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# Comparison of the effects of educational programs on the development of infants aged 1-3 months based on the BASNEF model and application of acupressure on the GB-21 point

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## ABSTRACT

***Background*:** Breastfeeding plays a pivotal role in the promotion of health and prevention of psychological problems in children. This study aimed to compare the effects of breastfeeding educational programs on the development of infants aged 1-3 months based on the model of Belief, Attitude, Subjective Norm, and Enabling Factors (BASNEF) and application of acupressure on the GB-21 point.

***Methods*:** This quasi-experimental study was conducted on 150 pregnant women (gestational age: 36-41 weeks) receiving care in the educational clinics affiliated to Shiraz University of Medical Sciences, Iran. Subjects were divided into two intervention groups (educational and acupressure) and one control group. In intervention groups, in addition to routine prenatal care, pregnant women received training based on the BASNEF model and instructed acupressure. Mothers in the control group received only standard care during pregnancy. After the intervention, data were collected using Denver developmental screening test. Data analysis was performed in SPSS V.16 using one-way analysis of variance (ANOVA).

***Results*:** Among developmental gross motor skills, a significant difference was observed between the intervention and control groups regarding the ability to breast lift by relying on the arm (P=0.016). In terms of fine motor skills, a significant difference was observed in holding the rattle by infant (P=0.034). Moreover, time of acquiring individual and social developmental skills was higher in intervention groups compared to the control group. However, the difference was not statistically significant (P≥0.05). Therefore, no significant differences were observed between the two interventional groups in this regard (P≥0.05).

***Conclusion:*** According to the results of this study, instructed acupressure on the GB-21 point could improve some gross motor and fine motor skills in infants. Therefore, it is recommended that the developmental indicators in infants aged 1-3 months be evaluated in longer periods.

***Keywords:*** Acupressure, Breastfeeding, Infant development, Pregnancy, Training model

## Introduction

Breastfeeding plays a pivotal role in the promotion of the health of newborns and prevention of allergic and diarrheal diseases, respiratory tract infections, diabetes, intestinal disorders, celiac disease, chronic liver disease, and different types of cancer, especially lymphoma (1-4). Breastfeeding is essential to the enhancement of the intelligence quotient and cognitive development of children, which result in proper brain development and prevention of psychological disorders in adulthood (5).

Knowledge and attitude towards breastfeeding are the main influential factors in the selection of this feeding mode for newborns. Attitudes are formed based on the experiences of individuals throughout life, and different events and people could affect the attitude of an individual towards a specific context. Positive attitude of expecting mothers towards breastfeeding is a determinant for the choice of this feeding mode. Attitudes encompass the learned responses and mental states of the individual, which lead to specific

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reactions to different concepts (5).

Educational health programs are ranked based on their effectiveness, which relies on the proper utilization of the theories and models used in the program. In other words, adequate theoretical support of basic health needs is associated with the higher efficacy of educational health programs (6).

Model of the Belief, Attitude, Subjective Norm, and Enabling Factors (BASNEF) is a comprehensive scale for the measurement of behavioral changes in developing societies. This model mainly focuses on the effects of knowledge, attitude, and individual skills on behavioral changes. BASNEF consists of various constructs, such as beliefs, attitudes, subjective norms, and enabling factors. In addition, this model has been integrated with the Fishbein approach and concept of enabling factors proposed by Greene. The BASNEF model was first designated by John Hubly in 1988 (7). This model focuses on the effects of knowledge and attitude on the performance of individuals, while considering the influence of enabling factors and subjective norms on behavioral changes (8).

Acupressure is an ancient home remedy dating back to over 5,000 years ago, which involves the application of continuous pressure, rather than needles, on a specific anatomic acupoint (9). Several acupuncture points have been shown to be effective in reducing breast soreness and engorgement and encouraging milk let-down. Such examples are stomach 13 (traced up along a vertical nipple line to under both clavicles), conception vessel-17 (in the middle of sternum), and GB-21 (on the top of the trapezius, slightly posterior). Of course, this point has multiple applications and is has a high sensitivity.Previous studies have proposed Gua-Sha therapy as an effective technique in the management of breast engorgement (10).

Acupuncture and acupressure on the GB-21 point could be greatly beneficial in increasing the rate of breastfeeding. Acupressure applied on this point has been reported to promote breastfeeding and stimulate milk ejection reflex.

Acupuncture originated in China over 4,000 years ago and remained unknown until the 17$^{th}$ century. Later in Europe and Western countries, acupuncture was practiced as an easy and safe remedy for various conditions. Acupuncture has minimal side effects and no contraindications. Moreover, it is a simple, cost-effective method without the need for expensive, high-tech equipment (11). Acupuncture shares all the properties of acupressure, while in acupressure, needles are not used, and pressure is applied on specific acupoints.

Given the importance of the growth and development in infants and the effects on the health of future generations, researchers have been investigating different strategies to enhance the growth and development of children without complications. The GB-21 point has been considered an effective region in the reduction of labor pain and lactation insufficiency (10, 12). However, no studies have been carried out in the acupressure medical literature since the past 10 years in this regard.

This study aimed to evaluate the effects of educational programs on the development of infants aged 1-3 months based on the BASNEF model and application of acupressure on the GB-21 point.

## Methods

This quasi-experimental study was conducted to measure the development of breastfed infants divided into three groups in Shoushtari and Hafez hospitals affiliated to Shiraz University of Medical Sciences, Iran in 2012. Selection of these health centers was due to the easy access to the research community and efficient coordination.

Based on previous studies and considering $\alpha$=0.05, test power=0.8, and $\beta$=0.2, the sample size was determined at 150 subjects (50 in each group). Participants were selected via purposive sampling consisting of pregnant women in the third trimester (gestational age: 36-41 weeks) receiving care in the selected educational clinics affiliated to Shiraz University of Medical Sciences. Subjects were followed-up for a scheduled routine care at the hospital, and the first three individuals referring to the selected healthcare centers who met the inclusion criteria were divided into three groups of educational, acupressure, and control, respectively.

Inclusion criteria for pregnant women were as follows: 1) primiparous women; 2) gestational age of 36-41 weeks; 3) age of 18-35 years; 4) minimum education level of secondary school; 5) lack of severe physical or mental disorders; 6) residence in Shiraz city; 7) decision for the breastfeeding of infant; 8) willingness for participation and 9) written informed consent for enrollment.

Inclusion criteria for the infants were as follows: 1) exclusively breastfed infants; 2) lack of special disorders; 3) good overall health at birth; 4) lack of congenital disorders; 5) singleton gestation; 6) absence of severe diseases requiring hospitalization (e.g., diarrhea, respiratory tract infection, and jaundice) during the study period and 7) normal status of the indicators of growth

and developmental skills at the beginning of the study.

After the completion of training on breastfeeding during pregnancy, the physical growth index was primarily examined by the researchers in the delivery room and in the nearest clinic for the mothers at the end of the second and third months of birth. In addition, the developmental index was evaluated based on the Denver developmental screening test in the delivery room and after the training of mothers (second and third months of birth) using self-reports.

Reliability and validity of these indices have been confirmed in a study by Shahshahani et al. Accordingly, the Cronbach's alpha coefficient and Kappa measure of test-retest agreement were 92% and 87%, respectively, and these values were 90% and 76% for the inter-rater agreement, respectively (13).

***Intervention procedure***

Participants in this study were selected randomly. In sampling, the first participant received educational training, and the second participant was placed in the control group by the researcher. Educational training for all the samples was performed by one researcher in order to avoid possible bias, and instructed acupressure intervention during breastfeeding was conducted at home by the mothers. During pregnancy, the mothers were instructed by the researcher regarding the place and amount of the applied pressure. In this study, instructions on the acupressure intervention by the researcher were approved by the special counsel advisor (Figure 1).

Data collection tools included demographic questionnaires for mothers and infants (age, gender, weight, height, head circumference, and mode of delivery), Pan Balance, tape measure, stadiometer, and blood pressure control machine.

After allocation to the educational intervention group, the mothers received four training sessions (90 minutes each) based on the BASNEF model once a week. Content of the training sessions included explanations on the benefits of breast milk, accurate techniques of breastfeeding, role of breastfeeding in maternal health, benefits of breast milk for the improvement of the physical and mental health of infants, signs of breast milk sufficiency, methods of milking and storing breast milk, and providing consultation for mothers, as well as their acquaintances, regarding the advantages of exclusive breastfeeding and physical growth developmental indicators of infants.

Training sessions were held by the researchers through lectures, group discussions, role-play, practice, educational images, and question and answer using pamphlets and video CDs. It should be noted that the BASNEF model emphasizes the effect of knowledge and attitude on the performance of individuals, while considering the impact of enabling factors and subjective norms on behavioral changes (14).

In order to investigate the developmental skills of infants, we used the Denver developmental screening test in this study. Age of the acquisition of developmental skills is specified on the top and at the bottom of this scale in months. Initially, the researchers noted the age of infants on the top of the scale and connected it to the same age at the bottom of the scale. Afterwards, all the developmental skills, which were crossed by this line, were monitored and evaluated. Furthermore, evaluation of the development of infants immediately after birth was carried out by the researchers in the delivery room, and after one and three months by the mothers, who were instructed on the completion of the Denver questionnaires in prenatal classes.

In the acupressure group, mothers were required to apply pressure on the GB-21 point for one minute at home before and during breastfeeding. The GB-21 point, which is located in the middle of the hypothetical line between the shoulder projection and seventh vertebra of the neck, has been shown to be an effective region to reduce labor pain (14). In this intervention, mothers had to apply pressure with their fingers until the acupoint started to burn, tingle, or itch (14). Subjects were provided with a form to mark the frequency of performing acupressure per day. In this study, participants in the control group only received routine training and care.

***Measurement tools***

During the first to third months after delivery, the infants of the studied mothers were evaluated in terms of anthropometric indices (e.g., birth weight, height, and head circumference). Birth weight of the newborns was measured weekly using a calibrated SECA scale with accuracy of ±200 grams. In addition, height and head circumference of the infants were measured using a standard tape measure (SECA) with accuracy of ±2 cm while the infant was placed on his back.

In this study, Denver developmental screening test was used to assess the developmental status of infants in terms of parameters such as coordinated movements, lifting up the head,

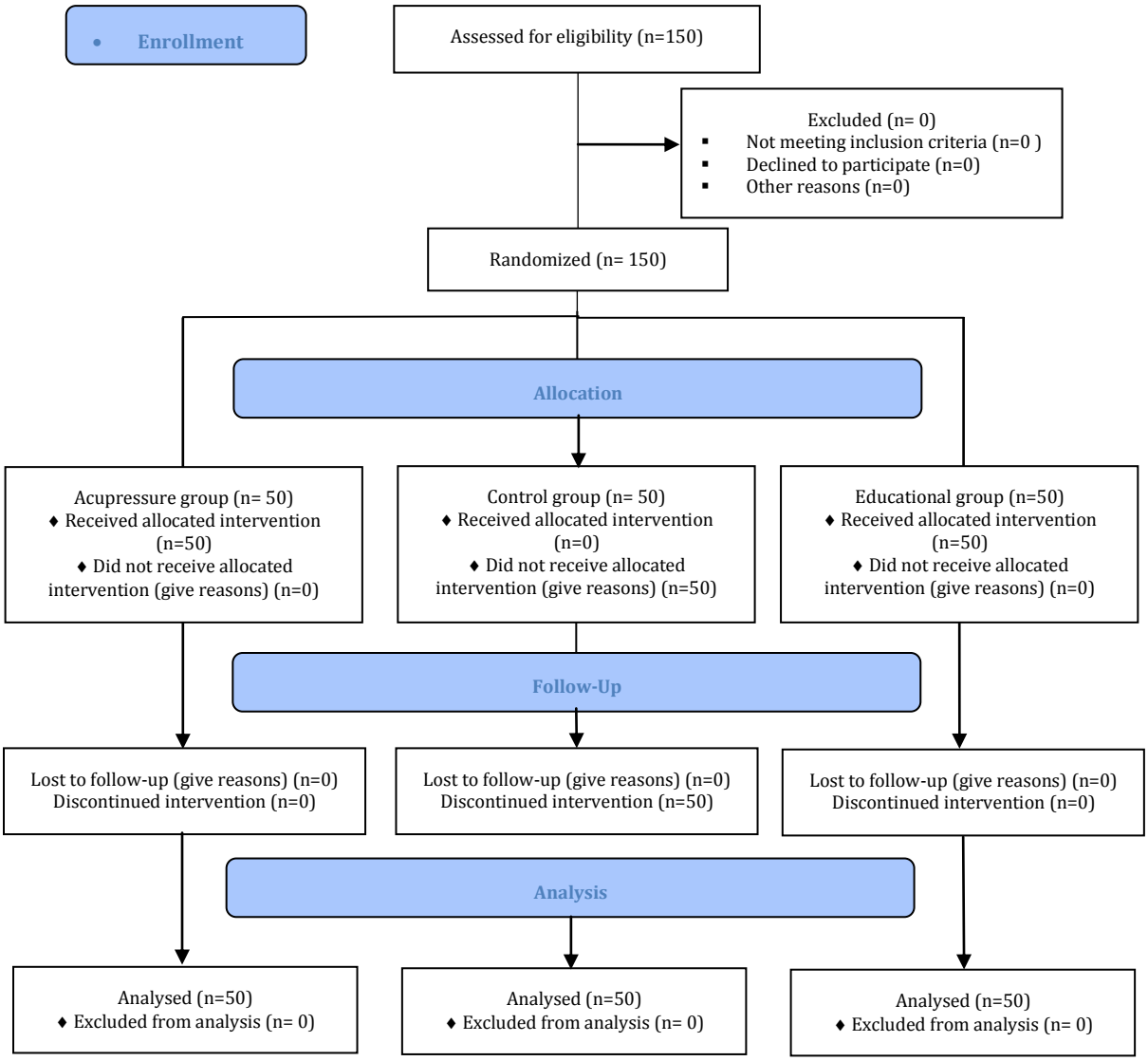


**Figure 1.** CONSORT Diagram

smiling, making sounds, reaction to faces, following objects, holding a rattle, and standing weight on feet (15).

Denver II developmental screening test is used as a clinical screening tool for children in the first six years of life. In this scale, four main areas are examined, including social and individual dimensions, fine motor adaptive skills, speech and language, and gross motor skills. Each of the items in this scale is answered with "Yes" or "Not yet", and the efficacy of this scale has been confirmed in numerous studies.

### *Ethical considerations*

Study protocol was approved by the Ethics Committee of Shiraz University of Medical Sciences, Iran. In addition, written informed consent was obtained from all the participants prior to the study. Subjects in the control group received routine care procedures. If the mothers had questions regarding the intervention process, they were allowed to contact the researcher via phone or in person.

### *Statistical analysis*

In this study, data analysis was performed in SPSS V.16 using one-way analysis of variance (ANOVA) at the significance level of 0.05.

## Results

In this study, mean age of the mothers in the educational, acupressure, and control groups was 23.86±4.30, 23.98±3.75, and 24.2±4.18 years, respectively. At the baseline, participants in three groups were evaluated in terms of the frequency

**Table 1.** Comparison of mean of age in educational, acupressure, and control groups

| Age | Educational group | Acupressure group | Control group | P-value |
|---|---|---|---|---|
| | Mean±SD | Mean±SD | Mean±SD | |
| Mother | 23.86±4.30 | 23.98±3.75 | 24.4±4.18 | 0.786 |
| Spouse | 28.16±5.24 | 28.62±3.74 | 28.96±2.89 | 0.617 |

distribution of age (P=0.79), education level (P=0.85), and employment status of mothers and their spouses (P=0.64). According to the results, mothers and spouses were homogenous in this regard. In total, 96% of the mothers in the educational group, 98% in the acupressure group, and 96% in the control group were housewives, and all the spouses of these participants were employed (100%) (Tables 1 & 2).

Among developmental gross motor skills, a significant difference was observed between the intervention groups and control group only in terms of the ability to breast lift by relying on the arm (P=0.016). With respect to fine motor skills, a significant difference was observed in holding the rattle by infant (P=0.034). However, the results of Tukey's post-hoc test revealed no significant difference between the intervention groups and control group (P=0.409), as well as the educational and acupressure groups (P=0.227), in terms of the ability to breast lift by relying on the arm. On the other hand, a significant difference was observed between the acupressure and control groups in this regard (P=0.012) (Table 3).

With reference to the aspect of holding the rattle by infants, no significant difference was observed between the intervention groups and control group (P=0.063), the education and acupressure groups (P=0.066), and the acupressure

**Table 2.** Comparison of education level and employment status in educational, acupressure, and control groups

| Education level | | Educational group % | Acupressure group % | Control group % | P-value |
|---|---|---|---|---|---|
| Mother | Below Diploma | 32 | 26 | 28 | 0.852 |
| | High School Diploma | 54 | 50 | 54 | |
| | Collegiate | 14 | 20 | 22 | |
| Spouse | Below Diploma | 38 | 28 | 36 | 0.801 |
| | High School Diploma | 46 | 58 | 46 | |
| | Collegiate | 16 | 14 | 14 | |
| Employment Status of Mother | Housewife | 96 | 96 | 98 | - |
| | Employed | 4 | 4 | 2 | |

**Table 3.** Comparison of mean acquisition time of developmental skills (gross motor skills dimension) in educational, acupressure, and control groups

| Developmental indicators | Educational group | Acupressure group | Control group | P-value |
|---|---|---|---|---|
| | Mean±SD | Mean±SD | Mean±SD | |
| Moving both hands | 1.06±0.245 | 1.11±0.379 | 1.17±0.433 | 0.347 |
| Symmetric movement of hands | 1.10±0.371 | 1.07±0.327 | 1.19±0.495 | 0.306 |
| Moving both legs | 1.00±0.000 | 1.00±0.000 | 1.00±0.000 | - |
| Lifting head up to 45˚ | 31.23±5.17 | 31.43±4.47 | 30.51±4.86 | 0.63 |
| Lifting head up to 90˚ | 49.52±10.99 | 49.52±10.36 | 48.87±12.66 | 0.95 |
| Stability of head while sitting | 60.54±8.676 | 61.63±8.29 | 61.45±9.12 | 0.809 |
| Breast lift by relying on one arm | 86.23±3.66 | 87.65±2.21 | 85.13±3.94 | 0.016 |
| Standing weight on feet | 72.41±6.22 | 73.21±6.47 | 72.91±6.11 | 0.83 |
| Keeping head fixed | 87.19±2.50 | 87.52±2.04 | 78.95±1.91 | 0.51 |
| Showing reaction to bell ring | 1.00±0.000 | 1.00±0.000 | 1.00±0.000 | - |
| Phonation | 9.21±2.88 | 10.00±2.13 | 10.19±1.85 | 0.09 |
| Making sounds | 21.23±6.35 | 23.39±6.88 | 22.00±6.67 | 0.31 |
| Laughing | 39.69±4.45 | 40.91±6.67 | 40.81±4.51 | 0.35 |
| Screaming | 55.81±4.39 | 56.76±5.25 | 56.57±4.66 | 0.59 |
| Tracking rattle sound | 85.74±3.44 | 84.72±4.018 | 85.70±3.52 | 0.45 |

**Table 4.** Comparison of mean acquisition time of developmental skills (fine motor skills and individual-social dimensions) in educational, acupressure, and control groups

| Developmental indicators | | Educational group | Acupressure group | Control group | P-value |
|---|---|---|---|---|---|
| | | Mean±SD | Mean±SD | Mean±SD | |
| Fine motor skills | Following an object to midline | 28.83±5.34 | 31.41±6.16 | 29.72±5.068 | 0.79 |
| | Following an object after midline | 41.79±5.21 | 42.74±3.95 | 41.72±4.19 | 0.48 |
| | Holding a rattle | 77.75±7.33 | 80.04±2.34 | 80.00±2.89 | 0.034 |
| | Bringing hands together | 28.83±5.43 | 31.41±6.16 | 29.72±5.068 | 0.079 |
| | Rotating head | 41.79±5.21 | 42.74±3.95 | 41.72±4.19 | 0.478 |
| Individual-social dimension | Paying attention to faces | 15.02±4.08 | 15.33±4.22 | 14.85±4.14 | 0.85 |
| | Smiling | 10.90±3.59 | 10.74±3.25 | 10.85±3.46 | 0.97 |
| | Smiling at others | 21.40±4.57 | 21.57±3.80 | 21.57±3.91 | 0.97 |
| | Paying attention to one's hands | 51.49±9.91 | 51.56±7.84 | 51.33±6.45 | 0.99 |

and control groups (P=0.999). Furthermore, since movement of the two legs and reaction to the bell ring were quite similar in the three study groups, statistical analysis was not possible in this regard. It is also noteworthy that the acquisition time of individual and social developmental skills was higher in the intervention groups compared to the control group; however, the difference was not statistically significant (P≥0.05) (Table 4).

## Discussion

In the present study, evaluation of gross motor developmental skills was indicative of a significant difference between the intervention groups and control group regarding the acquisition time of the ability to breast lift by relying on the arm. Consistent with the results of our study, findings of Arzani et al. showed that training had no significant effect on the development of infants. In addition, no significant difference was reported between the two groups in terms of developmental indicators at the time of discharge and one, two, and three months after discharge (16). Similar results were obtained in the study by Lucas et al. conducted in Australia in order to assess the developmental behaviors of infants aged at 6 weeks and 3, 6, 9, and 18 months (17).

In another study, Batal et al. (2005) claimed that mothers needed persuasion and support in order for the proper breastfeeding of newborns (18). On the same note, the results of another research indicated that lack of access to healthcare staff was the main problem for mothers in continuous breastfeeding (19). Other studies have also confirmed that raising the awareness of healthcare providers on the benefits of this feeding mode could encourage a larger proportion of mothers to breastfeed their infants (20).

In one study in this regard, Melnyk et al. evaluated mothers with low-birth-weight and preterm infants using educational and behavioral programs. According to the findings, Cognitive development, behavior and health status of these infants (low birth weight) have a positive impact (21). Furthermore, the results of another study by McCormick et al. revealed that early educational interventions at home from the time of discharge to the age of three years could positively affect the cognitive-behavioral development of children, as well as the overall health status of low birth weight infants (22).

In another experiment, developmental skills were assessed in the infants of mothers who had received an educational booklet and verbal consultation on breastfeeding in comparison with those who had only received verbal consultation on exclusive breastfeeding at the age of six months (48.5% vs. 43.7%) (23). Furthermore, the findings of other researchers in this regard have indicated that the decision of mothers for breastfeeding is largely influenced by traditional beliefs, as well as the recommendations of physicians, family members, and nurses (24, 25).

According to the findings of Walker et al., care interventions and mental and social support in the form of regular training programs, home visits, follow-up of the health status of infants, and support of the parents were highly effective in the enhancement of the cognitive and intellectual development of children (26). According to the literature, such interventions could improve mother-infant interaction, while mothers participating in these programs have been reported to have higher self-confidence and satisfaction with their maternal role (27).

In one research, Bryant et al. screened 668 infants aged 2 weeks-12 months using Denver developmental screening test in Cardiff, England in 1974. According to the obtained results, gross and fine motor skills were weaker in the infants in Cardiff were screened with Denver test (28). On the other hand, the findings of Alidousti et al. were indicative of no significant difference between the infants of the intervention and control groups in terms of gross motor developmental skills at 50% and 90% points of the growth curve. Moreover, no significant difference was observed between the infants of the intervention group were screened with Denver samples and control group in this regard (29).

In another study, Burchinal et al. investigated the effect of the quality of healthcare services on the cognitive-lingual development of infants in 1996 and reported a significant association between these two variables (30). Although developmental skills of infants had no improvement in the present research, the aforementioned studies reported associations between some developmental factors and age of the acquisition of developmental skills. Therefore, it could be concluded that stimulation and reinforcement of positive factors in this regard could be effective in improving the age of acquiring developmental skills in children.

In the assessment of the development of infants, we should consider the cultural environment in which they grow since the behaviors of children directly reflect the cultural values they have been exposed to during their growth and development (31).

In the last 30 years, no studies have investigated the effect of acupressure on the GB-

21 point on the breastfeeding, growth and development of infants. According to the results of the current study, acupressure influenced only a few developmental indicators in the newborns. Previous studies have confirmed the effectiveness of acupressure in reducing maternal anxiety through releasing endorphins from the endogenous opioid system (32-34). Reduction of maternal anxiety seems to improve breastfeeding, as well as a number of developmental indicators in infants. Additionally, our findings confirmed that the mechanism of acupressure on the GB-21 point could effectually decrease labor pain. Acupressure activates the thick neural fibers, which leads to the closing of the nerve gates preventing the transmission of pain (12).

According to the results of the present study, breastfeeding training of mothers based on the BASNEF model influenced some of the physical parameters of infant development, while it had no effect on developmental indices. Despite the fact that most infants undergo growth and development processes in the same time and order, it seems that parents and acquaintances play a major role in these processes and the elimination of the associated problems (35). As such, the most practical approach to accelerate the brain development of infants requires their involvement in constant interaction with people and objects. In fact, continuous practice is the key to the proper motor development of young children. Moreover, parents should encourage children in this regard by providing a safe environment and preventing possible risks during the different activities of children (35).

One of the limitations of the present study was the possibility of applying pressure on different acupoints by the mothers, which could not be controlled by the researcher. Enrollment of different people in the group discussions of training sessions was an attempt to overcome this limitation. Furthermore, the relatively short duration of the study (three months) did not allow the researchers to follow-up the acquisition of developmental skills in all the infants since some children tend to reach this stage of development later than others. In addition, it is recommended that logistic regression analysis model be used to evaluate the survival rate of infants during the growth and developmental period.

## Conclusion

According to the results of this study, breastfeeding educational intervention based on the BASNEF model and instructed acupressure could enhance the acquisition time of the ability to breast lift by relying on the arm among gross motor skills and holding the rattle among fine motor skills. Lack of improvement in other dimensions of motor development might be due to the fact that developmental indicators are affected by numerous factors, such as the emotional experiences of infant, exposure to different activities and environments, socio-cultural status of family, adequate time for practice and game play with family members, and lack of opportunity to provide appropriate feedback for the infant. Therefore, in addition to the improvement of the quality of breastfeeding, the effects of the aforementioned variables should be assessed separately in order to investigate the exact acquisition time of developmental skills in newborns. Moreover, it is suggested that developmental indicators in infants be evaluated in longer periods of time (at least 6-12 months).

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## References

1. Kull I, Wickman M, Lilja G, Nordvall SL, Pershagen G. Breast feeding and allergic diseases in infants-a prospective birth cohort study. Arch Dis Child. 2002; 87(6):478-81.
2. Koletzko B, Michaelsen KF, Hernell O. Short and long term effect of breast feeding on child health. Food Res Int. 2001; 34(5):551-3.
3. Ivarsson A, Hernell O, Stenlund H, Persson LA. Breast-feeding protects against celiac disease. Am J Clin Nutr. 2002; 75(5):914-21.
4. Daniels MC, Adair LS. Breast-feeding influences cognitive development in Filipino children. J Nutr. 2005; 135(11):2589-95.
5. Fairbank L, O'Meara S, Renfrew MJ, Woolridge M, Sowden AJ, Lister-Sharp D. A systematic review to evaluate the effectiveness of interventions to promote the initiation of breastfeeding. Health Technol Assess. 2000; 4(25):1-171.
6. Savaser S. Knowledge and attitudes of high school students about AIDS: a Turkish perspective. Public

Health Nurs. 2003; 20(1):71-9.
7. Hubly J. Understanding behavior: the key to successful health education. Trop Doct. 1988; 18(3):134-8.
8. Akbarzadeh M, Bahmani N, Moatari M, PourAhmad S. The impact of the BASNEF educational programme on breastfeeding behavior in Iran. Br J Midwifery. 2013; 21(4):276-84.
9. Waters BL, Raisler J. Ice massage for the reduction of labor pain. J Midwifery Womens Health. 2003; 48(5):317-21.
10. Chiu JY, Gau ML, Kuo SY, Chang YH, Kuo SC, Tu HC. Effects of Gua-Sha therapy on breast engorgement: a randomized controlled trial. J Nurs Res. 2010; 18(1):1-10.
11. Haddad-Rodrigues M, Spanó Nakano AM, Stefanello J, Campos Pereira Silveira RC. Acupuncture for anxiety in lactating mothers with preterm infants: a randomized controlled trial. Evid Based Complement Alternat Med. 2013; 2013:169184.
12. Pomeranz B, Beman B. Basics of Acupuncture. 5th ed. Trans: Khedmat H. Tehran: Teimurzadeh; 2006. P. 23-40, 189-234.
13. Shahshahani S, Vameghi R, Azari N, Sajedi F, Kazemnejad A. Validity and reliability determination of denver developmental screening test-ii in 0-6 year-olds in tehran. Iran J Pediatr. 2010; 20(3):313-22.
14. Heydarnia AR. Discussions in health education process. 1st ed. Tehran: Zamani; 2008. P. 25-52.
15. lowrence RA, lowrence RM. Making and informed decision about infant feeding. Breastfeeding. A guide for the medical profession. 5th ed. St. Louis: Mosby lnc; 1998. P. 217-32.
16. Arzani A, Kermanshahi S, Zahedpasha Y. The effect of educational intervention on continuous breastfeeding in low birth weight infants. J Qazvin univ med sci. 2008; 12(2):69-75(in Persian)
17. Lucas A, Fewtrell MS, Morley R, Singhal A, Abbott RA, Isaacs E, et al. Randomized trial of nutrient-enriched formula versus standard formula for postdischarge preterm infants. Pediatrics. 2001; 108(3):703-11.
18. Batal M, Boulghaurjian C. Breastfeeding initiation and duration in Lebanon: are the hospitals "mother friendly"? J Pediatr Nurs. 2005; 20(1):53-9.
19. Shakespeare J, Blake F, Garcia J. Breastfeeding difficulties experienced by women taking part in a qualitative interview study of postnatal depression. Midwifery. 2004; 20(3):251-60.
20. Hong TM, Callister LC, Schwartz R. First time mothers' views of breastfeeding support from nurses. MCN Am J Matern Child Nurs. 2003; 28(1):10-5.
21. Melnyk BM, Feinstein NF, Fairbanks E. Effectiveness of informational/behavioral interventions with parents of low birth weight (LBW) premature infants: an evidence base to guide clinical practice. Pediater Nurs. 2002; 28(5):511-6.
22. Mccormic MC, Mccarton C, Tonascia J, Brook Gunn J. Early educational intervention for very low birth weight infants: results from the infant's health and development program. Pediatr. 1993; 123(4):527-33.
23. Curro V, Lanni R, Scipione F, Grimaldi V, Mastroiacovo P. Randomized controlled trial assessing the effectiveness of a booklet on duration of breast feeding. Arch Dis Child. 1997; 7(6):500-4.
24. Li L, Li S, Ali M, Ushijima H. Feeding practice of infants and their correlating in urban areas of Beijing , China. Pediatr Int. 2003; 45(4):400-6.
25. Engestrom BL, Fridlund B. Women's views of counselling received in connection with breast-feeding after reduction mammoplasty. J Adv Nurs. 2000; 32(5):1143-51.
26. Walker SP, Chang SM, Powell CA, Grantham-Mcgregor SM. Psychosocial intervention improves the development of term low-birth-weight infants. J Nutr. 2004; 134(6):1417-23.
27. Garner JM, Walker SP, Powell CA, Grantham-Mcgregor S. A randomized controlled trial of a home-visiting intervention on cognition and behavior in term low birth weight infants. J Pediatr. 2003; 143(5):634-9.
28. Bryant GM, Davies KJ, Newcombe RG. The Denver developmental screening test. Achievement of test items in the first year of life by Denver and Cardiff infants. Dev Med Child Neurol. 1974; 16(4):475-84
29. Alidoosti shahraki K, Hosseini Nasab A, Foroohari S. Effects of mothers' training about complementary feeding and developmental skills on growth. Hakim Res J. 2008; 11(2):33-8(in Persian)
30. Burchinal MR, Roberts JE, Nabors LA, Bryant DM. Quality of center child care and infant cognitive and language development. Child Dev. 1996; 67(2):606-20.
31. Lee LL, Harris SR. Psychometric properties and standardization samples of four screening tests for infants and young children: a review. Pediatr Phys Ther. 2005; 17(2):140-7.
32. Spence DW, Kayumov L, Chen A, Lowe A, Jain U, Katzman MA, et al. Acupuncture increases nocturnal melatonin secretion and reduces insomnia and anxiety: a preliminary report. J Neuropsychiatry Clin Neurosci. 2004; 16(1):19-28.
33. Han JS. Acupuncture and endorphins. Neurosci Lett. 2004; 361(1-3):258-61.
34. Pilkington K, Kirkwood G, Rampes H, Cummings M, Richardson J. Acupuncture for anxiety and anxiety disorders--a systematic literature review. Acupunct Med. 2007; 25(1-2):1-10.
35. Medical Education, Treatment and Health Ministry Educational package for Improving infants nutrition and Growth .2002: 14- 21.