. Discussion

The nutritional needs of school-aged children are very important. It's the season for sudden growth spurts. This is the moment when you need to eat the healthiest food. It's when malnutrition sets in, even if there aren't any obvious signs of it (unless the deficiency is extreme).

Table 2. Distribution of children's nutritional status according to parent's educations

Nutritional status	Illiterate Primary	Up to X std (%)	Above X std	Total(%)
Undernourished	334(41.62)	187(31.42)	4(19.86)	619(34.82)
Normal	683(64.58)	416(68.62)	14(82.36)	889(67.12)

Table 3. Distribution chart

Sex	Undernourished	Normal	Total	Stratum specific OR
Female	419(37.23)	556(64.99)	864(100)	1.16(0.95-1.54)
Male	281(33.88)	565(68.34)	835(100)	
Total	689(35.58)	1122(66.64)	1788(100)	

Table- Distribution of Children's nutritional status according to father's education

Nutritional status	Illiterate/Primary	Up to X std	Above X std
Undernourished	368(36.88)	517(32.68)	64(35.42)
Normal	783(73.12)	770(67.54)	176(76.78)

6. Conclusion

Malnutrition remains prevalent in developing countries. The prevalence of undernutrition is more widespread than that of overnutrition. Weight-for-age, height-for-age, and height-for-age are more accurate indicators of nutritional health in children compared to BMI. Various factors directly contribute to the poor nutritional condition of children, including their parents' low socio-economic level, limited educational background, and inadequate protein intake. Additional indirect indications of the children's nutritional status include the child's birth order within the family and the sort of school they attend. The efforts to combat malnutrition in underdeveloped countries by UNICEF should be supported, and public awareness campaigns should be intensified.

References

[1] AnurageS.,SyedE.M.Payal M.S. Bhushan K.:Nutritional status of school aged children-A scenario of Urban slums in India: Archives of public health 2012,70:8

[2] World Health Organization: Research to improve implementation and effectiveness of school health programmes. Geneva: WHO; 1996, 1, 9-15.

[3] UNICEF policy review: Strategy for improved nutrition of children and women in developing countries. UNICEF, New york: USA;1990:5-36

[4] World Health Organization Expert Committee: An estimate for the prevalence of child malnutrition in developing countries. World Health Stat Q 1985, 38:331-347.

[5] Abidoye RO, Ihebuzor NN: Assessment of nutritional status using anthropometric methods on 1-4 year old children in an urban ghetto in Lagos, Nigeria. Nutritional health 2001, 15:29-39.

[6] Raparthi, M., Dodda, S. B., & Maruthi, S. (2023). Predictive Maintenance in IoT Devices using Time Series Analysis and Deep Learning. Dandao Xuebao/Journal of Ballistics, 35(3). https://doi.org/10.52783/dxjb.v35.113

[7] Odunayo SI, Oyewole AO: Risk factors for malnutrition amongst rural Nigerian children. Asia Pacific journal. Clinical nutrition 2006, 15:491-495.

[8] Nutrition for the school aged child(2002), Nebguide services:G92:1086A

[9] World Health organization report; life in the 21st century; a vision for all. Geneva: WHO; 1998.

[10] Water low IC, Buzina R, Keller W, Lane IM, Tanner IM; The presentation and use of height and weight for comparing the nutritional status of groups of children under the age of 10 years. Bull WHO 1977,55:489-498

[11] Hassan I, Mond Abdul HA; an assessment of nutritional status of the children of government Urdu higher primary schools of Azad Nagar and its surrounding areas of Bangalore: Archives of applied science research, 2011, 3(3):167-176.

[12] Olumuyiwa S. falade, Israel Otemuyiwa, oluwemimoOluwasola, Wale Oladipo, Steve A. Adewusi. The nutritional status of pupils in a public primary school in Ile-Ife, Osun State, Nigeria; food and nutrition sciences; 2012:3(596-605).

[13] Badrialaily M.: Nutritional status and related factors among elementary school students in Banda Aceh Municipality, Nanggroe Province, Indonesia. 2008; 23 -28.

[14] Rowland M.G.M: Prevention of protein energy malnutrition; Diseases of children in the tropics and subtropics. Fourth edition, Kent, 1999: 358-366.

[15] Srivastava A. Mahmood S.E, Srivastava P.M: Nutritional status of school-age children-A scenario of urban slums in India; Archives of public health; 2012:70(8).

[16] Sebanjo O., Oshikoya K. A.,Odusanya O.O. . Njokanma O. F.: Prevalence of and Risk factors for stunting among school children and Adolescents in Abeokuta, SouthWest Nigeria; Journal Health population nutrition; 2011;4(364-370).

[17] Ojofeitimi E.O, Owolabi O.O, Aderounmu A, Esimai A.O, Alasanmi S.O: A study on under five nutritional status and its determinants in a semi-rural community of Ile-Ife, Osun State, Nigeria: Nutritional Health 2003; 17: 21-27.

[18] Hassan A., Onabanjo O.O., Oguntona C.R.B: Nutritional Assessment of school age children attending conventional primary and integrated quranic schools in Kaduna; Research journal of Medical sciences, 2012:6(4):187-192.

[19] Ahmed F. Bhuyan, A.H; Shaheen N. Baruas; Margghs, B.M and jackson A. effect of sociodemographic conditions and growth of urban school children of Bangledesh. European journal of clinical nutrition 1991;45: 327-330.

[20] Olusoga O.J, R.S Abisola, C.S Oluwakemi:Evaluation of the nutritional status of primary one pupils in Abeokuta South Local Government Area of Ogun State, Nigeria: Research journal of medical Sciences; 2008:2(2): 61-64.

[21] MedhiG.K., BaruaA. and Mahanta J.: Growth and Nutritional status of school age children (6-14years) of tea Garden Workers of Assam; journal of Human ecology; 2006:19(2):83-85.

[22] Anwar H.N, Muhammad I.Z, Hussein S.: Health screening of primary school children; a case study of district Sargodha, Pakistan.

[23] Ijarotimi O.S, Odeyemi A. O.: Prevalence of food insecurity among rural communities and its effects on nutritional status of children (8-15 years) in Ondo state, Nigeria. Journal of medicine and medical sciences; vol 3(10); 005-015, 2012.