

Influence of Maternal literacy on the Health Status of Children in Early and Late Childhood

Home Science

Riddhi Gupta

Research Scholar, Department of Home Science (Food and Nutrition), University Of Calcutta

Sarmistha Chakrabarti

Associate Professor, Department of Home Science (Food and Nutrition), University Of Calcutta.

Suniti Ghosh (Chatterji)

Associate Professor, Department of Home Science (Food and Nutrition), University Of Calcutta.

ABSTRACT

Education boosts a woman's ability to deal with the problems of the world around her including various health problems of her children. Education helps mother's learning about health and hygienic practices which is quite important in the context of child care also. The present research work on total 518 mother-child pair was aimed to study the influence of maternal literacy in determining the children's health status in early and late childhood. Present data analysis reveals that maternal literacy significantly influence the health status of under-five children. But in case of older children (i.e., >5 years age) a definite but non-significant association was found between maternal literacy and most of the indicators of child's health status. This reduced influence of maternal literacy on child's health in late childhood may be due to the intervening effect of various environmental factors. The significant association of maternal literacy with the signs of anaemia and dental caries both in early and late childhood reflects the necessity of mother's education in providing greater degree of protection to the child through proper nutrition and effective health care.

KEYWORDS:

maternal literacy, health status, children, early and late childhood

Introduction:

Female education is essential for the all-round development of the society. Female literacy is not only important for their economic autonomy and empowerment, rather it also helps them in gaining knowledge regarding health and hygiene. Hence their better understanding about health and hygienic practices are quite expected to reflect some positive impact in their child care practices and thereby strengthen their motherhood. It is commonly accepted that educated mothers are more active in implementing good health practices and have greater access to health related information. Mother's knowledge provide a greater degree of protection against infections and other communicable diseases to the child through proper nutrition and effective domestic and external health care.¹ Research evidences also showed that increase in women's education accounted for a significant reduction in child malnutrition.² Early childhood constitutes the most crucial period of life when the foundation is laid for cognitive, social, emotional, physical/ motor development and cumulative lifelong learning.³ Proper care by mothers during childhood is very much necessary in maintaining good physical health of the child. Again maintaining good physical health of children during early and late childhood is equally important as it is associated with proper mental and social development. Not only that research evidences was there showing that childhood health conditions have a lasting impact on health and socioeconomic status in adulthood also.⁴ Thus to ensure a healthy childhood, intensive care by mothers is necessary. The quality of child care provided by mothers is quite expected to get influenced by their knowledge and understanding regarding health and nutrition, which is again dependent on their educational attainment. Thus feeling the importance of maternal education in the context of child's health, the present research work was designed to study the influence of maternal literacy in determining the health status of children in early and late childhood.

Materials and Methods:

The present study was carried out in some selected rural and urban regions of West Bengal, India. Consenting mothers from different educational background and their children (within 0-12 years age)

either healthy or with any mild acute health problems were included in the study. Total 518 mother-child pair was included in the study through cluster sampling. General information including mothers' education level was collected by interviewing mothers with a pre-tested, structured interview schedule. Age of the children was verified by checking their birth records. To study the impact of maternal literacy on the health status of children; the children were divided into two groups according to age viz. ≤ 5 years (i.e. preschool age representing early childhood) and > 5 years (i.e., school going age representing late childhood). Children's health status was assessed on the basis of A) anthropometric measurements and B) clinical examinations.

A) Anthropometric Measurements:

Height (up to nearest 1 mm) and weight (up to nearest 100g) of the children were measured using standard anthropometric equipment and procedures. The nutritional status of children was assessed according to SD classification using WHO growth standards.⁵

Standard Deviation Classification

Anthropometric indices used for assessing nutritional status for under-five children (i.e. ≤ 5 years age) were Weight for Height (WHZ) and Height for Age (HAZ); whereas for above-five children (i.e., > 5 years age) Height for Age (HAZ) and Body Mass Index (BMIZ) were used. Standard Deviation classification as recommended by WHO was used in the study.⁵

B) Clinical Examinations:

Clinical assessment focuses on the nutritional status of a child through physical examination, the examination for signs and symptoms of nutrient deficiency or toxicity. In the present study all the selected children were examined for the presence or absence of any clinical signs including skin infections, conjunctival dryness, paleness of nails or conjunctiva, oral health etc.(6, 7)

Results:

Out of total 518 mothers included in the study it was found that 11.38% mothers were illiterate. As it is depicted in Figure 1 the rate of

Higher education was very low among the mothers (11.96% Graduate and 1.54% Post Graduate). Most of the mothers were educated up to the secondary level (45.55%) of school.

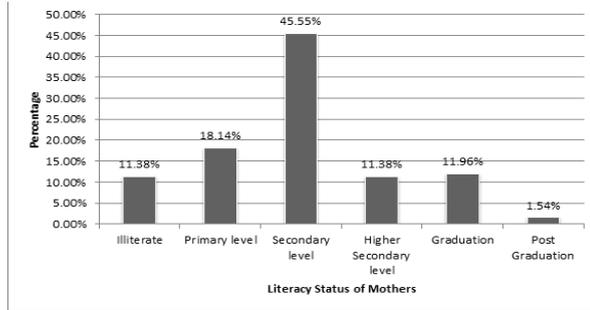


Figure 1: Distribution of mothers according to their literacy status Chi-square analysis showed that maternal literacy status was significantly associated with the nutritional status of under-five children as indicated by different anthropometric indices [viz. Height for Age (HAZ) and Weight for Height (WHZ)] (Table 1).

But a definite but non-significant association was found between the literacy of the mothers and the nutritional status of their above-five children (as indicated by HAZ and BMI). (Table 2).

Table 1: Relation between mother's literacy status and their under five children's nutritional status (as indicated by different anthropometric indices)

Nutritional Grades	Maternal Literacy Status					Total	χ ² Value	df	p-value
	Illiterate	Primary Level	Secondary Level	Higher Secondary Level	Graduate/ Post Graduate				
A] HAZ	4	8	6	0	0	18	27.10	8	0.0006
Severe Stunting	22.2	44.4	33.3	0.0	0.0	100.0			
Row% Col%	7.8	16.0	3.9	0.0	0.0	5.1			
Moderate Stunting	18	8	39	7	10	82			
Row% Col%	21.9	9.7	47.5	8.5	12.1	100.0			
Moderate Stunting	35.2	16.0	25.3	14.0	22.7	23.5			
Row% Col%	29	34	109	43	34	249			
Normal	11.6	13.6	43.7	17.2	13.6	100.0			
Row% Col%	56.8	68.0	70.7	86.0	77.2	71.3			
Total	51	50	154	50	44	349			
Row% Col%	14.6	14.3	44.1	14.3	12.6	100.0			
Col%	100.0	100.0	100.0	100.0	100.0	100.0			
B] WHZ	1	0	13	4	2	20	16.22	8	0.0392
Severe Wasting	5.0	0.0	65.0	20.0	10.0	100.0			
Row% Col%	1.9	0.0	8.4	8.0	4.5	5.7			
Moderate Wasting	13	13	30	4	4	64			
Row% Col%	20.3	20.3	46.8	6.2	6.2	100.0			
Moderate Wasting	25.4	26.0	19.4	8.0	9.0	18.3			
Row% Col%	37	37	111	42	38	265			
Row% Col%	13.9	13.9	41.8	15.8	14.3	100.0			
Normal	72.5	74.0	72.0	84.0	86.3	75.9			
Row% Col%									

Total	51	50	154	50	44	349			
Row%	14.6	14.3	44.1	14.3	12.6	100.0			
Col%	100.0	100.0	100.0	100.0	100.0	100.0			

Table 2: Relation between mother's literacy status and their above five children's nutritional status (as indicated by different anthropometric indices)

Nutritional Grades	Maternal Literacy Status					Total	χ ² Value	df	p-value
	Illiterate	Primary Level	Secondary Level	Higher Secondary Level	Graduate/ Post Graduate				
A] HAZ	1	0	2	0	0	3	13.660	8	0.091
Severe Stunting	33.3	0.0	66.7	0.0	0.0	100.0			
Row% Col%	12.5	0.0	2.4	0.0	0.0	1.8			
Moderate Stunting	1	8	10	0	0	19			
Row% Col%	5.3	42.1	52.6	0.0	0.0	100.0			
Moderate Stunting	12.5	18.2	12.2	0.0	0.0	11.2			
Normal	6	36	70	9	26	147			
Row% Col%	4.1	24.5	47.6	6.1	17.7	100.0			
Normal	75.0	81.8	85.4	100.0	100.0	87.0			
Total	8	44	82	9	26	169			
Row% Col%	4.7	26.0	48.5	5.3	15.4	100.0			
Col%	100.0	100.0	100.0	100.0	100.0	100.0			
B] BMI	1	7	6	1	4	19	10.933	12	0.534
Severe Thinness	5.2	36.8	31.5	5.2	21.0	100			
Row% Col%	12.5	15.9	7.3	11.1	15.3	11.2			
Moderate Thinness	0	13	15	1	4	33			
Row% Col%	0.0	39.3	45.4	3.0	12.1	100			
Moderate Thinness	0.0	29.5	18.2	11.1	15.3	19.5			
Normal	6	21	53	7	17	104			
Row% Col%	5.7	20.1	50.9	6.7	16.3	100.0			
Normal	75.0	47.7	64.6	77.7	65.3	61.5			
Overweight/Obese	1	3	8	0	1	13			
Row% Col%	7.6	23.0	61.5	0.0	7.6	100.0			
Overweight/Obese	12.5	6.8	9.7	0.0	3.8	7.6			
Total	8	44	82	9	26	169			
Row% Col%	4.7	26.0	48.5	5.3	15.3	100.0			
Col%	100.0	100.0	100.0	100.0	100.0	100.0			

In the present study it was found that 25.7% under-five children have the signs of nasolabial seborrhea and 23.4% children have pityriasis alba infection. Conjunctival dryness was found among only 1.7% children. Angular stomatitis was found among 9.7% children. Dental caries were prevalent among 25.5% under-five children. The problem of bleeding gums was found among 6% children. Clinical signs of anaemia were present among under-five children. As a result pale

conjunctiva and pale nails were observed in 26.6% and 23.2% children respectively. Moreover a significant association of maternal literacy was found with all of the clinical signs (indicating health status) examined in case of under-five children (Table 3).

On the other hand for above-five age group, 16.5% and 13% children were marked with the signs of nasolabial seborrhea and pityriasis alba infection respectively. Conjunctival dryness and angular stomatitis were found in only 3.5% and 1.7% children respectively. 18.9% children were marked with the problem of dental caries. Pale conjunctiva and pale nails were found among 18.3% and 11.8% children respectively. A significant association of maternal literacy was found with the signs of anaemia and dental caries only (Table 4).

Table 3: Relation between maternal literacy and their under five children's health status (as indicated by different clinical signs)

Clinical Signs	Maternal literacy status					TOTAL AL (%)	2 value	p-value
	illiterate	primary	secondary	Higher secondary	Graduate / Post Graduate			
1.SKIN a. Nasolabial Seborrhea	3	8	13	2	2	28 (16.5)	4.3388	0.3621
Yes	5	36	69	7	24	141 (83.4)		
No	1	8	11	0	2	22 (13.0)	3.0477	0.5499
b.Pityriasis alba	7	36	71	9	24	147 (86.9)		
Yes								
No								
2.EYE Conjunctival dryness	1	4	1	0	0	6 (3.5)	8.405	0.0778
Yes	7	40	81	9	26	163 (96.4)		
No								
3. LIPS Angular Stomatitis	0	2	1	0	0	3 (1.7)	2.85	0.581
Yes	8	42	81	9	26	166 (98.2)		
No								
4. ORAL HEALTH a. Dental caries	2	18	10	2	0	32 (18.9)	22.59	0.0002
Yes	6	26	72	7	26	137 (81.0)		
No	0	2	6	0	0	8 (4.7)	3.353	0.5005
b. Bleeding Gums	8	42	76	9	26	161 (95.2)		
Yes								
No								
5. ANAEMIA INDICATORS a. Pale Conjunctiva	2	19	8	2	0	31 (18.3)	28.327	< 0.0001
Yes	6	25	74	7	26	138 (81.6)		
No	5	7	5	2	1	20 (11.8)	25.49	< 0.0001
b. Pale Nails/ Pale Palms	3	37	77	7	25	149 (88.1)		
Yes								
No								

Table 4: Relation between maternal literacy and their above five children's health status (as indicated by different clinical signs)

Clinical Signs	Maternal literacy status					TOTAL (%)	2 value	p-value
	illiterate	primary	secondary	Higher secondary	Graduate / Post Graduate			
1.SKIN a. Nasolabial Seborrhea	3	8	13	2	2	28 (16.5)	4.3388	0.3621
Yes	5	36	69	7	24	141 (83.4)		
No	1	8	11	0	2	22 (13.0)	3.0477	0.5499
b.Pityriasis alba	7	36	71	9	24	147 (86.9)		
Yes								
No								
2.EYE Conjunctival dryness	1	4	1	0	0	6 (3.5)	8.405	0.0778
Yes	7	40	81	9	26	163 (96.4)		
No								
3. LIPS Angular Stomatitis	0	2	1	0	0	3 (1.7)	2.85	0.581
Yes	8	42	81	9	26	166 (98.2)		
No								
4. ORAL HEALTH a. Dental caries	2	18	10	2	0	32 (18.9)	22.59	0.0002
Yes	6	26	72	7	26	137 (81.0)		
No	0	2	6	0	0	8 (4.7)	3.353	0.5005
b. Bleeding Gums	8	42	76	9	26	161 (95.2)		
Yes								
No								
5. ANAEMIA INDICATORS a. Pale Conjunctiva	2	19	8	2	0	31 (18.3)	28.327	< 0.0001
Yes	6	25	74	7	26	138 (81.6)		
No	5	7	5	2	1	20 (11.8)	25.49	< 0.0001
b. Pale Nails/ Pale Palms	3	37	77	7	25	149 (88.1)		
Yes								
No								

Discussion:

The present data analysis reveals a significant association between maternal literacy level and the nutritional status of their children aged under-five years. The findings were supported by the previous research works. Jyothi Lakshmi,A. et al. (2003) worked on the nutritional status of rural preschool children near Mysore and found

that the linear growth of children of literate mothers was better compared to their illiterate counterparts.⁸ Saima Ali et al. (2011) also found a strong and consistent correlation between maternal education and child health.⁹ The study conducted by Kavosi et al. (2014) similarly reported a lower risk of stunting in under-six children whose mothers have university education as compared to those with diploma or lower.¹⁰ But for older children (i.e., > 5 years) the association between maternal literacy status and different anthropometric indicators of the child's nutritional status was non-significant. Previous literatures identified maternal literacy as a definite determinant of under-five children's nutritional status. But the influence of the mothers' education on their children's nutritional status was somehow reduced in case of older children (i.e., >5 years age) as compared with the younger ones (i.e., ≤ 5 years age). Lack of such an association in the older (> 5 years) study population could be explained as that for older children, other factors have a stronger influence on nutritional status than the mothers' literacy alone. Kulsum, A. et al. (2013) conducted a similar type of survey on 2-11 years children of urban slums in Mysore and concluded that such type of lack of association between maternal literacy and children's nutritional status is due to the presence of other influencing factors such as, living conditions and environmental factors.¹¹

The maternal literacy was found to be significantly associated with all the clinical signs examined for under-five children. But for older children (i.e., > 5 years) maternal literacy was found to be significantly associated with the signs of anaemia and dental caries only. Thus out of the eight clinical signs examined, dental caries and anaemia were identified as the major problems of children. 25.5% under-five and 18.9% above-five children were marked with the problem of dental caries. The prevalence was lower than that reported by Jose and Nigel (2003) who reported a caries prevalence of 44% among the preschool children from 8 to 48 months in Kerala.¹² Another study by Arangannal et al. (2016) on 6-14 years aged school going children in Chennai reported the prevalence of dental caries as 68.8%.¹³ The strong influence of maternal literacy on the prevalence of dental caries among children was supported by the previous findings of Reang et al. (2014). They concluded that mothers having high literacy possess basic knowledge of caries prevention.¹⁴ Sufiya et al. (2009) studied the effect of various maternal factors on the dental health behaviour and caries experience of children and concluded that high level of educational attainment by mother have a positive influence on the dental health practices of her pre-school children.¹⁵ Signs of pale conjunctiva and pale nails were found to be prevalent among overall 23.9% and 19.4% children respectively. That clearly indicates that anaemia was widespread among preschool children. Arlappa et al. (2010) also identified anaemia as a severe nutritional problem among rural preschool children of West Bengal.¹⁶

Conclusion:

The present study shows that maternal literacy exerts a significant influence on the nutritional status of under-five children as it is indicated by the two anthropometric indices studied (viz. HAZ and WHZ). The significant association of maternal literacy with all of the clinical signs examined also indicates a strong influence of maternal literacy in determining good health status of under-five children. But the non-significant association between maternal literacy and the indicators of children's health status (i.e., anthropometric and most of the clinical indicators) for older children (> 5 years age) indicates that the maternal influence somehow diminished to some extent in late childhood.

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