

# Effects of formula milk packaging design on breastfeeding Palestinian women's purchasing decisions

Mohammad Zedan Salem

## Abstract

**Background:** Although the International Code of Marketing of Breast-milk Substitutes states that 'labels should be designed to provide the necessary information about the appropriate use of the product so as not to discourage breast-feeding', baby formula manufacturers do not ignore the promotional role of packaging, and consequently use various packaging elements to intensively advertise their products, with the aim of attracting more customers.

**Objective:** This study aims to identify the effect of formula milk packaging design, including visual and verbal packaging elements, on the purchasing decisions of Palestinian women who breastfeed. No previous research has examined the issue in Palestine.

**Method:** The study was based on a cross-sectional survey, as a primary source. The survey targeted breastfeeding women in the Gaza Strip, who were reached through health institutions, between November and December 2016. A stratified sampling technique was used to select 384 study participants. In addition, face-to-face interviews were conducted using structured questionnaires to collect data from respondents. A high response rate of 94.8% was achieved, with 364 completed and usable questionnaires. The data were analyzed using a binary logistic regression model to identify the effect of formula milk packaging design on the purchasing decisions of Palestinian women who breastfeed. The statistical tool employed in this study was factor analysis. Twenty-three variables related to formula milk purchase decisions were identified.

**Results:** The findings prove that the visual packaging design of breast-milk substitutes has a positive effect on the breastfeeding Palestinian women's purchasing decisions. It was revealed that breastfeeding women in GS are four times more likely to purchase formula milk when visual and verbal packaging is used. Packaging that incorporates attractive colors, shapes and other visual characteristics seem to be effective in influencing mothers' decisions.

**Conclusions:** Visual and verbal packaging design affect the breastfeeding Palestinian women's purchasing decisions. This indicates that baby formula companies are breaching the spirit of the International Code of Marketing of Breast-milk Substitutes, at least in the Palestinian context. [*Ethiop.J. Health Dev.* 2019; 33(1):53-55]

**Keywords:** Visual packaging design, verbal packaging design, breast-milk substitutes, breastfeeding women's purchasing decisions, Palestine

## Introduction

Manufacturing companies worldwide are becoming more focused on packaging than ever before, as it is increasingly becoming a powerful marketing tool. Packaging stimulates impulsive buying behavior and reduces promotional costs (1-3). Customers' first impression resulting from packaging is usually instrumental in the purchase decision (4). As stated by Ahmed *et al.*, 'a well packaged product sells itself' (5). Beautifully-designed packages can create convenience for the consumer, as well as promotional value for the producer (6-8).

The baby formula milk industry is at the center of a controversy. In 1981, the International Code of Marketing of Breast-milk Substitutes was adopted by the World Health Assembly, the decision-making body of the World Health Organization (WHO) (9,10). The Code was developed as a global public health strategy, designed to safeguard against mothers giving up breastfeeding and to ensure the safe use of breast-milk substitutes. In order to avoid violating the Code, formula milk companies should not use packaging materials comprising pictures or text that may idealize the use of breast-milk substitutes (10). The Code recommends marketing restrictions on breast-milk substitutes, including infant formula, other milk products, infant food and beverages, bottle-fed complementary foods, feeding bottles, and teats (11,12). The Code advises that labels should be designed to provide the necessary information about

the appropriate use of the product, and so as not to discourage breast-feeding'. The Code is seen as a *minimum requirement*, with the aim of protecting and promoting breast feeding. This study aims to identify the effect of formula milk packaging design, including visual and verbal packaging elements, on the purchasing decisions of Palestinian women who breastfeed.

## Methods

A sample of 384, with a confidence level of 5%, was used, representing all the breastfeeding women in the Gaza Strip (GS). A total of 384 questionnaires were distributed in GS hospitals, as follows: 288 questionnaires (75%) to governmental hospitals and 96 (25%) to non-governmental hospitals. A high response rate of 94.8% was achieved, with 364 completed and usable questionnaires from the five areas. of the Gaza Strip (Gaza, North Gaza, Deir al-Balah, Khan Yunis, and Rafah)

The questionnaire was composed of four parts and used the 5-point Likert scales (1 = strongly disagree, 2 = disagree, 3 = no opinion, 4 = agree, and 5 = strongly agree). The questionnaire items were adopted from Salem's study (13). A pilot study was conducted to evaluate the survey's effectiveness, distributing the questionnaire to a sample of 30 breastfeeding Palestinian women. The Arabic translation and the content of the questionnaire were tested. In addition, when performing the Cronbach's Alpha test to measure

the questionnaire's reliability, a value of 0.886 was calculated, representing a significant and a highly reliable coefficient. In addition, crude and adjusted odds ratios resulting from the binary logistic regression were used to determine the relationships between the independent and dependent variables.

### Ethical considerations

This study was approved by the Scientific and Ethical Review Office of the Palestinian Public Health Institute. Consent was obtained from each hospital that participated in the study.

### Results

**Socio-demographic characteristics:** n total, 364 breastfeeding Palestinian women participated in the study. The majority of the participants were aged 30 or younger, constituting 79.3% of all respondents. Women between the ages of 31 and 40 represented 13.5% of respondents, and those aged 41 years and above accounted for 7.2% of the sample. Most

respondents (72.2%) were unemployed, while 27.8% were working mothers. In terms of educational qualifications, the largest group of respondents (35.8%) were bachelor's degree holders. Respondents with a high school education level or lower accounted for 34%; 24.5% of respondents had diplomas; 5.3% were master's degree holders; and the remaining 0.4% had PhDs.

**Hypotheses testing:** As shown in Table 1, the odds of a breastfeeding Palestinian woman making a decision to purchase formula milk with and without visual packaging design are 4.227:1. Considering verbal design, the odds are 12.942:1.

Thus, the following hypotheses can be considered as true:

**H1.** Visual packaging design affects breastfeeding Palestinian women's purchasing decisions.

**H2.** Verbal packaging design affects breastfeeding Palestinian women's purchasing decisions.

Table 1: Results of multivariate logistic regression

Factor		Crude OR <sup>a</sup> (95% CI)	Adjusted OR <sup>b</sup> (95% CI)	P value <sup>b</sup>
Employment	Employed <sup>c</sup>	1.00	1.00	
	Not employed	1.884 (1.033, 3.435)	2.047 (0.998, 4.201)	0.051
Visual packaging design	No <sup>c</sup>	1.00	1.00	
	Yes	7.749 (3.974, 15.108)	4.227 (1.936, 9.229)	<0.001
Verbal packaging design	No <sup>c</sup>	1.00	1.00	
	Yes	18.437 (8.910, 38.151)	12.942 (5.964, 28.084)	<0.001

- <sup>a</sup>Simple logistic regression,
- <sup>b</sup>Multiple logistic regression (final model)
- <sup>c</sup>Reference group

### Discussion

The statistical analysis reveals that the visual packaging design of breast-milk substitutes has a positive effect on breastfeeding Palestinian women's purchasing decisions. Breastfeeding women in GS are four times more likely to purchase formula milk when visual packaging is used. Packaging that contains attractive colors, shapes and other visual characteristics seems to be effective in influencing the women's purchasing decisions. This indicates that baby formula companies are breaching the spirit of the International Code of Marketing of Breast-milk Substitutes, at least in the Palestinian context. These findings align with findings of previous studies conducted by Olawepo and Ibojo(1), Abdullah *et al.* (3), Ahmed *et al.* (5), Piwoz and Huffman (14), Tambunan *et al.* (15), Bonia *et al.* (16) and Bylaska-Davies (17).

Verbal packaging design is even more impactful than visual packaging design, increasing the likelihood of breastfeeding Palestinian women buying formula milk by 13 times. This is due to easily remembered brand

names; informative description of the product; easy-to-follow storage information; and using local language packaging imprints.

### Conclusions

Packaging design's visual and verbal elements can positively affect breastfeeding women's purchasing decisions. In concrete terms, baby formula manufacturers do not ignore the promotional role of packaging, and consequently use various packaging elements to intensively advertise their products, aiming to attract more customers. The findings of this study indicate that the Palestinian context is consistent with other localities (as shown in previous research work), with regard to the formula milk industry breaching of the International Code of Marketing of Breast-milk Substitutes. The spirit of the Code is not followed by the industry, showing little consideration to the ethical aspects of promoting formula milk as an equivalent replacement to breastfeeding.

study of Nestlé Nigeria product. *International Business and Management*. 2015;10 (1):72-81.

2. Kunle L, Ganiyu R. Packaging and the incidence of information overload in a low-risk market: a study of

### References

1. Olawepo G, Ibojo B. The relationship between packaging and consumers purchase intention: a case

- grocery products. *European Journal of Business and Social Sciences*. 2013;1 (10):61-72.
3. Abdullah M, Kalam A, Akterujjaman S. Packaging factors determining consumer buying decision. *International Journal of Humanities and Management Sciences*. 2013;1(5):285-9.
  4. Adofo A. The effect of beauty product packaging on consumer buying decision (A case of selected shops in the New Juabeng Municipality, Ghana). *The Business & Management Review*. 2014;5(3):14-21.
  5. Ahmed R, Parmar V, Amin M. Impact of product packaging on consumer's buying behavior. *European Journal of Scientific Research*. 2014;122(2):125-34.
  6. Salem M. Factors affecting the demarketing of breast milk substitutes in Palestine. *Breastfeeding Medicine*, 2013; 8(3): 302-311.
  7. Gilaninia S, Monsef S, Soleymani F. Effect of packaging quality on performance of saffron export. *Interdisciplinary Journal of Contemporary Research in Business*. 2013;4(12):459-63.
  8. Silayoi P, Speece M. The importance of packaging attributes: a conjoint analysis approach. *European Journal of Marketing*. 2007; 41(11/12):1495-1517.
  9. World Health Organization. World Health Assembly. 2011.  
[http://www.ftse.com/Indices/FTSE4Good\\_Index\\_Series/downloads/FTSE4Good\\_Breast\\_Milk\\_Substitute\\_Criteria.pdf](http://www.ftse.com/Indices/FTSE4Good_Index_Series/downloads/FTSE4Good_Breast_Milk_Substitute_Criteria.pdf) (accessed June 21, 2011).
  10. World Health Organization. International Code of Marketing of Breast-milk Substitutes. Geneva: WHO,
  11. FTSE. FTSE4Good inclusion criteria for the marketing of breast milk substitutes. 2011. [www.ftse.com/products/downloads/F4G\\_BMS\\_Criteria.pdf](http://www.ftse.com/products/downloads/F4G_BMS_Criteria.pdf), Accessed 21 June 2011.
  12. World Health Organization. International Code of Marketing of Breast-milk Substitutes: frequently asked questions. 2008. [www.who.int/nutrition/publications/infantfeeding/Frequently\\_ask\\_question\\_Internationalcode.pdf](http://www.who.int/nutrition/publications/infantfeeding/Frequently_ask_question_Internationalcode.pdf). Accessed 05 August 2011.
  13. Salem M. Effects of perfume packaging on Basque female consumers purchase decision in Spain. *Management Decision*. 2018; 56(8):1748-68.
  14. Piwoz E, Huffman S. The impact of marketing of breast-milk substitutes on WHO-recommended breastfeeding practices. *Food and Nutrition Bulletin*. 2015;36(4):1-14.
  15. Tambunan F, Purwanegara M, Indriani M. Mothers perception, attitude, and willingness to purchase towards baby formula. *Journal of Economics and Behavioral Studies*. 2013;5 (8):511- 21.
  16. Bonia K, Twells L, Halfyard B, Ludlow V, Newhook L, Murphy-Goodridge J. A qualitative study exploring factors associated with mothers' decisions to formula-feed their infants in Newfoundland and Labrador, Canada. *BMC Public Health*. 2013;13:645.
  17. Bylaska-Davies P. The role of the mass media in women's infant feeding decisions. PhD thesis. University of Massachusetts, Worcester, 2011.