

## Relationships of Hofstede's Cultural Dimensions and Lactation Patterns in Lactating Mothers

Elham Alidadi- Shamsabadi <sup>1</sup>, \*Mitra Savabi-Esfahani <sup>2</sup>, Ali Hashemianfar <sup>3</sup>

<sup>1</sup>Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran.

<sup>2</sup>Assistant Professor, Department of Midwifery and Reproductive Health, Nursing and Midwifery Care Research Center, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran.

<sup>3</sup>Associate Professor, Department of Social Sciences, University of Isfahan, Isfahan, Iran.

### Abstract

**Background:** Exclusive breastfeeding is the best pattern for feeding infants in the first 6 months of life. On the other hand, lactation patterns may be influenced by cultural factors. The present study aimed to determine relationships of Hofstede's cultural dimensions and lactation patterns in lactating mother.

**Materials and Methods:** The present cross-sectional study was conducted on 452 mothers with infants 6 months old and younger in 2018. Eight centers were selected from all health centers in Isfahan, Iran through cluster random sampling. The samples were lactating mothers who referred to health centers for receiving self and infant care. Data was collected using two questionnaires. The first questionnaire examined personal and fertility characteristics and lactation patterns. The second questionnaire was a self-administered structured questionnaire for cultural dimensions. Content validity index and relative content validity coefficient were respectively 0.80 and 0.70 for the cultural dimension questionnaire. Data were analyzed using SPSS software version 18.0.

**Results:** The majority of mothers (64.4%, n=291) had exclusive breastfeeding. In the masculinity-femininity dimension, the mean score of exclusive breastfeeding pattern was higher than the non-exclusive breastfeeding ( $3 \pm 0.48$ ,  $2.48 \pm 0.50$ ) and there were significant statistical differences between exclusive and non-exclusive breastfeeding groups ( $p = 0.03$ ). In other cultural dimensions, despite there being a difference in mean of the dimensions in exclusive breastfeeding and non-exclusive breastfeeding groups, it was not statistically significant.

**Conclusion:** Masculinity-femininity as a cultural dimension was associated with lactation patterns, so that mothers with greater orientation towards masculinity had higher focus on gender roles of a woman such as breastfeeding and they had greater exclusive breastfeeding. But others dimensions were not associated with lactation patterns.

**Key Words:** Cultural Dimensions, Lactation, Patterns, Mother.

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### \*Corresponding Author:

Dr. Mitra Savabi-Esfahani, Postal address: Faculty of Nursing & Midwifery, Isfahan University of Medical Sciences, Hezar Jerib STR, Isfahan, Iran. Po. box: 81746-73461. Fax: +983136699398

Email: [M\\_savabi@nm.mui.ac.ir](mailto:M_savabi@nm.mui.ac.ir) AND [Msavabi@yahoo.com](mailto:Msavabi@yahoo.com)

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## 1- INTRODUCTION

Exclusive breastfeeding affects different dimensions of maternal and infant health (1). In addition to its short and long-term benefits for mothers and infants (2-4), it also has significant economic benefits for the family and society (5). On the other hand, breastfeeding improvement around the world can save the lives of more than 820,000 children under the age of 5 as most of them (87%) are infants less than 6 months of age (3). The World Health Organization (WHO) has recommended the exclusive breastfeeding up to six months of age and its continuation with supplements until two years of age (6). The organization also suggests increasing exclusive breastfeeding by 50% by 2025.

On the other hand, the organization recommends an increase of at least 1.2% or more per year for countries where exclusive breastfeeding rates are currently around 50% or close to 50% (7). Despite the above cases, exclusive breastfeeding rates are still low in many countries (8), so that results of studies indicate that exclusive breastfeeding is 41% in the world (9). On the other hand, some studies have mentioned a decline in breastfeeding rates in six months after delivery compared to immediately after delivery (10, 11).

According to the results noted by Kelishadi et al. (2016) the exclusive breastfeeding rate was 43.07% in Isfahan province, Iran (12). Published statistics indicate different rates of breastfeeding not only across different countries, but also between cultures of a country (13). Findings of studies indicate that breastfeeding can be influenced by various factors such as individual, psych-social, and cultural factors (14-16). Despite the fact that effects of some of these factors, including individual factors on breast feeding, have frequently been investigated, factors related to culture have been less examined (13). In this regard, Dornan et al.

considered the necessity of identifying cultural elements and their functions in the lactation behavior (17). Despite considering culture as a key component of breastfeeding (18), cultural dimensions have been less addressed as essential components of culture (19). Cultural dimensions have been discussed by a considerable number of social scientists in the past few decades, but among different cultural models, the Hofstede's model has been considered as the most comprehensive and powerful model (20).

Hofstede's cultural dimensions model pictures the impact of culture in society on values of its members and also describes relationships of these values and behavior (21). Six dimensions of this model include power distance, individualism vs. collectivism, masculinity vs. femininity, uncertainty avoidance, long-term vs. short-term orientation, and indulgence vs. model. According to the Hofstede's definition, the power distance means that people with less power accept the inequality in power and consider it as a common issue. Higher scores represent a more rigid and formal hierarchy in which subordinates are less involved in the decision-making process. Individualism-collectivism refers to the individual degree of adaptation to a group. A higher score of individualism indicates that relationships of individuals have decreased and individual interests have been preferred to group interests.

Masculinity-femininity indicates the differentiation of gender roles between men and women. The higher score indicates the masculinity. In these cultures, gender roles are clearly distinct between two sexes; and men are pretenders, ambitious and strict, but women are modest, kind and caring for their children (22). The uncertainty avoidance deals with the social tolerance for uncertainty and ambiguity. A higher score indicates that people feel uncomfortable in unknown and

unpredictable situations. Long term- short term orientation indicates that people's efforts focus on the past, present, or future. A higher score indicates a long-term orientation with a future orientation. Long-term orientation values include thrift, stability, and perseverance. Indulgence is defined as the polar opposite of restraint, the tendency to accept human natural desires related to enjoying life, spending money and indulging in leisure activities with friends or alone. However, restraint reflects a belief that such satisfying activities should be constrained and adjusted by strict social norms. In this dimension, a higher score indicates the indulgence (23).

Findings of studies indicate that Hofstede's cultural dimensions are associated with some kinds of health behavior. According to research results, the individualism-collectivism are associated with attitude to fertility control and its behavior (24), alcohol abuse (25), and fertility intention (26). On the other hand, findings of other studies indicate that "uncertainty avoidance" and "power distance" are related to health behavior such as health self-assessment (27), taking antibiotics (22) and blood donation (28).

In the field of breastfeeding as a health behavior (29), some reports suggest that breastfeeding may be affected by certain cultural dimensions, such as masculinity and femininity (30). Despite a great number of studies and the implementation of many programs (such as flexible programs for working mothers, maternal and child friendly hospitals) to encourage and support exclusive breastfeeding (31, 32), Iran has not yet achieved recommended rates by the World Health Organization for it (10). As breastfeeding is an important component of primary care and plays a major role in the provision of infants' health, there is a need for examination of cultural factors that may affect breastfeeding. In this regard,

Salarkia et al. conducted a qualitative research on culture and lactation. They found that family culture had an impact on child health and nutrition (33). On the other hand, Elahidoust et al. pointed out that individual, socio-economic and cultural factors such as public and family culture affected breastfeeding (34). However, none of the studies used Hofstede's cultural dimensions model to define culture, and they used culture as a general term; hence, the present study aimed to investigate relationships of Hofstede's cultural dimensions and lactation patterns in lactating mothers.

## **2- MATERIALS AND METHODS**

### **2-1. Study design and population**

This cross-sectional study was conducted on 452 lactating mothers who referred to comprehensive health centers of Isfahan, Iran, from November to February 2018.

### **2-2. Methods**

According to cluster random sampling, eight health centers were selected from all comprehensive health centers in Isfahan city. The health centers were located in different regions of the city. The samples were lactating mothers who referred to comprehensive health centers for receiving self and infant care. Lactating mothers were selected from each health center proportionate to the population of them. In this study the sample size was concluded using  $n = z^2 \cdot p (1-p) / d^2$ . We assumed Z value for confidence interval of 95% = 1.96,  $p = 0.5$  and  $d = 0.05$ . In addition, nonresponse was considered 20%. The final sample size was determined to be 480. Eventually, 28 individuals, and 452 persons entered the study.

### **2-3. Measuring tools**

Data was collected using two questionnaires. The first questionnaire examined personal and fertility

characteristics (maternal age, type of delivery, breastfeeding history, education level, employment status), and lactation patterns. In the present study, lactation patterns refer to the exclusive and non-exclusive breastfeeding. Non-exclusive breastfeeding included formula feeding and co-feeding (formula feeding plus supplementary feeding, breastfeeding plus supplementary feeding, breastfeeding plus formula feeding plus supplementary feeding) (35).

The second questionnaire was a self-administered structured questionnaire for cultural dimensions with 34 items. The questionnaire examined six dimensions, namely power distance (n=6), individualism-collectivism (n=7), masculinity-femininity (n= 6), uncertainty avoidance (n=5), long-term- short-term orientation (n=5), and indulgence-restraint (n=4). A five-point Likert scale ranging from strongly agree (5) to strongly disagree (1) was used to answer cultural dimension questions. In order to interpret scores, if mean score of a dimension was greater than 3, it indicated the higher power distance, masculinity, individualism, high uncertainty avoidance, long-term orientation, and indulgence.

If the score was less than 3, it indicated the lower power distance, femininity, collectivism, lower uncertainty avoidance, short-term orientation, and restraint. On the other hand, the number 3 indicated the balance between two states. Questionnaires were completed by participants in each center. Participation in the present study was based on written informed consent. Sampling continued until the completion of number of samples.

#### **2-4. Measuring tool**

The cultural dimensions questionnaire was designed based on a review of related studies and questionnaires. Then the validity of questionnaire was confirmed by 20 faculty members who were specialists

in sociology, psychology, reproductive health, and midwifery. Content validity index (CVI), and relative content validity coefficient (CVR) were respectively 0.80 and 0.70 for the cultural dimension questionnaire. Furthermore, the reliability of questionnaire was assessed by Cronbach's alpha coefficient, and it was 0.8, 0.7, 0.85, 0.89, 0.79, and 0.75 for dimensions, namely power distance, individualism-collectivism, masculinity-femininity, uncertainty avoidance, long term-short term orientation, and indulgence-restraint.

#### **2-5. Ethical consideration**

The present study was approved by the Ethics Committee of Isfahan University of Medical Sciences with a number of 397402. Participants were assured of the confidentiality of their information. Their participation was also voluntary and with the written informed consent.

#### **2-6. Inclusion and exclusion criteria**

Inclusion criteria of the study were as follows: 18-45 year-old mothers with 6 month-old and younger infants, singleton pregnancy, full term, lack of child adoption, and lack of maternal or infant illness as an obstacle to breastfeeding.

#### **2-5. Data Analyses**

Data was analyzed using SPSS software version 18.0 at a significance level of less than 0.05. Frequency distribution, mean and standard deviation as well as Eta, Phi and Cramer's coefficients were considered for the analysis. Independent t-test was also used to examine relationships of the independent variable (cultural dimensions) and dependent variables (lactation patterns). The Kolmogorov- Smirnov test was used to check normal distribution.

### **3- RESULTS**

Data were collected from 452 mothers with a response rate of 94.16%. The mean age of mothers was  $31.09 \pm 4.65$  years old.

Most of the studied participants had cesarean delivery (60.8%, n=275), and breastfeeding experience (53.5%, n=242). Furthermore, 61.9% (n=280) of studied participants had academic education and

81% (n=266) were housewives. Moreover, the results of the distribution of lactation patterns showed majority of women (64.4%, n=291) had exclusive breastfeeding (**Table. 1**).

**Table-1:** Frequency distribution of demographic and fertility information and lactation pattern of the participants (n=452).

Variables	Number (%)
Type of Delivery	
Vaginal	177(39.2)
Caesarean	275(60.8)
Breastfeeding experience	
Yes	242(53.5)
No	210(46.5)
Education	
Primary	7(1.5)
High school	165(36.5)
University	280(61.9)
Employment	
Yes	86 (19)
No	266 (81)
Lactation Patterns	
Exclusive breastfeeding	291 (64.4)
Non Exclusive breastfeeding	161 (35.6)
- Formula feeding	15 (3.3)
- Co-feeding	146 (32.3)

The results of Eta coefficient indicated that there was no significant relationship between maternal age and lactation patterns. Concerning maternal education, results of Cramer's coefficient indicated that there were statistical significant relationships between maternal education and lactation patterns ( $p= 0.024$ ,  $v=0.05$ ). Moreover, results of Phi coefficient indicated that there was no significant relationship between breastfeeding history, maternal job, and lactation patterns, while there was a statistical significant relationship between normal vaginal delivery and exclusive feeding pattern ( $p= 0.043$ ,  $\phi= 0.09$ ).

According to results of independent t-test between cultural dimensions and lactation patterns, despite different mean scores of power distance, individualism-collectivism, uncertainty avoidance, long-term and short-term orientation, and indulgence-restraint in the exclusive and non-exclusive breastfeeding patterns, the differences were not statistically significant; however, mean scores of masculinity-femininity in the exclusive breastfeeding pattern was greater than the non-exclusive breastfeeding pattern ( $3\pm 0.48$ , and  $2.90\pm 0.50$ , mean total: 2.96), and the difference was statistically significant ( $p = 0.03$ ) (**Table. 2**).

**Table-2:** Mean of Cultural Dimensions in Lactation Patterns.

Cultural Dimensions	Lactation Patterns				t- test	P-value	Total score (Mean)
	Exclusive breastfeeding		Non-exclusive breastfeeding				
	Mean	SD	Mean	SD			
PD	2.80	0.44	2.74	0.43	1.35	0.178	2.78
IC	2.07	0.47	2.16	0.47	-1.83	0.068	2.10
MF	3	0.48	2.90	0.50	2.11	0.036	2.97
UA	3.55	0.46	3.60	0.49	-1.25	0.213	3.57
LSO	3.49	0.42	3.52	0.41	-0.75	0.453	3.50
IR	2.54	0.42	2.53	0.47	-0.15	0.882	2.54

PD: Power Distance, IC: Individualism vs. collectivism, MF: Masculinity vs. Femininity, UA: Uncertainty Avoidance.

#### 4- DISCUSSION

The present study aimed to determine relationships of Hofstede's cultural dimensions and lactation patterns in lactating mothers. Results of the present study indicated that there was a statistical significant relationship between masculinity-femininity dimension and lactation patterns, so that women with higher scores in this dimension were more likely to have exclusive breastfeeding. In other cultural dimensions, despite a difference in mean of the dimensions in exclusive breastfeeding and non-exclusive breastfeeding groups, it was not statistically significant. In other words, women who breastfed, were more oriented to masculinity compared to other patterns. These results are in line with a study by Borg (2014) that reported health behavior such as infection control and prevention was higher in societies with higher scores of masculinity-femininity dimension; and there was a significant correlation between them (36). In this regard, Hofstede et al., argues that, in cultures which are oriented toward masculinity, gender roles are clearly distinct between men and women. Men tend to focus on male gender roles (such as family breadwinners, earning money), while women focus on female gender roles (such as childcare). In fact, men have masculine behavior, and women have feminine behavior (23). Therefore,

mothers, who are more oriented toward masculinity, seem to focus more on women's gender roles such as breastfeeding, which is a kind of childcare that increases rate of exclusive breastfeeding. In this regard, studies reported that women, who have a more traditional attitude to gender roles, breastfed their infants longer (37-39). In societies with traditional gender roles, it is expected that men are breadwinners and family supporters; and women are responsible for housekeeping and child care (40, 41). On the other hand, Isabella and Isabella stated that success in breastfeeding helped mothers to be more satisfied with their maternal roles, so that the success in breastfeeding is understood as a sign of women's ability to be mothers and accept their gender roles (42). In the individualism -collectivism dimension, results of the present study indicated that despite the higher mean of this dimension in those with exclusive breastfeeding than those who had non-exclusive breastfeeding, the difference was not statistically significant. The results were consistent with a study by Tracy (2012). The research results indicated that lactating mothers had higher scores of collectivism scale than those with formula feeding, but this difference was not statistically significant. On the other hand, researchers of this study reported that

countries such as Indonesia and Pakistan had high rates of breastfeeding (95% and 94%, respectively) and were considered as collectivist countries (43). Therefore, it seems that the more collectivist people are, the more attention they pay to family values and loyalty, and they prefer family interest to self-interest (23). Therefore, this issue may lead to high rate of exclusive breastfeeding. In the uncertainty avoidance dimension, results of the present study indicated that there was no significant relationship between uncertainty avoidance and lactation pattern, while Mackenbach reported that uncertainty avoidance scores were associated with breastfeeding (29). Despite the fact that results of the present study found no significant relationship between lactation patterns and uncertainty avoidance dimension, it seems that higher uncertainty avoidance scores in mothers, who had non-exclusive breastfeeding, were due to maternal uncertainty about sufficiency of breastfeeding for full growth of their infants.

To resolve this uncertainty and anxiety, mothers have added formula feeding or supplementary food or both to their breastfeeding. An important reason for reducing exclusive breastfeeding rates has been the public and caregivers' opinion about the inadequacy of exclusive breastfeeding for infants less than 6 months of age leading to the use of other lactation patterns such as formula feeding or co-feeding (7). In the power distance dimension, results of the present study showed no significant relationship between lactation patterns and this dimension. In this regard, Mackenbach reported a significant inverse relationship between power distance dimension and breastfeeding (29). The difference between results of the present study and Mackenbach's research may be due to the fact that Mackenbach's research was based on conducted studies in European

countries, while the present study was conducted in Iran as a developing country. However, results of this study about dimensions of long-term and short-term orientation and indulgence-restraint indicated that there was no significant relationship between lactation patterns and these dimensions. However, results of studied dimensions in the present study indicated that mothers had long-term orientation and restraint. According to study of Hofstede et al., cultures with a long-term orientation are more focused on reinforcing values towards future rewards, especially endurance and sustainability. On the other hand, public orientation towards restraint indicates the existence of strict norms in society. There is a feeling that satisfying activities should be regulated by social norms (23).

Results of the present study indicated that exclusive breastfeeding was also associated with some maternal individual and fertility factors such as education and type of delivery. In this regard, results of a study by Al-Sahab et al., indicated that maternal higher education had a positive effect on exclusive breastfeeding (44). Furthermore, Zanardo et al., reported that the emergency and elective cesarean deliveries were similarly associated with reduced rates of exclusive breastfeeding (45). Totally, it seems that in order to prevent early discontinuation of exclusive breastfeeding, breastfeeding mothers should be consulted and educated not only on their individual characteristics and fertility, but also on the cultural aspects of these mothers.

#### **4-1. Study Limitations**

The present study had some limitations: first, the non-exclusive breastfeeding group included the use of breastfeeding with supplementary food. Therefore, it might affect results of the present study. Second, the present cross-sectional study was conducted in comprehensive health centers; hence, the number of mothers who

had formula feeding, were lower in the non-exclusive breastfeeding group. Therefore, it is suggested conducting a case-control study with exclusive breastfeeding and formula feeding of infants. In addition, most studies on Hofstede's cultural dimensions model have emphasized studies on organizations (46, 47), and there are few studies on Hofstede's cultural dimensions and health behavior, especially long-term- short-term orientation and indulgence-restraint dimensions. Therefore, further research on this issue is suggested.

## 5- CONCLUSION

Masculinity-femininity as a cultural dimension was associated with lactation patterns, so that mothers with greater orientation towards masculinity had higher focus on gender roles of a woman such as breastfeeding and they had greater exclusive breastfeeding. But other cultural dimensions were not associated with lactation patterns.

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## 7- CONFLICT OF INTERESTL: None.

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