



# The Effect of YouTube Videos on Breastfeeding Education in Mothers of Babies with Diarrhea

YouTube Videolarının İshalli Bebek Annelerinde Emzirme Eğitimine Etkisi

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## ABSTRACT

**Aim:** YouTube videos have become influential tools for maternal education, providing novel dimensions of empowerment in breastfeeding. However, concerns exist about the quality of information in these videos. This study aims to comprehensively investigate the effects of expert-reviewed YouTube videos on mothers' attitudes towards breastfeeding and to inform mothers that breast milk protects children against diarrhea by blocking organisms that cause diarrhea.

**Material and Method:** The study included 42 mothers whose children sought pediatric care for diarrhea at a hospital. Participants watched three YouTube videos endorsed by pediatric specialist and filled the Iowa Infant Feeding Attitude Scale (IIFAS) questionnaire before and after watching the videos. Demographic data were recorded, and statistical analyses were conducted to assess changes in attitudes. The collected data were analyzed using SPSS Version 15.0 for Windows.

**Results:** Of the 42 participants, 34 completed the study. Maternal education correlated with breastfeeding knowledge. Mothers with prior education had similar IIFAS scores before watching YouTube videos, suggesting the videos were beneficial for both educated and uneducated mothers. The number of children also influenced maternal knowledge about breastfeeding ( $p<0.05$ ). Several IIFAS items showed significant attitude shifts following the YouTube video intervention. Notably, misconceptions about nutritional benefits, iron content, formula-feeding convenience, and breastfeeding in public were effectively addressed ( $p<0.05$ ).

**Conclusion:** This study underscores the potential of YouTube videos in maternal education, especially regarding breastfeeding. Expert-reviewed content enhances understanding and attitudes. While previous studies underscored breastfeeding's benefits, this study additionally emphasizes the role of maternal education. YouTube videos, when delivered by healthcare professionals, can substantially benefit breastfeeding mothers.

**Keywords:** Breastfeeding, YouTube videos, maternal education, attitudes, infant feeding.

## ÖZ

**Amaç:** YouTube videoları emzirmeyi güçlendirmenin yeni boyutlarını sağlayarak anne eğitimi için etkili araçlar haline gelmiştir. Ancak bu videolardaki bilgilerin kalitesiyle ilgili endişeler mevcuttur. Bu çalışma, uzmanların incelediği YouTube videolarının annelerin emzirmeye yönelik tutumları üzerindeki etkilerini kapsamlı bir şekilde araştırmayı ve anne sütünün, ishale neden olan organizmaları bloke ederek çocukları ishale karşı koruduğu konusunda anneleri bilgilendirmeyi amaçlamaktadır.

**Gereç ve Yöntem:** Çalışmaya çocukları ishal nedeniyle hastaneye başvuran 42 anne dahil edildi. Katılımcılar, pediatri uzmanı tarafından onaylanan üç YouTube videosunu izlediler ve videoları izlemeden önce ve izledikten sonra Iowa Bebek Beslenme Tutum Ölçeği anketini doldurdular. Demografik veriler kaydedildi ve tutumlardaki değişiklikleri değerlendirmek için istatistiksel analizler yapıldı. Toplanan veriler Windows SPSS 15.0 Versiyonu kullanılarak analiz edildi.

**Bulgular:** 42 katılımcıdan 34'ü çalışmayı tamamladı. Anne eğitimi emzirme ile ilişkilidir. Daha önce eğitim almış annelerin YouTube videolarını izlemeden önce benzer Iowa Bebek Beslenme Tutum Ölçeği puanlarına sahip olması, videoların hem eğitilmiş hem de eğitimsiz anneler için faydalı olduğunu ortaya koymuştur. Çocuk sayısı annelerin emzirmeye ilişkin bilgi düzeylerini de etkiledi ( $p<0,05$ ). Birkaç Iowa Bebek Beslenme Tutum Ölçeği ögesi, YouTube video müdahalesinin ardından önemli tutum değişiklikleri gösterdi. Özellikle beslenmenin faydaları, demir içeriği, mama ile beslenmenin uygunluğu ve toplum içinde emzirmeye ilişkin yanlış kanılar etkili bir şekilde giderildi ( $p<0,05$ ).

**Sonuç:** Bu çalışma, YouTube videolarının anne eğitiminde, özellikle emzirme konusundaki etkisini göstermiştir. Uzmanlar tarafından incelenen ve önerilen içerikler anlayışı ve tutumları geliştirir. Önceki çalışmalar emzirmenin faydalarını vurgularken, bu çalışma ayrıca anne eğitiminin rolünü de vurgulamaktadır. YouTube videoları sağlık uzmanları tarafından sunulduğunda emziren annelere önemli ölçüde fayda sağlayabilir.

**Anahtar Kelimeler:** Emzirme, YouTube videoları, anne eğitimi, tutumlar, bebek beslemesi

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## INTRODUCTION

Breastfeeding provides numerous advantages that extend beyond the properties of human milk itself (1). It is optimal nutrition for newborns, leads to a quick adaptation to extrauterine life by boosting the immune system, is more digestible, and provides a bond between the mother and baby (2,3).

The influence of YouTube videos on maternal education and breastfeeding is profound, these videos have evolved into dynamic didactic instruments, completing the process of maternal engagement with breastfeeding with novel dimensions of empowerment. The corpus of videos, often curated by seasoned healthcare practitioners, accomplished lactation consultants, and experienced maternal figures, serves as a useful tool for mothers in the education of breastfeeding. However, previous studies demonstrated less than 20% of YouTube videos on this topic were in line with the Global Quality Score (4-6). So, these videos are more likely to be useful as long as their content is determined by expert clinicians.

This study seeks to investigate the impact of three meticulously reviewed YouTube videos outlining the advantages of breast milk, as validated by the pediatric specialist, on maternal attitudes and behaviors regarding breast milk.

## MATERIAL AND METHOD

In this study, mothers of 42 children aged 2 years and younger with the complaint of diarrhea were included in Şanlıurfa Training and Research Hospital Pediatrics

Department. A written consent form was obtained from the participants. Mothers who were illiterate and had no access to the Internet were excluded from the study.

All mothers were asked to watch 3 YouTube videos, the content of which was previously confirmed by the pediatric specialist.

### Link 1:

[https://youtu.be/\\_JViHTNNMPo?si=-KwHYmLC1liA8n7S](https://youtu.be/_JViHTNNMPo?si=-KwHYmLC1liA8n7S)

### Link 2:

<https://www.youtube.com/watch?v=QG10-yp02tc&t=3s>

### Link 3:

<https://www.youtube.com/watch?v=eYb8EvRtnug&t=363s>

These video links were given to mothers and they were asked to watch them.

The content of these three videos was ensured to include the survey questions specified in the Iowa Infant Feeding Attitude Scale (IIFAS) (Table 1), while the pediatricist also delivered an education course regarding breastfeeding.

The mothers were exposed to two IIFAS, one before the education program and the second following the completion of the task of watching YouTube videos. The mothers were also questioned about their knowledge of breast milk during the training program, and they were divided into two groups educated and uneducated. Demographic features of the mothers, including the count of children and the presence of active caretaking aides for the infants, were recorded.

**Table 1. The IIFAS principles**

The Iowa Infant Feeding Attitude Scale					
For each of the following statements, please indicate how much you agree or disagree by circling the number that most closely corresponds to your opinion (1 = strong disagreement [SD], 2 = disagreement [D], 3 = neutral [N], 4 = agreement [A], 5 = strong agreement [SA]). You may choose any number from 1 to 5.					
	SD	D	N	A	SA
1. The nutritional benefits of breast milk last only until the baby is weaned from breast milk.*	1	2	3	4	5
2. Formula-feeding is more convenient than breast-feeding*	1	2	3	4	5
3. Breast-feeding increases mother—infant bonding.	1	2	3	4	5
4. Breast milk is lacking in iron.*	1	2	3	4	5
5. Formula-fed babies are more likely to be overfed than are breast-fed babies	1	2	3	4	5
6. Formula-feeding is the better choice if a mother plans to work outside the home*	1	2	3	4	5
7. Mothers who formula-feed miss one of the great joys of motherhood.	1	2	3	4	5
8. Women should not breast-feed in public places such as restaurants.*	1	2	3	4	5
9. Babies fed breast milk are healthier than babies who are fed formula.	1	2	3	4	5
10. Breast-fed babies are more likely to be overfed than formula-fed babies.*	1	2	3	4	5
11. Fathers feel left out if a mother breast-feeds.*	1	2	3	4	5
12. Breast milk is the ideal food for babies.	1	2	3	4	5
13. Breast milk is more easily digested than formula	1	2	3	4	5
14. Breast milk is the ideal food for babies. *	1	2	3	4	5
15. Breast-feeding is more convenient than formula feeding	1	2	3	4	5
16. Breast milk is less expensive than formula.	1	2	3	4	5
17. A mother who occasionally drinks alcohol should not breast-feed her baby*	1	2	3	4	5

Note. Items marked with asterisks are reverse-scored and the scores for each item are then



All procedures were carried out in accordance with the ethical rules and the principles of the Declaration of Helsinki. The study protocol was approved by Harran University Clinical Research Ethics Board (Project Number: HRU/23.16.15), and written informed consent was obtained from all participants before their participation in the study.

**Informational Data Form:** The informational data form consists of 15 questions regarding the introduction of the child, mother, father, and family members, the child's feeding method, the status of breastfeeding, the occurrence of diarrhea, and the mother's attitude toward breastfeeding in case of diarrhea.

**Iowa Infant Feeding Attitude Scale:** The Infant Feeding Attitude Scale (IIFAS), developed by De La Mora and Russell in 1999, is designed to assess women's attitudes towards breastfeeding and predict the duration of breastfeeding, as well as the choice of infant feeding method (7). The validation and reliability study of the Turkish version was conducted by Ekşioğlu, Yeşil, and Turfan (8). The scale consists of 17 items on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). While 9 items in the scale affirm breastfeeding, 8 items contain positive statements about formula feeding. Formula feeding items are reverse scored (1=5, 2=4, 4=2, and 5=1). The total attitude score ranges from 17 (indicating a positive attitude towards bottle feeding) to 85 (reflecting a positive attitude towards breastfeeding).

### Statistical Analysis

The collected data were analyzed using SPSS Version 15.0 for Windows. Descriptive statistics were presented as means ( $\pm$  standard deviations) and percentages for continuous variables, such as age and the number of children, as well as for the distribution of participants across different literacy levels and previous education. Paired Samples t-tests were used to compare the means before and after the intervention. The chi-squared test was employed to analyze the association between literacy levels and the sufficiency of knowledge regarding breastfeeding. The percentages of mothers with sufficient knowledge in different literacy groups were compared. ANOVA was used to examine the association between the number of children mothers have and their knowledge regarding breastfeeding, as well as to compare IIFAS scores among different literacy levels. Logistic regression analysis was conducted to determine if the improvement in IIFAS scores was independent of previous education regarding breastfeeding. Correlation analysis was performed to assess the relationship between age and changes in attitude scores. A significance level of  $p < 0.05$  was considered statistically significant.

## RESULTS

Of the 42 mothers included in the study, 34 watched the videos and participated in the second questionnaire. Demographic data of the participants are given in Table 2. The mother who had education regarding breastfeeding had  $2.39 \pm 1.03$  children, while mothers with no previous education had  $1.63 \pm 0.67$  ( $p = 0.035$ ). The degree of literacy had an impact on previous education. 4 of 5 mothers (80%) who graduated from university had sufficient knowledge regarding breastfeeding while 14 of 18 (77%) mothers in the high school group and 5 of 11 (45%) in the < high-school group had a sufficient education. The second important point is the number of children that mothers have. As the number of children increased, the knowledge level of mothers about breast milk became more sufficient.

**Table 2. The demographical features of the participants**

Age, years	26.79 $\pm$ 5.19
Literacy, N	
< High-school	11
High-school	18
University	5
How many children?	2.1 $\pm$ 0.98
Previous Education, yes/no, n	23/11

Iowa Infant Feeding Attitude Scale score changed following breast feeding education and YouTube videos (**Table 3**). The participants' perceptions regarding the nutritional benefits of breast milk (Item 1), the presence of iron in breast milk (Item 4), the choice between formula-feeding and working outside the home (Item 6), and breastfeeding in public (Item 8) were notably impacted by the intervention of YouTube Videos ( $p < 0.05$ ). Items 10 and 14 (reverse-scored), 12, and 13 show improved attitudes towards breastfeeding's positive aspects, such as its health benefits and ease of digestion ( $p < 0.05$ ). While some items did not show statistically significant changes, the changes in attitude scores might still have practical implications and contribute to an overall shift in breastfeeding perception ( $p > 0.05$ ). Although the sample sizes were small we divided participants given their literacy in three groups and found higher literacy was associated with higher IIFAS scores in ANOVA test ( $p = 0.042$ ).

Logistic regression analysis revealed the improvement in the IIFAS scores was independent of previous studies ( $p = 0.256$ ). Age had no impact on the trends of IIFAS scores changes ( $p > 0.05$ ).

**Table 3. The trends in IIFAS score following the intervention by using YouTube video**

	Pre-YouTube	Post- YouTube	P value
1. The nutritional benefits of breast milk last only until the baby is weaned from breast milk.*	2.3±1.23	2.97±0.99	0.028
2. Formula-feeding is more convenient than breast-feeding*	2.45±1.30	1.58±0.66	<0.001
3. Breast-feeding increases mother—infant bonding.	4.12±0.55	4.11±0.79	0.992
4. Breast milk is lacking in iron.*	3.58±1.45	2.15±0.85	0.025
5. Formula-fed babies are more likely to be overfed than are breast-fed babies	3.85±1.12	3.96±1.02	0.912
6. Formula-feeding is the better choice if a mother plans to work outside the home*	3.87±1.01	2.15±0.87	<0.001
7. Mothers who formula-feed miss one of the great joys of motherhood.	2.14±0.54	2.65±1.12	0.112
8. Women should not breast-feed in public places such as restaurants.*	3.15±0.87	2.15±0.79	0.004
9. Babies fed breast milk are healthier than babies who are fed formula.	4.12±0.67	4.55±0.23	0.088
10. Breast-fed babies are more likely to be overfed than formula-fed babies.*	2.24±1.89	1.88±0.65	<0.001
11. Fathers feel left out if a mother breast-feeds.*	2.54±0.45	2.99±1.05	0.048
12. Breast milk is the ideal food for babies.	3.95±0.96	4.55±0.24	0.045
13. Breast milk is more easily digested than formula	3.14±2.65	3.96±0.87	0.032
14. Formula is as healthy for an infant as breast*	3.78±1.01	1.75±0.87	<0.001
15. Breast-feeding is more convenient than formula feeding	3.15±1.45	3.68±1.22	0.088
16. Breast milk is less expensive than formula.	4.32±0.45	4.65±0.12	0.189
17. A mother who occasionally drinks alcohol should not breast-feed her baby*	4.05±0.68	2.18±1.59	<0.001

Note. Items marked with asterisks are reverse-scored and the scores for each item are the

## DISCUSSION

YouTube videos as a means of disseminating information may provide new opportunities for maternal education, particularly in the context of breastfeeding. This study investigated the impact of carefully reviewed YouTube videos, endorsed by clinical experts, on maternal attitudes and behaviors related to breastfeeding. The findings of the study demonstrated that YouTube video-assisted education programs may improve the degree of acknowledgment and attitudes of mothers regarding breastfeeding.

Previous studies revealed numerous benefits of breastfeeding such as nutritional superiority, improvement of immune system and mother-newborn bonding (9,10). The most important step regarding breastfeeding is the education and healthcare support of mother (11). Similarly, this study demonstrated 80% of university-graduated mothers had sufficient knowledge regarding breastfeeding. Furthermore, It was observed that mothers with more than one child had sufficient knowledge about breast milk this highlights that in proportion to the number of children, the awareness of the mother about breast milk also develops. The validation of IIFAS was applied to many countries and found reliability in the assessment of breastfeeding (8,12,13). This study demonstrated substantially improvement in IIFAS scores following an intervention with YouTube videos. Attitudes related to the nutritional benefits of breast milk, the presence of iron in breast milk, the convenience of formula-feeding versus breastfeeding, and breastfeeding in public were notably impacted. These shifts highlight the influence of the intervention on addressing misconceptions and fostering a more accurate understanding of breastfeeding. Especially, the change in the knowledge regarding "Formula-feeding is more convenient than breast-feeding", "Formula-feeding

is the better choice if a mother plans to work outside the home", "Breast-fed babies are more likely' to be overfed than formula-fed babies", and "A mother who occasionally drinks alcohol should not breast-feed her baby" was striking.

One of the important points of the study is that mothers have to be educated about breastfeeding during each pregnancy. Our study showed that mothers who received education during their previous pregnancies had similar IIFAS scores compared to non-educated mothers, before watching YouTube videos. Therefore, both mothers who had received education before and those who hadn't benefited from the YouTube video education. Although the content of YouTube videos is not a reliable source of medical and health-related information, the content which is delivered by healthcare professionals may provide substantial benefits to breastfeeding mothers (14,15).

However, several limitations of this study warrant consideration. The sample size was relatively small, which may impact the generalizability of the findings. Additionally, the study's scope was limited to a specific population, and cultural variations might influence the applicability of the results to broader contexts. Furthermore, the assessment of changes in attitude relied solely on self-reported survey responses, potentially introducing bias.

## CONCLUSION

YouTube videos present a promising avenue for breastfeeding education, leveraging visual and dynamic content to enhance maternal understanding and empowerment. Carefully curated and expert-endorsed videos have the potential to positively

influence maternal attitudes toward breastfeeding. However, quality control and accuracy remain paramount to ensure the credibility of such videos as educational tools. Tailoring interventions to accommodate participants' educational backgrounds and demographic characteristics can further enhance the impact of breastfeeding education. Future research with larger and more diverse samples is warranted to corroborate and extend the findings of this study.

## ETHICAL DECLARATIONS

**Ethics Committee Approval:** The study was carried out with the permission of Harran University Clinical Research Ethics Committee (Date: 04/09/2023, Decision No: HRU/23.16.15).

**Informed Consent:** The mothers were first informed about the study and then signed written consent forms.

**Referee Evaluation Process:** Externally peer-reviewed.

**Conflict of Interest Statement:** The authors have no conflicts of interest to declare.

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**Author Contributions:** All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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