

Relationships of Cultural Dimensions and Lactation Patterns

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Abstract

Background Proper nutrition is essential for infant growth and health. 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 cultural dimensions and lactation patterns.

Methods The present cross-sectional study was conducted on 452 mothers with 6-month and younger infants. Hofstede's cultural dimensions, Power Distance, Individualism vs. collectivism, Masculinity vs. Femininity, Uncertainty Avoidance, Long-Term vs. Short-Term Orientation, and Indulgence vs. Restraint were assessed using a self-administered structured questionnaire. Data was analyzed using descriptive and analytical tests (independent t-test, Eta, phi and Cramer coefficients) and SPSS 18 at a significance level of less than 0.05.

Results In the masculinity-femininity dimension, the mean score of exclusive breastfeeding pattern was higher than the non-exclusive breastfeeding (3 ± 0.48 , 2.48 ± 0.50) and there were statistical significant differences between groups ($P = 0.03$). However, despite different mean scores of power distance, individualism-collectivism, uncertainty avoidance, long term- short term orientation, indulgence- restraint in different breastfeeding patterns, the differences were not statistically significant.

Conclusions 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. Therefore, some cultural dimensions should be taken into consideration in training and counseling for maternal breastfeeding.

Background

Exclusive breastfeeding affects different dimensions of maternal and infant health¹. In addition to its short and long-term benefits for mothers and infants²⁻⁴, it also has significant economic benefits for the family and society⁵. On the other hand, breastfeeding improvement around the world can save lives of more than 820,000 children under the age of 5 as most of them (87%) are infants less than 6 months of age³. 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 age⁶. The organization also suggests increasing the 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 countries⁸, so that results of studies indicate that exclusive breastfeeding is 41% in the world⁹. 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, mental-social, and cultural factors ¹⁴⁻¹⁶. Despite the fact that effects of some of these factors, including individual factors on breast feeding, have been frequently investigated, factors related to culture have been less examined ¹³. Results of a research by Castilho et al. indicated that breastfeeding was affected by cultural values, beliefs, and customs, leading to changes in breastfeeding ¹⁷. On the other hand, breastfeeding as a behavior can also be influenced by cultures of surroundings such as family, workplace and geographical region ^{18,19}. In this regard, Dornan considered the necessity of identifying cultural elements and their functions in the lactation behavior ²⁰. Despite considering culture as a key component of breastfeeding ²¹, cultural dimensions have been less addressed as essential components of culture ²². Cultural dimensions have been discussed by a large 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 ²³. 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 ²⁴. 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 ²⁵. 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 present, past, 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 ²⁶.

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 behavior²⁷, alcohol abuse²⁸, and fertility intention²⁹. On the other hand, findings of other studies indicate that “uncertainty avoidance” and “power distance” are related to health behavior such as health self-assessment³⁰, taking antibiotics²⁵ and blood donation³¹. In the field of breastfeeding as a health behavior³², some reports suggest that breastfeeding may be affected by certain cultural dimensions, such as masculinity and femininity³³.

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 the exclusive breastfeeding^{34,35}, Iran has not yet achieved recommended rates by the World Health Organization for the exclusive breastfeeding¹⁰. 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 the children health and nutrition³⁶. On the other hand, Elahidoust et al. pointed out that individual, socio-economic and cultural factors such as public and family culture affected breastfeeding³⁷. However, none of 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 between Hofstede's cultural dimensions and types of lactation patterns in lactating mothers.

Methods

The present cross-sectional study was conducted in 2018. The samples were 452 mothers who referred to comprehensive health centers of Isfahan, Iran, for their receiving self and infant care. Inclusion criteria of study were as follows: 18–45 year-old mothers with 6-month and younger infants, singleton infant, term and birth weight of 2500 –4000 g, lack of infant adoption, lack of maternal or infant illness as an obstacle to breastfeeding. The sample size was calculated according to Cochran's formula. For sampling, 8 centers were first selected from all Isfahan comprehensive health centers using random number table, and then random sampling was used for weekly referral to each center. Questionnaires were completed by research units in each center. Participation in the present study was based on written informed consent. Sampling continued until the completion of number of samples. Data was collected using two questionnaires. The first questionnaire examined personal and fertility characteristics (maternal age, type of delivery, lactation history, education level, employment status) and type of lactation. In the present study, breastfeeding pattern refers to the exclusive and non-exclusive breastfeeding. Non- exclusive breastfeeding included formula feeding and co-feeding (formula feeding + supplementary feeding, breastfeeding + supplementary feeding, breastfeeding + formula feeding + supplementary feeding). The second questionnaire was a self-administered structured questionnaire for cultural dimensions with 34 questions. 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. First, the questionnaire was

designed based on a review of related studies and questionnaires, and 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.

Data analysis

Data was analyzed using SPSS 18 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).

Results

The mean age of mothers was 31.09 ± 4.65 . Most of studied participants had cesarean delivery (60.8%) and breastfeeding experience (53.5%). Furthermore, 61.9% of studied participants had academic education and 80.8% were housewives (Table 1). Moreover, the results of the distribution of lactation patterns showed majority of women (64.4%) had exclusive breastfeeding (Table 2).

In order to investigate relationships of lactation patterns and personal characteristics with fertility, 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 (Table 2); however, mean scores of masculinity-femininity in the exclusive breastfeeding pattern was greater than the non-exclusive breastfeeding pattern (3 ± 0.48 , and 2.90 ± 0.50) and the difference was statistically significant ($P = 0.03$).

Discussion

According to the investigated relationships of cultural dimensions of lactating mothers and lactation patterns, 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 words, women had breastfeeding, were more oriented to masculinity compared to other patterns. These results are in line with a study by Berg et al. (2014) who reported that 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 them³⁸. In this regard, Hofstede argues that 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 behavior²⁶.

Therefore, mothers, who are more oriented toward masculinity, seem to focus more on female 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 longer³⁹⁻⁴¹. 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^{42, 43}.

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 mothers' ability to be mothers and accept their gender roles⁴⁴.

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 et al. (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 countries⁴⁵.

Therefore, it seems that the more people are collectivist, the more they pay attention to family value and loyalty, and prefer family interest to self-interest²⁶. 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 breastfeeding³².

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 ³². 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 Hofstede's studies, 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 ²⁶.

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 (46). Furthermore, Zanardo et al. reported that the emergency and elective cesarean delivery was similarly associated with reduced rates of exclusive breastfeeding ⁴⁷.

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, number of mothers who had formula feeding, was 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 ^{48, 49} 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.

Conclusions

In order to prevent the early discontinuation of exclusive breastfeeding, it is important to perform proper follow-up and identification of effective factors. In this regard, it seems that not only lactating mothers' individual characteristics and fertility should be taken into consideration in the counseling and education, but their cultural dimensions should be also considered.

Abbreviations

WHO: World Health Organization; PD: power distance; IC: individualism-collectivism; MF: Masculinity-femininity; UA: uncertainty avoidance; LSO: long term- short term orientation; IR: indulgence- restraint.

Declarations

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Authors' contributions

EAS, MSE and AH were involved in the study design. EAS and MSE collected all data and performed all of the analyses for the manuscript. MSE, EAS and AH contributed to writing a first draft of manuscript and revising it. All authors read and approved the final manuscript.

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Availability of data and materials

The datasets generated during the current study are available from the corresponding author on reasonable request.

Ethics approval and consent to participate

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.

Consent for publication

Not Applicable.

Competing interests

The authors declare that they have no competing interests.

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Tables

Table 1: Demographic and fertility information of the participants

N (%)	Variables
	Type of Delivery
177(39.2)	Vaginal
275(60.8)	Caesarean
	Breastfeeding experience
242(53.5)	Yes
210(46.5)	No
	Education
7(1.5)	Primary
165(36.5)	High school
280(61.9)	University
	Employment
86 (19)	Yes
266 (81)	No

Table2: Frequency distribution of Lactation Patterns

N (%)	Lactation Patterns
291 (64.4)	Exclusive breastfeeding
	Non Exclusive breastfeeding
15 (3.3)	-Formula feeding
146 (32.3)	-Co-feeding

Table 3: Mean and standard division (SD) of Cultural Dimensions in Lactation Patterns

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