



Quality of Life Predictors in Breastfeeding Mothers Referred to Health Centers in Iran

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Abstract

Objectives: Considering the importance of breastfeeding and positive role of the quality of life (QoL) of mothers in it, we intended to investigate QoL predictors.

Materials and Methods: This cross-sectional study was conducted on 547 eligible breastfeeding mothers with infants, aged between 2 and 6 months, referred to health centers in Falavarjan, a city in Iran. Participants were selected randomly. The socio-demographic questionnaire and QOL Inventory of the World Health Organization (WHO) were completed through interview. The multivariate linear regression analysis was carried out to investigate the relationship of QoL with socio-demographic characteristics.

Results: The mean score (standard deviation) of QoL was 67.6 (13.7) from a range between 0 and 100. According to the multivariate linear regression analysis, the variables of mother's age, spouse's age and job, economic status, gestational age at delivery, gravidity, tendency towards pregnancy, breastfeeding history, and breastfeeding training had relationship with QoL.

Conclusion: Considering that the effects of socio-demographic factors on QOL in breastfeeding mothers can be moderated, it seems that the QOL of such mothers can be improved through extensive planning and supportive strategies by family and society.

Keywords: Breastfeeding, Quality of life, Demographic factors

Introduction

Quality of life (QoL) is a multidimensional and complex concept, and also a comprehensive and flexible process that encompasses all aspects of people's life. It not only meets essential needs, but also includes factors that cause self-actualization (1,2). In other words, QoL originates from people's satisfaction or dissatisfaction with different aspects of life, which are important to them. It includes health, occupational, economic, psychological-mental, and family areas, and is an important criterion for measuring health care quality (3).

The significance of breastfeeding is to the extent that it has been extensively highlighted in Islam (4). Breast milk provides all energy and nutrients that the infant needs for the first 6 months of life (5). Breastfeeding protects the infant from respiratory diseases, allergies, gastroenteritis and malnutrition (6). It also decreases the risk of overweight and obesity, and associated complications during childhood and adolescence (7). Moreover, breastfeeding decreases the risk of breast and ovarian cancers in mothers, facilitates postpartum weight loss, and controls maternal bleeding after delivery (8). Unfortunately, despite these advantages, only 41.3% of mothers continue breastfeeding for up to one year. On the other hand, 9.7% of mothers do not breastfeed at all (9).

Successful breastfeeding depends on physiological and psychological factors (10). Since QoL includes physical

and psychological health factors, social relationship and the living conditions, it may affect breastfeeding. Zubaran and Foresti in a study in the southern part of Brazil also reported this relationship (11). In a study, Chen et al compared the relationship of health with QoL in mothers, who adopted different breastfeeding patterns, and showed that mothers who continued breastfeeding for 6 months or more obtained significantly higher QoL score (12). Moreover, a study in Iran by Alijanpoor and Bahadoran showed that QoL in breastfeeding mothers was higher than in non-breastfeeding mothers (13).

Regarding the importance of QoL in breastfeeding, we explored valid scientific databases. Few studies have been done on QoL predictors during breastfeeding (13), so we intended to assess the socio-demographic predictors of QoL in breastfeeding mothers. On the other hand, as midwives, who are responsible for providing breastfeeding healthcare and counseling (14), we aimed to improve health and QoL of mothers, as well as breastfeeding rate through extensive planning and supportive strategies by family and society.

Materials and Methods

Study Design and Participants

This cross-sectional study was conducted from June to November 2015 on 547 breastfeeding mothers in the health centers in Falavarjan, a city in Isfahan province, Iran.

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The inclusion criteria included the following: mothers with 2- to 6-month-old infants, mothers with infants born at term in the gestational age, lack of any disorder in the infant's mouth or tongue, which could influence his/her feeding from mother's breast (such as glossitis, short frenulum and cleft palate), lack of neonatal hospitalization during infancy, lack of distance between the mother and neonate in the early days after birth, lack of self-reported maternal mental disorders requiring treatment, Iranian nationality and having a phone number. The exclusion criteria also included the following: having breastfeeding contraindications such as drug and alcohol abuse, having galactosemic infants, women with HIV, women with active untreated tuberculosis, women receiving breast cancer treatment, women with hepatitis B and non-vaccinated infants and women with breast herpes. In addition, women who were not willing to participate in this research were excluded.

According to the findings reported by Alijanpoor and Bahadoran and considering the following indices, the sample size was calculated to be 496 with mean = 82.1; standard deviation = 13.1; CI = 95%; power = 90%; and precision (d) = 0.02 (around the mean value). Considering a possible loss of 10%, the final sample size was estimated to be 547.

Sampling

The sampling was performed in health centers in Falavarjan. This city embraces 12 urban health centers, and samples were collected from these health centers. The mothers had files in health centers. To carry out the sampling, first a list of breastfeeding women with 2 to 6-month-old infants, who met the inclusion criteria, was extracted from the files in health centers. The women were listed by numbers and samples were selected randomly by Randomizer software. The samples were invited to attend the briefing session through phone calls. The written informed consent was obtained from women, who were willing to take part in this research after participating in the briefing session and receiving explanations about the research objectives and methods.

Data Collection Tools

Data were collected using the following 2 questionnaires: the socio-demographic characteristics questionnaire and the World Health Organization's Quality of Life scale (WHOQoL-BREF). The questionnaires were completed through interview.

The socio-demographic characteristics questionnaire included 22 questions about the age, job, education, and obstetric and breastfeeding characteristics.

The WHOQoL-BREF, which is used to assess QoL contains 24 questions covering the following 4 dimensions: physical health (questions No. 3, 4, 10, 15, 16, 17, 18), psychological health (questions No. 5, 6, 7, 11, 19, 26), social relations (questions No. 20, 21, 22),

and living environment (questions No. 8, 9, 12, 13, 14, 23, 24, 25). There are also 2 questions (No. 1,2) that are not associated with these dimensions. The score of each statement varies between 1 and 5. One refers to "never" and five refers to "completely satisfied". Questions No. 3 and 4 are scored in reverse. The scores range from 0 to 100 for this questionnaire. Reliability and validity of this scale were also assessed in 2007 by Nejat et al. In this research, reliability of the scale was confirmed for all dimensions of QoL with Cronbach α coefficient of over 0.7.

Data Analysis

Statistical analysis was performed by SPSS version 21.0. Descriptive statistics including frequency, percent, mean and standard deviation were used to describe QoL. To analyze the relationship of QoL with each socio-demographic factor, bivariate statistical tests, including independent *t* test and one-way analysis of variance (ANOVA) were used. Those socio-demographic variables that had relationship with QoL with $P < 0.2$ were included in the multivariate linear regression model with a backward strategy. Before the conduction of multivariate analysis, the regression assumptions including normality, residuals, homogeneity of variance, collinearity of outliers, and independence of residuals were investigated.

Results

Results obtained from socio-demographic characteristics questionnaire were presented in Table 1. The mean score (standard deviation) of QoL was 67.7 (13.7) from a range between 0 and 100.

The relationship between socio-demographic characteristics and QoL based on bivariate test was shown in Table 2.

According to multivariate linear regression model with a backward strategy, the variables of age, spouse's age, spouse's job, spouse's education, economic status, gestational age at delivery, gravidity, tendency towards pregnancy, history of breastfeeding, and receiving breastfeeding training were predictors of QoL and accounted for 28.2% of the variance of QoL score. These results were presented in Table 3.

Discussion

Results of this study showed that the mean score of QoL in breastfeeding mothers in this study was higher than average. In addition, following variables were among QoL predictors in breastfeeding mothers: age, spouse's age, spouse's job, spouse's education, economic status, gestational age at delivery, parity, tendency to pregnancy, history of breastfeeding, and receiving breastfeeding training.

With respect to the mean QoL score of breastfeeding mothers, findings of the present study are almost consistent with those of a study done by Ghodsbin et al, conducted in Shiraz, Iran in 2012. In their study, the QoL

Table 1. SocioDemographic Characteristics of Participants (n = 547)

Characteristic	No. (%)
Age	
15-25	219 (40.0)
25-35	196 (35.8)
>35	132 (24.2)
Job	
Housewife	489 (89.4)
Employed	58 (10.6)
Education	
Illiterate and primary school	54 (9.9)
Secondary school	63 (11.5)
High school	26 (4.8)
Diploma	249 (45.5)
University	155 (28.3)
Husband's age	
20-25	54 (9.9)
25-30	202 (36.9)
30-35	152 (29.1)
>35	132 (24.1)
Husband's job	
Unemployed	27 (4.9)
Worker	170 (31.3)
Employee	98 (17.9)
Shop keeper	25 (4.6)
Freelancer	187 (34.2)
Others	40 (7.3)
Husband's education	
Illiterate and primary school	47 (8.6)
Secondary school	83 (15.2)
High school	44(8)
Diploma	239 (43.7)
University	134 (24.5)
Economic condition	
Satisfactory	192 (35.1)
Almost satisfactory	309 (56.5)
Unsatisfactory	46 (8.4)
Number of pregnancy	
1	283 (51.7)
2	158 (28.9)
3	66 (12.1)
4 and more	40 (7.3)
Number of labors	
1	298 (54.5)
2	169 (30.9)
3	55 (10.1)
4 and more	25 (4.6)
Infant age difference with previous child	5.30 (3.08)*
Pregnancy age at the time of labor	
<34	13 (2.4)
34-40	495 (91.5)
>40	33 (6.1)
Tendency for pregnancy	
Wanted	435 (79.5)

Table 1. Continued

Unwanted	112 (20.5)
Method of pregnancy	
Natural	513 (93.8)
Infertility treatment	34 (6.2)
Interest in infant's sex	
Wanted	354 (64.7)
Unwanted	193 (35.3)
Infant's sex	
Male	278 (51)
Female	267 (49)
Infant's age	3.98 (1.51)*
History of breastfeeding	
Yes	244 (44.6)
No	303 (55.4)
Average duration of previous breastfeeding period	20.79 (5.05)*
Use of lactation enhancement medicine	
Yes	110 (20.1)
No	437 (79.9)
Use of nutrients	
Yes	138 (25.2)
No	409 (74.8)
Receiving breastfeeding training	
Yes	471 (86.3)
No	75 (13.7)
Breastfeeding trainer	
Physician	29 (6)
Obstetrician or nurse	452 (94)

* Numbers indicate mean (standard deviation) values.

score was higher than the average, too (15). Moreover, the results of present study are consistent with the results of the study by Mirzayi et al, which was conducted in Tabriz, Iran in 2014. This consistency may be due to the similarity between the sample size and some socio-demographic factors among the participants (16).

In this study, the mean QoL score of breastfeeding mothers had an inverse correlation with the age of mother and her spouse. In terms of age, the highest mean score of QoL was observed among women aged 15 to 25 years and their spouses aged 20 to 25 years. This finding is consistent with the finding of the study conducted by Baghaei et al on QoL predictors among dialysis patients, that QoL has an inverse correlation with age (17). Moreover, it is consistent with the study by Akýn et al on women of childbearing age, who were in the first year postpartum (18). The inverse relationship of QoL with age may be justified by putting that physical strength reduces with aging, resulting in lower QoL. This reduction in QoL of women has a direct negative impact on breastfeeding. With respect to men, this loss of physical strength reduces their functionality and income, making them incapable of providing for their families sufficiently, which indirectly leads to a reduction in QoL of breastfeeding mothers (19,20).

Table 2. Relationship Between Socio-demographic Characteristics and Quality of Life in Breastfeeding Mothers Referred to Health Centers in Falavarjan, Iran (n = 547)

Characteristic	Mean (SD)*	P
Age		<0.001
15-25	69.4(12.9)	
25-35	68.5 (14.5)	
>35	63.5 (12.9)	
Job		<0.001
Housewife	67.2 (13.7)	
Employed	71.9 (12.9)	
Education		<0.001
Illiterate and primary school	59.5 (13.1)	
Secondary school	65.0 (14.0)	
High school	62.1 (16.1)	
Diploma	68.6 (13.1)	
University	71.1 (12.7)	
Husband's age		<0.001
20-25	71.4 (12.1)	
25-30	68.8 (13.6)	
30-35	68.8 (12.9)	
>35	63.8 (14.6)	
Husband's job		<0.001
Unemployed	54.1 (12.4)	
Worker	65.7 (12.0)	
Employee	70.6 (13.6)	
Shop keeper	69.1 (15.4)	
Freelancer	68.7 (13.7)	
Others	72.5 (13.9)	
Husband's education		<0.001
Illiterate and primary school	59.5 (13.0)	
Secondary school	62.2 (13.2)	
High school	63.6 (10.7)	
Diploma	70.4 (13.2)	
University	70.4 (13.7)	
Economic condition		<0.001
Satisfactory	72.9 (12.8)	
Almost satisfactory	67.2 (12.6)	
Unsatisfactory	52.2 (12.4)	
Number of pregnancy		<0.001
1	70.1 (13.0)	
2	66.1 (14.6)	
3	65.4 (11.5)	
4 and more	60.7 (14.2)	
Number of labors		<0.001
1	69.9 (12.8)	
2	66.2 (14.0)	
3	65.0 (13.5)	
4 and more	57.2 (14.8)	
Infant age difference with previous child	65.0(13.9)	0.010
Pregnancy age at the time of labor		0.008
<34	66.6 (10.3)	
34-40	67.5 (13.8)	
>40	71.3 (13.7)	

Table 2. Continued

Tendency for pregnancy		<0.001
Wanted	69.5 (13.3)	
Unwanted	71.9 (12.9)	
Method of pregnancy		0.112
Natural	67.9 (13.6)	
Infertility treatment	64.1 (14.1)	
Interest in infant's sex		0.012
Wanted	68.8 (13.1)	
Unwanted	65.6 (14.5)	
Infant's sex		0.243
Male	67.0 (14.0)	
Female	68.4 (13.4)	
Infant's age	67.7 (13.7)	0.048
History of breastfeeding		0.021
Yes	66.2 (14.2)	
No	68.9 (13.2)	
Average duration of previous breastfeeding period	65.4 (14.0)	0.463
Use of lactation enhancement medicine		0.011
Yes	64.7 (12.7)	
No	68.4 (13.8)	
Use of nutrients		0.416
Yes	66.9 (12.8)	
No	68.0 (14.0)	
Receiving breastfeeding training		0.019
Yes	68.2 (13.5)	
No	64.2 (14.4)	
Breastfeeding trainer		0.010
Physician	68.1 (13.4)	
Obstetrician or nurse	68.0 (13.5)	

*Standard deviation

In addition, this study showed that the spouse's education has a direct correlation with the mean score of QoL in breastfeeding mothers. This finding is consistent with the finding of the study by Akýn et al conducted on women in 2009 (18). This study is also consistent with the studies conducted by Lopes et al and Pakpour et al, in which there is a direct correlation between educational level and QoL (21,22). In other words, educational level and subsequently the income of the spouse have a direct correlation with the improvement of QoL of family members, including the mother, through provision of better living conditions (21,22).

In this study, QoL had a direct relationship with economic status, which is consistent with the findings of the study by Akýn et al (18). Favorable economic status brings welfare and medical and care facilities to breastfeeding mothers and improves their QoL (23).

The present study revealed that people with intended pregnancy had relatively higher QoL than those with unintended pregnancy. This is probably because individuals with intended and successful term pregnancy

Table 3. Predictive Factors of Quality of Life in Breastfeeding Mothers Referred to Health Centers in Falavarjan, Iran

Variable	B (CI)	P
Age		
15-25	0	0
25-35	0.6 (-2.1 to 3.3)	0.673
>35	-2.5 (-6.4 to 1.3)	0.196
Husband's age		
25-30	0	0
20-25	5.7 (2.0 to 9.5)	0.003
30-35	0.0 (-2.9 to 2.8)	0.964
>35	0.1 (-3.9 to 4.2)	0.931
Husband's job		
Freelancer	0	0
Unemployed	4.4 (-9.8 to 0.9)	0.109
Worker	-1.7 (-4.2 to 0.8)	0.187
Employee	1.5 (-1.7 to 4.8)	0.353
Shop keeper	-2.7 (-7.8 to 2.3)	0.284
Others	4.2 (0.1 to 8.4)	0.043
Husband's education		
Diploma	0	0
Illiterate and primary school	-5.1 (-9.1 to -1.1)	0.011
Secondary school	-5.1 (-8.2 to -2.1)	0.001
High school	-4.4 (-8.4 to -0.4)	0.028
University	-3.0 (-5.8 to -0.1)	0.038
Economic condition		
Almost satisfactory	0	0
Satisfactory	4.3 (2.0 to 6.6)	<0.001
Unsatisfactory	-12.0 (-16.2 to -7.9)	<0.001
Pregnancy age at the time of labor		
34-40	0	0
<34	-2.0 (-8.5 to 4.5)	0.549
> 40	4.4 (0.2 to 8.7)	0.038
Number of labor		
1	0	0
2	-11.8 (-16.7 to -6.9)	<0.001
3	10.7 (-16.7 to -4.6)	0.001
>3	-10.1 (-17.6 to -2.5)	0.009
Tendency for pregnancy		
Wanted	0	0
Unwanted	-5.1 (-7.9 to -2.3)	<0.001
History of breastfeeding		
No	0	0
Yes	10.0 (5.2 to 14.8)	<0.001
Infant's age		
Receiving breastfeeding training	0.8 (0.1 to 1.5)	0.017
Yes	0	0
No	-3.2 (-6.4 to -0.1)	0.040

have already been psychologically and mentally prepared, and thus have better QoL (24).

Our study showed that the number of children has an inverse correlation with QoL score, which is consistent with the study done by Akýn et al (18). In addition, low parity mothers are healthier and have higher QoL. In this study, the nulliparous women who received breastfeeding training or had older infants, had higher QoL than those with infant in neonatal period. This may be because the

former group had already adjusted to the situation with time.

According to the findings of the present study, the QoL and breastfeeding can be improved through extensive planning and supportive measures by family and society. Due to the cross-sectional design of the study, as one of its limitations, the relationship between QoL and socio-demographic characteristics is not necessarily a cause-and-effect relationship. The conduction of this study only on breastfeeding mothers with infants younger than 6 months was another limitation. This is because postpartum complications, such as depression, may also affect the QoL. Therefore, it is recommended that a similar study be performed after the period of exclusive breastfeeding (i.e. after the first 6 months of life).

Conclusion

Findings of this study show that the variables of age, spouse's age, spouse's education, economic status, gestational age at delivery, gravidity, tendency to pregnancy, history of breastfeeding, receiving breastfeeding training, and infant's age were predictors of QoL. Since socio-demographic variables can be moderated, the QoL and breastfeeding can be improved through extensive planning and supportive strategies by family and society.

Conflict of Interests

Authors declare that they have no conflict of interests.

Ethical Issues

The study was approved by the Ethics Committee of Tabriz University of Medical Sciences (TBZMED.REC. 1394.166).

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