

## Association of economic status with breastfeeding rates in Northern Iran

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### Abstract

**Objective:** To assess the breast-feeding condition based on economic status among primary school children and comparison between Turkman and non-Turkman ethnic groups in northern Iran in 2010.

**Methods:** This was a descriptive, cross-sectional and retrospective research study, carried out on 6882 primary school children (4157=non-Turkman and 2725=Turkman) from 112 school of urban and villages in the north of Iran. The schools and students were chosen by multistage sampling (cluster and random sampling). Breast-feeding was categorized based on World Health Organization classification.

**Results:** Breast-feeding during the first 6 postpartum months and two postpartum years was found in 5.8 and 57.1% of children. Breast-feeding during the two postpartum years was significantly 12.5% more in Turkman ethnic group than non-Turkman ethnic group ( $P=0.001$ ) but breast-feeding only for the first 6 postpartum months was 1.9% in Turkman ethnic group less than in non-Turkman ethnic group ( $P=0.002$ ). There was a negative significant association between economic status and breast-feeding during the two postpartum years in both ethnic groups ( $P=0.001$ ) and there was more breast feeding in the first 6 postpartum months in Turkman ethnic group.

**Conclusion:** Breast-feeding rate in Turkman ethnic group is more common than non-Turkman ethnic group. There is an inverse relationship between economic status and breast-feeding duration with a considerable trend in Turkman ethnic group.

**Keywords:** Breast-feeding, Ethnicity, Economic status, Iran. (JPMA 62: 756; 2012)

### Introduction

Mother's milk contains unsaturated fatty acids that are necessary for childhood brain development<sup>1</sup> and it is able to prevent allergy and infectious disease.<sup>2</sup> Breast-feeding is the unique source of nutrition and plays an important role in the growth and development of infants.<sup>3</sup>

Iran is a Muslim country and Islam emphasises the feeding of human milk instead of animal milk.<sup>4</sup> Breast-feeding is well established in Iran, and the history can be traced back to the fourth century AH in the Canon Medicine Text book which was written by Avicenna.<sup>5</sup>

Variables that may influence breast-feeding status include: race, maternal age, maternal work, level of parents education, socio-economic status, insufficient milk supply, infant health problem, maternal obesity, smoking, parity, method of delivery, maternal interest and other related factors.<sup>6</sup>

Results of studies on the breast-feeding of children suggest that mothers who belong to the low income group stop breast-feeding earlier than those with high income.<sup>7</sup> Other factors that are also related to the duration of breast-feeding is mother's age and socioeconomic status.<sup>8</sup>

This study was conducted in Golestan province (northern Iran and south east of Caspian sea). Of 1,600,000

people, 43.9% and 56.1% are living in urban areas and villages, respectively. Agriculture is the main work in rural area and different ethnic groups such as Fars(native), Turkman and Sisstani reside in this area.<sup>9</sup>

Due to the restriction in executing epidemiological projects, no study has been conducted about the breast-feeding status in this area up till now; therefore it was necessary to design a research project about it. The main aim of this retrospective study was to assess the comparison of breast-feeding status based on economic status level among primary school children between Turkman and non-Turkman ethnic groups in northern Iran.

### Subjects and Methods

This was a descriptive, cross-sectional and retrospective study, carried out on 6882 primary school children (4157=non-Turkman and 2725=Turkman) from 112 school of urban and villages in the north of Iran. This is a multistage study and schools and students have been chosen by cluster and random sampling, respectively. The estimated sample size at the national level was based on stratification of respondents by urban/rural, educational grade, gender and ethnicity of 14 districts areas. The calculated sample sizes of 2401 respondents at least were needed for a 95% confidence.

For all children a questionnaire which contained, questions on the breast-feeding status and social-economical condition of school children specially ethnicity and family economic status was completed by mothers.

Breast-feeding was categorized based on World Health Organization definition. The World Health Organization definition of predominant breast-feeding is: "The infant's predominant source of nourishment has been breast milk. However, the infant may also have received water or water-based drinks (sweetened or flavoured water, teas, infusions, etc.); fruit juice; oral rehydration salts (ORS); drop and syrup forms of vitamins, minerals, and medicines; and folk fluids (in limited quantities).<sup>10</sup>

The ethnicity were divided into two groups: 1) Turkman: The inter marriage of this ethnic group with other ethnic group were rare therefore, this ethnic group can be recognized as pure race. 2) non-Turkman: All of ethnic groups (Except Turkman ethnic group) living in this area were included.

Economic status was categorized based on possession of 10 consumer items considered necessary for modern-day life, such as telephone, running water, gas pipeline, home ownership, coloured television, computer, video, modern refrigerator, private car and cooler. According to this list, the economic status of sample population study is as follows: low-Income  $\geq 3$ , Middle-Income = 4-6 and High-Income= 7-10.

SPSS 16.0 software was used for statistical data analysis. Chi-square test and Pearson's correlation were used for analysis and P. value less than 0.05 was considered significant. Unwilling mothers and those who did not remember the details of breast-feeding situation of their children were excluded from this study. The reliability was assessed using Cronbach's alpha coefficient and found to be 0.84.

## Results

As a whole, 1598 (23.2%), 4195 (61.0%) and 1089 (15.8%) families were of Low, Middle and High- Income, respectively. Turkman ethnic group were 4.2% more than non-Turkman ethnic group in Low-Income situation (P=0.001) (Table-1).

Breast-feeding during two postpartum years and the first 6 postpartum months was found in 57.1% and 5.8% children, respectively. Breast-feeding during two postpartum years in Turkman ethnic group was 12.5% more than non-Turkman ethnic group (P=0.001) and exclusive breast-feeding in first 6 months was 1.9% in Turkman ethnic group vs non-Turkman ethnic group with a statistical significant difference (P=0.002).

Breast-feeding during two postpartum years was inversely related with improved economic status both in two ethnic groups and (P<0.001) and overall (P<0.001). Cessation

**Table-1: Characteristics of subjects. N(%).**

Ethnic group	Economic Status			Total
	Low-Income*	Middle- Income	High- Income	
Non-Turkman	1035(24.9)	2431(58.5)	691(16.6)	4157
Turkman	563(20.7)	1764(64.7)	398(14.6)	2725
Total	1598(23.2)	4195(61.0)	1089(15.8)	6882

\* Low-Income status has been significantly shown more in Turkman ethnic group than non- Turkman ethnic group(P=0.001).

**Table-2: The comparison of breast-feeding status between two ethnics based on economic status N(%).**

Ethnic Group	Economic Status	Duration of Breast-feeding (month)				No	Total
		0-6	6-12	12-18	18-24		
Non-Turkman	Low- Income	65(6.3)	101(9.8)	253(24.4)	576(55.7)	40(3.9)	1035
	Middle- Income	155(6.4)	267(11.0)	698(28.7)	1255(51.6)	56(2.3)	2431
	High- Income	49(7.1)	99(14.3)	192(27.8)	337(48.8)	14(2.0)	691
Total		269(6.5)	467(11.2)	1143(27.3)	2168(52.2)	110(2.6)	4157
P. Value*		0.764	0.010	0.037	0.014	0.017	
Turkman	Low- Income	14(2.5)	34(6.0)	143(25.4)	367(65.2)	5(0.9)	563
	Middle- Income	69(3.9)	90(5.1)	416(23.5)	1172(66.4)	17(1.0)	1764
	High- Income	44(11.1)	47(11.8)	73(18.3)	224(56.3)	10(2.5)	398
Total		127(4.6)	171(6.3)	632(23.2)	1763(64.7)	32(1.2)	2725
P. Value*		0.001	0.001	0.031	0.001	0.0271	
Overall	Low- Income	79(4.9)	135(8.4)	396(24.8)	943(59.0)	45(2.8)	1598
	Middle- Income	224(5.3)	357(8.5)	1114(26.6)	2427(57.9)	73(1.7)	4195
	High- Income	93(8.5)	146(13.4)	265(24.3)	561(51.5)	24(2.2)	1089
Total		396(5.8)	638(9.3)	1775(25.8)	3931(57.1)	142(2.1)	6882
P. Value*		0.001	0.001	0.188	0.002	0.0341	

\* Chi-2 test trend carried out among three economic status.

of breast-feeding in first 6 postpartum months was significantly associated with improved economic status in Turkman ethnic group ( $P=0.001$ ) and with no statistical significance in non-Turkman group (Table-2).

Pearson's correlation between economic status and breast-feeding duration in non-Turkman was ( $r=-0.057$ ,  $P=0.0001$ ), in Turkman was ( $r= - 0.054$ ,  $P=0.001$ ) and overall was ( $r=-0.64$ ,  $P=0.0001$ ).

## Discussion

Our study showed that 57.1% of Iranian northern children were breast-fed during two postpartum years and it was more in Turkman ethnic group than in non-Turkman ethnic group.

Breast-feeding within two postpartum years in Olang's study<sup>11</sup> in Iran was 57% and in Bolivia<sup>12</sup> was 50%. In US, the National Immunization Survey found that 16.1% of infants were breastfed at 12 months.<sup>13</sup> Breast-feeding duration in South Asian Countries was the same. Bangladesh,<sup>14</sup> India<sup>15</sup> Pakistan<sup>16</sup> and Sri Lanka<sup>17</sup> were 28.2, 18.4, 21.8 and 23.2 months duration, respectively. Compared with the other studies, breast-feeding has been well perceived in northern Iran.

Black women less than white women were likely to initiate breast-feeding<sup>18</sup> and at 6 postpartum months, 43.2% of white women were breast-fed compared with 29.3% of African-American women.<sup>19</sup> Breast-feeding patterns among Ethiopian women has changed since they immigrated to Israel.<sup>20</sup> Forste<sup>21</sup> and Liu<sup>20</sup> reported that black women were less likely to breastfeed than non-black women. Harley<sup>22</sup> showed that breastfeeding was more in Hispanic immigrants women than in US-born women. As in other studies, ethnicity is an influencing factor for breast-feeding in our region and was perceived more in Turkman women. Turkman people have a traditional lifestyle and do not tend to change it. They marry early and are less likely to work outside home, and have more religious desires than other ethnic group. These factors can cause longer lactation period in Turkman ethnic group than other ethnics that are living in northern Iran. Veghari<sup>23</sup> reported that nutritional status in Turkman children is better than other ethnic groups in the north of Iran.

In the present study, economic status is inversely related with breast-feeding duration and it was not similar in two ethnic groups. High socioeconomic status has been associated with high breast-feeding rates in some developed countries.<sup>24</sup> Women from low-income families are less likely to breastfeed for a number of reasons, including less flexibility with working arrangements, less family support for breast-feeding, less ability to seek help with breast-feeding problems and concerns about breast-feeding in public.<sup>7</sup> These reasons could be the cause of decline in the breast-feeding rate in High-Income people in the study population and further

studies in these areas are required.

A study in Australia<sup>25</sup> has shown that cultural status more than other factors can influence breast-feeding practice. As in this study, the role of economic status in breastfeeding duration between two ethnic groups in our study is not equal. So, it seems that the role of ethnic-specific behaviours strongly affects breast-feeding status in Turkman ethnic group. This finding showed that the role of economic status on the breast-feeding duration is not similar worldwide. Thereby, ethnicity and cultural specialty can be more effective in breast-feeding duration than economic status.

In this study we have highlighted the breast-feeding status and between two ethnic groups in northern Iran however other related factors such as rooming in, baby friendly hospital, delivery status and residential area were not included in our study, which are the limitations.

## Conclusion

Breast-feeding rate is not appropriate in northern Iran. Turkman ethnic group is likely to continue it more than non-Turkman ethnic group. Economic status has an inverse relationship with breast-feeding duration and it was more in Turkman ethnic group.

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