

Education and marital status of breastfeeding mothers as factors influencing the noticeability of advertisements related to infant feeding and perceived relative costs of breastfeeding

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ABSTRACT

Introduction: Contemporary commercials of infant formulas and other marketing activities do not seem to support breastfeeding among mothers. The aim of this study was to evaluate the impact of education and marital status of lactating women on the noticeability of commercials related to infant feeding and opinions on the cost of breastfeeding vs. infant formulas.

Materials and methods: The participants of the retrospective research were 450 female respondents who gave birth to a child after a 38-week single pregnancy and had already finished breastfeeding. The survey was conducted among a group of mainly

married women (69.6%) with secondary (25.6%) and university education (63.11%). It was carried out in 2016 and 2017 and its results were processed using qualitative and quantitative methods.

Results: Married and well-educated women more frequently noticed advertisements promoting infant formulas. Moreover, in their opinion, breastfeeding was cheaper than using the formulas.

Conclusions: Married and educated women more often noticed commercials of infant formulas.

Keywords: education; marital status; breastfeeding; marketing; infant formula.

INTRODUCTION

Modern healthcare systems can help young mothers in solving problems related to breastfeeding by offering professional help and support [1]. On the other hand, marketing and commercials of companies producing infant formulas can be successful in convincing mothers that the formulas are the perfect substitutes of mother's milk, especially given the many inconveniences many lactating women face in their daily life, e.g. the low availability of breastfeeding products or equipment. Moreover, according to the opinion of specialists in marketing, Polish legal regulations do not guarantee the safety of infant formulas and can result in disrupt breastfeeding. These regulations take into consideration only some WHO recommendations – mostly for infant formulas but not for bottles and teats [2]. Given this, it seems highly important to determine the awareness of mothers and factors that shape their perception of marketing strategies that affect attitudes to infant feeding. In this paper, we examined the effect of education and marital status.

MATERIALS AND METHODS

A retrospective study covered 450 women who gave birth to at least 1 child after 2011 in the hospital and had already finished

breastfeeding this child. The newborn was born over 38 weeks of a single pregnancy. The surveyed women were divided into 3 groups according to education: those with primary, secondary and university education. They were also divided according to their marital status into married and unmarried, with the latter group including those living with a partner and single mothers.

Over half of the respondents lived in large cities with a population of more than 400,000 people (55.6%), 26.89% of the breastfeeding mothers lived in cities with a population of less than 400,000 people and 17.56% of the whole group lived in rural areas.

Most of the women had university education (63.11%), ¼ of the respondents had a secondary education (25.6%) and 11.33% of women had primary education. Most of the women who took part in the study were married (69.6%), 28.9% were not married but lived with a partner, and only 1.6% were single mothers.

The average age of the surveyed women was 30.18 years. More than 1/3 breastfed their newborn for 7–12 months (34.67%), 26.89% for 3 months, 18% for 4–6 months, 17.33% for at least 1 year, and 3.11% for more than 2 years.

Qualitative methods, including focus groups, focus group interview, and quantitative methods such as a pilot study and the main method of diagnostic survey were used for conducting the study. The research tool for quantitative examination was a self-constructed questionnaire. The questionnaire contained

straightforward questions concerning basic personal data and noticeability of commercials (posters, leaflets, commercials on TV and on the Internet) associated with infant feeding – those encouraging breastfeeding and those encouraging feeding with infant formulas.

The approval of the Bioethics Committee of the Pomeranian Medical University in Szczecin (Resolution No.KB-0012/140/15 of 14.12.2015) was obtained. The material collected in the period from March 2016 to October 2017 was subjected to a statistical analysis using the R software. The comparison of the qualitative variables in the groups was made using the chi-squared test (with Yates correction for 2 x 2 tables) or Fisher's exact test for cases where the tables showed low expected numbers. A significance level of 0.05 was adopted in the analysis.

RESULTS

First and foremost, researchers were interested in the issue of the noticeability of commercials of infant formulas and products supporting breastfeeding.

Secondly, they wanted to assess if marital status and education would affect the opinion of pregnant women about products seen in advertisements. Over a half of the examined pregnant women (55.3%) had noticed only an advertisement of infant formula, 24.9% of them had seen an advertisement of infant formula and products supporting the process of breastfeeding, 17.6% of the respondents reported having seen only advertisements promoting breastfeeding products, and 2.2% of the women did not report noticing any such commercials (Tab. 1). Their results significantly depended on educational level; women who got university degrees ticked infant formula advertisements or both types of the mentioned products much more frequently than those with a low level of education.

TABLE 1. Analysis of the level of education of the respondents during pregnancy vs. noticeability of advertisements of infant formulas and breastfeeding products

Observations during pregnancy	Primary education		Secondary education		University education	
	n	%	n	%	n	%
An advertisement of infant formula	23	45.1	64	55.7	162	57.0
Products supporting the process of breastfeeding	23	45.1	25	21.7	31	10.9
Both	4	7.8	23	20.0	85	29.9
Neither of them	1	2.0	3	2.6	6	2.1

* Fisher's exact test

The connection with marital status has also been proven as significant factor. Married women more often noticed only the advertisement of infant formulas, and less often only those promoting breastfeeding products (Tab. 2).

TABLE 2. A relationship between marital status of the pregnant respondents and the noticeability of advertisements for infant formula and breastfeeding products

Observation during pregnancy	Married women		Unmarried women	
	n	%	n	%
An advertisement of infant formula	184	58.8	65	47.4
Products that promote breastfeeding	44	14.1	35	25.5
Both	78	24.9	34	24.8
Neither of them	7	2.2	3	2.2

* Fisher's exact test

More than a half of the women (56.9%) during breastfeeding saw only an advertisement of infant formula, 24% of the respondents saw an advertisement of infant formula and products that support breastfeeding, 15.3% of the surveyed females declared that they saw only adverts that encourage to breastfeed and 8% of the mothers did not see any of them (Tab. 3).

Educational level turned out to be a statistically significant factor in the research; the higher level of education, the higher the frequency of reporting an advertisement of an infant formula or both types of commercials.

TABLE 3. Analysis of the educational level of the respondents during lactation vs. noticeability of infant formulas and breastfeeding products

Observation during lactation	Primary education		Secondary education		University education	
	n	%	n	%	n	%
An advertisement of infant formula	27	52.9	66	57.4	163	57.4
Products that promote breastfeeding	20	39.2	22	19.1	27	9.5
Both	3	5.9	21	18.3	84	29.6
Neither of them	1	2.0	6	5.2	10	3.5

* Fisher's exact test

Marital status had a considerable impact on the noticeability of advertisements seen by married women. They much more often reported having seen advertisements of infant formulas and breastfeeding products and less often only products that promoted breastfeeding (Tab. 4).

TABLE 4. A correlation between marital status of breastfeeding mothers and the noticeability of advertisements of infant formulas and breastfeeding products

Observations during lactation	Married women		Unmarried women	
	n	%	n	%
An advertisement of baby formula	182	58.1	74	54.0
Breastfeeding product commercial	37	11.8	32	23.4
Both	82	26.2	26	19.0
Neither of them	12	3.8	5	3.6

* χ^2 test

The convictions of the testing women about the costs of breastfeeding and infant formulas were estimated. The conducted study portrayed that almost all the women (94.7%) believed that infant formulas are more expensive than breastfeeding. There was a correlation between the level of education and perceived costs of infant formulas relative to breastfeeding. The higher level of education, the stronger belief that breastfeeding is cheaper than using infant formulas (Tab. 5).

TABLE 5. A correlation between the education of the respondents and their opinion about the costs of breastfeeding and infant formulas

Breastfeeding is cheaper than using infant formulas	Primary education		Secondary education		University education	
	n	%	n	%	n	%
Yes	44	86.3	106	92.2	276	97.2
No	5	9.8	2	1.7	0	0.0
I do not know	2	4.0	7	6.1	8	2.8

* Fisher's exact test

There was a considerable positive correlation between the marital status of the participants and opinion that breastfeeding is less expensive than infant formulas. Unmarried women less frequently viewed breastfeeding as a cheaper one (Tab. 6).

TABLE 6. Analysis of the marital status of the respondents vs. their opinion about the costs of breastfeeding and infant formulas

Breastfeeding is cheaper than using infant formulas	Married women		Unmarried women	
	n	%	n	%
Yes	303	96.8	123	89.8
No	1	0.3	6	4.4
I do not know	9	2.9	8	5.8

* Fisher's exact test

Educational level and marital status were inspected for being valid indicators of how women during lactation assessed the availability of breastfeeding clothes. The survey showed that 40% of the mothers believed that there was a wide range of such clothes, but 1/3 (34%) disagreed (Tab. 7) – the frequency of this response positively correlated with the level of education.

TABLE 7. Correlation between educational status and the opinion of respondents on the availability of the assortment in clothing stores for breastfeeding mothers

There is a little choice of clothes for breastfeeding women in shops and stores	Primary education		Secondary education		University education	
	n	%	n	%	n	%
Yes	14	27.5	38	33.0	101	35.6
No	14	27.5	48	41.7	121	42.6
I do not know	23	45.1	29	25.2	62	21.9

* Fisher's exact test

The opinions of the surveyed women on the range of clothes for breastfeeding mothers were not related to their marital status and so we do not present these results in the article.

DISCUSSION

Despite the apparent importance of marketing activities for the social attitudes to infant feeding, few papers have addressed this issue. According to 1 analysis of social marketing as a tool used to refine health promotion programs, such programs can lead to an improvement in access to knowledge related to breastfeeding and encourage it [3]. Authors study indicates that attitudes to infant feeding depend on the educational status of mothers.

It is therefore a good idea to take a look at sources and quality of the information on the infant nutrition and lactation. The objective of the study conducted by Mierzwińska and Dębska was to determine if the knowledge of the group of parents is compatible with the current nutrition standards [4]. The research showed that the parents gained information in this area from a pediatrician (20%) and books, magazines and leaflets (approx. 17%). However, some researchers, for example Dzduk et al., are of the opinion that the Internet and television are currently the most important sources of knowledge [5].

Importantly, almost all of the examined parents in the study by Mierzwińska and Dębska claimed that breastfeeding is the most advantageous form of feeding infants [4]. The reports prepared in 2017 and 2021 "Is Poland a friendly country to a breastfeeding mother?" illustrates the significance of midwives working in health centers for the attitudes of women in the postnatal period. On one hand, they encourage mothers to breastfeed their children, but on the other hand they do not provide factual information on the short-term and long-term impact of breastfeeding on the health of women and their newborn babies. The main source of the information is still the Internet [6, 7]. Moreover, as many as 48% mothers in the postpartum period are not told that they should breastfeed their infants for at least 6 months, as recommended by the experts from all over the world [8]. Dzduk et al. confirms that a high level of education and a higher number of children correlates with the awareness of these WHO recommendations [5].

In authors research, the level of education of pregnant women also shaped their perception of advertisements of breastfeeding products and infant formulas. Nearly 11% of the surveyed women with higher education reported seeing only breastfeeding products and they did not report any advertisements of infant formulas. In contrast, the women with primary and higher education more frequently noticed newborn formula advertisements (45.1% and 21.7%).

Another study showed that a positive influence of commercials is greatly linked with the highest level of education [9]. However, one of the most important effects observed by Doliński is a lack of correlation between education and consumer behavior. For example, intelligent and well-educated people with a high awareness of psychological methods of

manipulation used in marketing do not immediately purchase an advertised product but will likely end up buying that product regardless [10]. In our study, women with university education noticed the advertisements of infant formulas more often than women with primary and vocational education. By combining this observation with the results of other studies, effective advertising of formulas may convince many women to give up breastfeeding and switch to baby formulas.

When it comes to baby food marketing, the price of a product is not always a substantial factor affecting consumer choices, as shown by Kuberska and Suchta. In their study, 34% of mothers said that the price increases would not influence their choice, compared to 33% of the surveyed who claimed that price inflation would limit their consumer choice [11]. As a consequence, household income is not directly correlated with their spendings on infant formulas. The conclusion is clear: although education and marital status are fundamental in creating the awareness of the usage of marketing strategies in infant formula commercials, it does not necessarily matter in terms of purchase.

It is alarming that only 19–25% of the pregnant women and the mothers in the prenatal period reported noticing the both the advertisements of breastfeeding products and infant formulas. In addition, marital status did not play any role here. The reason for the low response rate is the widespread availability of marketing techniques for popularizing breastfeeding products and infant formulas. Information materials, handouts and campaigns promoting healthy lifestyles are not noticeable enough. One-third of the highly educated women during pregnancy and lactation reported these deficiencies, compared to 7.8% and 5.9% women with primary education.

Although there are various explanations why people perceive breastfeeding as cheaper than using infant formula, our study shows a weak and statistically insignificant link to the marital status. Nearly all of the respondents with university education (97%) considered newborn formula products to be more expensive than breastfeeding, compared to 86% of those with primary education. The opinions of married and unmarried women did not differ significantly (96% vs. 89%). Although this was not the subject of this paper, some studies show that the level of knowledge about lactation is positively correlated with the mother's decision to breastfeed and with the duration of breastfeeding [12, 13].

The study by Tarrant et al. showed that a negative attitude to breastfeeding of women during lactation may diminish the number of women who decide to start breastfeeding their babies [14]. Canadian scientists, who studied moods and mindsets about breastfeeding a baby in public places showed that childless and less educated persons are more prone to expressing their hostile attitude to breastfeeding in public [15]. Bień et al. showed that married women, breastfeeding mothers and mothers with a single child were more likely to be tolerant to public breastfeeding [16]. Personal circumstances of women and the level of support they receive from their partner have are significant for creating the positive attitude towards lactation, the initiation of breastfeeding, and the financial aspect of breastfeeding [14].

Apart from that, 60% of the lactating mothers rely on the advice from their family members and friends [1]. It turns out there is no scientific literature or any research data that would prove the relationship between the perception of breastfeeding as a cheaper way to feed a newborn and the marital status of women, even though this correlation has been found in our research – with 96% of the married women and 89% of the unmarried females perceiving infant formulas as more expensive than breastfeeding.

Our study did not show whether there was a relationship between the perception of the commercials and the duration of breastfeeding. However, this issue should be the subject of further research due to the importance of lactation in the life of a woman and a child.

CONCLUSIONS

1. Marital status and a high level of education of women during lactation and pregnancy make them more receptive to the advertisements of infant formulas.
2. Women with a high level of education much more frequently reported having noticed advertisements of infant formulas and products associated with breastfeeding.
3. The education and marital status of women was positively correlated with the perception of breastfeeding being a cheaper way to feed a baby than using infant formulas.
4. According to educated lactating women, the range of clothes for breastfeeding mothers was unsatisfactory. Marital status did not influence their opinion in this regard.

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