BREASTFEEDING MOTHERS: TYPOLOGIES AND PROFILES

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ABSTRACT

The author conducted an empirical study with the goal of demonstrating that there are different types of breastfeeding nursing mothers depending on their knowledge, attitudes and behaviours. In addition results showed that each type of mother fits a different emotional profile, moreover each type of mother fits a different socio-demographic profile. This research leads to recommendations that may improve breastfeeding campaigns, for instances, it has been shown that there are four different segments of mothers that should receive not only different emotional treatments but also different knowledge about health and breastfeeding.

KEYWORDS

Social Marketing, breastfeeding, emotion, segmentation

1. INTRODUCTION

The correct identification of the segments of the breastfeeding mothers constitutes a basic condition for the application of successful strategies and treatments in social marketing (Andreasen 2008) and in the provision of appropriate services to the target and the hospital unit (Gerdtham and Sundberg 1998; Nakamba et al. 2002, Collins 2003; Pavlova et al. 2003). On that basis, the first research objective of this work is identifying the homogeneous groups or segments of breastfeeding whose reality could improve the representation and planning with regard to breastfeeding.

Moreover, it is often forgotten that breastfeeding is an instinct not only for the baby but also for the mother since this desired behaviour is similar to that performed by other mammals. However, that similarity of the breastfeeding response in humans and other animals does not seem to be due to common intellectual characteristics since there are clear differences in the cognitive capacities of humans and other animals: it is more likely that the reasons lie in the emotional and affective layer that is embedded throughout the animal kingdom (Guttman and Zimmerman 2000; Flacking et al. 2006). Moreover, in order to develop efficient health care strategies it is necessary to analyze customers' behaviour and study their emotions (Mark et al. 2000). Perhaps that is why the scientific literature has paid great attention to the emotions aroused by breastfeeding (Depue and Morrone-Strupinsky 2005; Klaus 1998; Bryant 2002). However, there are works that have addressed the study of each type of nursing mother; therefore, the second research objective is to understand each type of breastfeeding mother from an emotional perspective.

Finally, the scientific literature recognizes that sociodemographic characteristics have a descriptive role in the pattern of breastfeeding adoption (Callen and Pinelli 2004; Scout et al. 2001; Kruse et al. 2005), which permits the target to be identified in a visible and tangible way (Andreasen 2008). Therefore, it is logical to wonder whether the possible differentiating role that those basic characteristics displayed by women could recognize the diversity of the typologies of breastfeeding. On that basis, the third research objective is to study the association between sociodemographic features and the types of breastfeeding patterns.

This article is structured in four sections to address those objectives: (1) the review of the literature, (2) methodological aspects, (3) the analysis of results and (4) the conclusions.

2. REVIEW OF THE LITERATURE

The diversity that breastfeeding entails is more complex than could be established by considering only the different degrees of performance of this desired behaviour. On the one hand, breastfeeding behaviour may be conceived not only from a quantitative perspective, which refers to the volume and frequency of feeding, but also from a qualitative perspective, which refers to the method or correctness with which the breastfeeding is performed. Thus, there are two types of nursing mother depending on two different behavioural variables: qualitative behaviour and quantitative behaviour.

In addition, that diversity of typologies is rooted not only in conative variables but also in cognitive and evaluative variables, since mothers display differences in their ways of breastfeeding, in their knowledge and in their attitudes toward breastfeeding. In that respect, the literature highlights two cognitive and two evaluative variables.

The first cognitive variable refers to the how, when and where of breastfeeding and constitutes the mother's objective preparation for breastfeeding while the second is related to general knowledge about health and how to look after oneself (Graffy and Taylor 2005). In addition to those cognitive variables, there are two evaluative variables, namely, (1) attitude toward breastfeeding, which is defined as an opinion either in favour of it or against it (McKinley and Hyde 2004) and (2) involvement with breastfeeding, which entails an evaluation in terms of the importance, relevance, incumbency and significance of breastfeeding to the mother (Zaichkowsky 1985).

Given that diversity of cognitive, evaluative and conative variables, breastfeeding should be expected to follow more than just type or pattern of adoption and may involve the existence of different profiles with much more richness than the traditionally that recognized in the scientific literature. On that basis, the first research hypothesis is proposed:

(2003) and Holman, D. and Grimes, M. (2003). It refers not only to information about health and how to take care of oneself but also to practical information about how to breastfeed and why do so. To be specific, the respondent was asked to indicate her level of agreement with those 10 item statements on the scale, with 1 indicating the lowest level of agreement and 5 the highest.

Sociodemographic: questions on an ordinal 5-point scale for age and educational level, an ordinal 6-point scale for income and dichotomous and nominal for gender and place of residence, respectively.

4. ANALYSIS OF RESULTS

Preliminary analyses

Prior to testing the hypotheses, a factor analysis with varimax rotation was carried out on the scales used to measure the breastfeeding behaviour as well as the cognitions and evaluations related to breastfeeding. The reliability of the scales was also tested by means of Cronbach's alphas and the values obtained indicate the reliability of the dimensions under consideration.

With respect to the breastfeeding behaviour scale, the factor analysis extracts two factors with a total explained variance of 85.364%. Regarding the dimensions represented by the two factors describing the breastfeeding conduct, it should be pointed out that the first factor (cond1), which this paper labels "quality conduct", is explained by attributes mainly related to behaviours concerning what the mother eats so that her milk can be much better for baby. The second factor (cond2) defines "quality conduct" since it understands breastfeeding behaviour as a question of maintaining this desired conduct in the long term instead of giving other sources of food such as formula milk or jars of baby food.

Since two kinds of knowledge are identified, two different factor analyses were conducted. In the case of the knowledge about health scale, we found one dimension to refer to the mothers' degree of awareness of illness and wellbeing. In the case of knowledge about breastfeeding, another cognitive dimension is extracted, which not covers some operative information related to how to breastfeed but also some positive reasons for performing the desired conduct.

With regard to the factor analysis conducted on the attitude scale, we found one dimension which has been called attitude toward breastfeeding. From the scale of involvement with breastfeeding", one factor has been extracted. In this work, this factor is labelled "involvement with breastfeeding" since it comprises variables linked to how important and relevant the mother feels that the breastfeeding behaviour is (see Table 1).

TABLE 1
Exploratory Factor Analysis on cognitions, evaluations and conation

I: KNOWLEDGE ABOUT HEALTH	
I know what today's most serious illnesses are.	,893
I understand what is said about health on media	,827
In know how to look after myself.	,725
I know the principal health problems of today's society.	,700
Cronbach's alpha: 0.79; KMO: ,745, Square Chi: 415,157; gl: 6; sig. 0.000; Explained variance: 62, 408.	
I: KNOWLEDGE ABOUT BREASTFEEDING	
I know what breastfeeding consists of.	,864
I have read or seen information about breastfeeding.	,849
I know how to breastfeed a baby.	,758
I know the properties of mother's milk.	,738
Cronbach's alpha: 0.814; KMO: ,788, Square Chi: 433,015; gl: 6; sig. 0.000; Explained variance: 64, 644.	

I: ATTITUDE TOWARD BREASTFEEDING	
Negative/positive	,493
Destructive/contributive	,484
Ridiculous/Proud	,609
Imbecilic/intelligent	,704
Cronbach's alpha: 0.75; KMO: ,750, Square Chi: 284.287; gl: 6; sig. 0.000; Explained variance: 57.271	
I: INVOLVEMENT WITH BREASTFEEDING	
Means nothing to me/Means a lot to me	,419
Boring/Pleasant	,789
It is not relevant/It is very relevant	,740
It does not interest me/It interests me.	,617
Cronbach's alpha: 0.80; KMO: ,765, Square Chi: 462.637; gl: 6; sig. 0.000; Explained variance: 64.120	
I: BREASTFEEDING BEHAVIOURS	
I hold the infant in the correct position for breastfeeding.	,734
I follow a suitable diet for breastfeeding.	,736
All my baby's food consists of mother's milk.	,704
I breastfeed my baby as many times as necessary.	,807
Cronbach's alpha: 0.65; KMO: ,717, Square Chi: 246.836; gl: 6; sig. 0.000; Explained variance: 74.528	

K analysis measures for segmentation and to test Hypothesis 1

Based on the use of the factors extracted from the cognitive, evaluative and conative scales, a K means segmentation analysis was conducted to distinguish the different types of mother according to their knowledge, attitudes and behaviours regarding breastfeeding. In order to select the optimum classification and distinguish the best division of mothers, the validity of each group was tested by means of variance analysis and discriminant analysis. A four segment solution was chosen on the basis of those analyses.

TABLE 2
K means segmentation analysis

ANOVA			Error		F	Sig.	Segments			
	Square means	Df	Square means	Df			1	2	3	4
Involvement	46.547	3	.555	307	83.880	.000	-.3130	.2962	.3204	-2.3684
Attitude	51.522	3	.506	307	101.763	.000	.0734	.3157	.0383	-2.6451
K.breastfeeding	56.944	3	.453	307	125.616	.000	.2816	.5787	-1.1972	-.1438
K. health	30.199	3	.715	307	42.257	.000	-.1981	.5566	-.5832	-.8966
Behav.quality	16.992	3	.844	307	20.140	.000	-.6433	.2101	.3209	-.6529
Behav. quantity	50.739	3	.514	307	98.725	.000	-1.3074	.4540	.3136	-.1298

Segments	1	67.000
	2	142.000
	3	82.000
	4	20.000
Valid		311.000
Missing		.000
Well-classified Percentage 97.7% according to the discriminant analysis		

As shown in Table 2, the largest segment comprises almost half of the mothers (45.65%). That segment has been given the name "involved and informed" since it comprises mothers with more information about health and breastfeeding, and with a more favourable attitude to breastfeeding and performing the desired behaviour at the highest level. The second largest segment contains "involved and uninformed" mothers, represents more that a quarter of the population (26.36%) and is characterized by a very low level of knowledge about breastfeeding and general health. However, the mothers in this group are highly committed and attempt to perform breastfeeding behaviour in the best possible way. The third segment is made up of mothers who are "uninvolved" with breastfeeding and represents 21.54% of the population. The mothers in this segment have sufficient knowledge about breastfeeding but display low commitment and a negative performance of breastfeeding behaviour. The final segment comprises 6.43% of the population and these mothers are reluctant to breastfeed or opposed to breastfeeding; their profile is characterized by lack of knowledge, unfavourable attitudes and having no immediate intention to continue breastfeeding.

Krusk Wallis Analysis to test Hypothesis 2

Prior to testing the second hypothesis, a factor analysis with varimax rotation was conducted on the scale used to measure the emotions related to breastfeeding. The reliability of the scale was also tested by means of Cronbach's alpha and the scale displayed a value (0.808) that indicates the reliability of the dimension under consideration.

With regard to the factor analysis conducted on the emotional scale, nine dimensions were obtained (see Table3). The first factor (emo1), "shame and guilt", defines sentiments linked to the sense of guilt and shame of breastfeeding in public that a mother might feel. The second factor (emo2) refers to the sense of pride that a mother feels for doing her duty. The third factor (emo3) describes variables regarding "anger" after a mother performs breastfeeding behaviour because of problems and difficulties associated with breastfeeding. The fourth factor (emo4) shows a content of "empathy and bond", since it regards the mother's feeling of closeness to the baby because she is breastfeeding. The fifth factor (emo5) explains items related to feelings of tedium associated to breastfeeding, such as "boring". The sixth factor (emo6) is to do with "confidence" since the mother feels confident not only when she is breastfeeding but also because she thinks she will be successful in maintaining this desired response. The seventh factor (emo7) is called "happiness" since mothers express some sentiments of joy and pleasure since they enjoy breastfeeding. The eighth factor (emo8) refers to "disgust" since it refers to emotions that reject breastfeeding and its positive consequences. Lastly, "phobia" is the factor oriented to express the feeling of refusing to breastfeed because of fear.

TABLE 3
Exploratory Factor Analysis on emotions

	Components								
	1	2	3	4	5	6	7	8	9
I feel embarrassed to breastfeed in public.	,69	,42	,01	-,18	-,08	-,06	,04	,24	,15
I go into my shell if I breastfeed in front of other people.	-,69	,28	,28	-,07	,06	-,12	,31	-,11	,07
I am shy of breastfeeding in front of other people.	-,69	,20	,28	,09	-,08	-,10	,21	-,23	,15
Breastfeeding in public is very daring for me.	,69	,45	,02	-,23	-,08	-,01	,00	,26	,14
I feel ashamed to breastfeed in public.	,67	,29	,13	-,00	-,23	-,09	,11	,34	,21
In consider it bad taste to breastfeed in public.	,66	,12	,06	,06	,46	,11	-,05	-,05	,19
I have more self-respect since I have been breastfeeding my baby.	-,65	,17	,27	,03	,00	-,16	,32	-,25	,12
I feel a certain self-admiration for breastfeeding.	,64	,49	,03	-,20	-,20	-,02	-,04	,04	,13
I boast, or could boast, about breastfeeding.	-,63	,23	,22	-,09	,14	-,14	,30	,06	,10
I am the best at breastfeeding.	,63	,34	,04	-,12	-,16	,00	,01	,39	,17

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I boast, or could boast, about breastfeeding.	-,63	,23	,22	-,09	,14	-,14	,30	,06	,10
I am the best at breastfeeding.	,63	,34	,04	-,12	-,16	,00	,01	,39	,17

I feel proud of breastfeeding.	,61	,11	,17	,15	,35	,01	-,00	-,13	,35
Breastfeeding is a pleasure for me.	,61	,52	,15	-,22	-,11	-,02	,01	-,19	-,20
I get angry with myself when I breastfeed.	-,60	,29	,24	-,14	,12	,08	,24	,04	,04
I feel angry if I breastfeed.	,59	,14	,09	-,05	,52	-,13	-,05	-,17	,11
Breastfeeding is something that irritates me.	-,57	,35	,45	,12	,09	-,06	-,29	-,01	,01
Just thinking about having to breastfeed puts me in a bad mood.	,56	,17	-,07	-,13	,45	,22	-,16	-,12	,15
Having to breastfeed annoys me.	,55	,51	,03	-,08	-,04	-,25	,09	-,09	-,17
Breastfeeding is an experience that brings me and my baby closer	-,55	,34	-,45	,20	,20	-,05	,09	,20	-,05
I can feel better when breastfeeding my baby.	,55	,52	,03	-,25	,01	,02	,05	-,13	-,37
When I breastfeed my baby. I can feel maternal love.	-,54	,35	,42	,26	-,03	,02	-,32	,02	-,01
Breastfeeding is an affective bond between me and my baby.	-,54	,27	,15	-,01	-,26	,52	,16	-,05	,14
Breastfeeding your baby is like building an affective bond.	-,53	,32	,49	,27	,04	-,01	-,33	,14	-,12
I feel physically and emotionally bored when I breastfeed.	,52	,49	,10	-,33	,05	,03	,08	-,12	-,28
Breastfeeding is becoming a great sacrifice for me.	,52	-,02	,09	,52	-,09	,23	,04	-,18	-,18
I admire mothers who stop breastfeeding their babies.	,52	,03	,14	,49	,03	-,47	,04	-,05	-,09
I am tired of breastfeeding.	-,46	,28	,26	-,08	-,00	,10	,39	-,25	,08
Breastfeeding is really tedious.	,54	,57	,01	-,29	-,03	,09	,00	-,10	-,27
I get depressed thinking about breastfeeding.	-,41	,51	-,64	,20	-,00	-,06	-,09	-,08	,05
I feel prepared to breastfeed.	-,46	,47	-,63	,24	-,02	-,08	-,06	-,04	,08
I feel that I have accomplished the task of breastfeeding.	-,50	,43	-,60	,21	,09	-,10	-,05	-,01	-,00
I feel that I will be able to breastfeed for the correct period of time.	-,46	,52	-,57	,25	-,05	-,10	-,04	-,09	,05
I feel confident when breastfeeding.	-,55	,34	,57	,18	,11	-,08	-,28	,08	,00
I believe in my ability to breastfeed.	-,54	,33	,56	,17	,02	-,00	-,32	,12	-,08
I feel content when breastfeeding.	-,41	,50	-,55	,11	-,09	,18	-,11	-,00	,04
I have a feeling of triumph when breastfeeding.	,49	,01	,08	,66	-,02	,22	,19	-,01	-,11
I experience emotions of joy and pleasure when breastfeeding.	,58	,10	,10	,63	-,14	,13	,11	,03	,02
It is a delight to be able to breastfeed.	,59	,04	,06	,61	-,07	,20	,16	,01	,00
I experience anxiety when breastfeeding.	,56	,06	,08	,61	-,06	,25	,12	,00	-,08
I feel very close to my baby when breastfeeding.	,55	,10	-,06	,04	,56	,22	-,11	-,15	,18
I would sometimes like to stop breastfeeding.	-,33	,04	-,07	,00	,46	,01	,24	,25	-,24
I feel happy when breastfeeding.	-,38	,24	,08	-,20	-,13	,72	,01	,11	,13
The truth is that breastfeeding is giving me a phobia.	,49	,09	,12	,24	-,22	-,54	,10	,00	,26
Breastfeeding makes me apprehensive.	-,31	,02	-,00	,15	,51	-,01	,37	,51	-,21

A Kruskas Wallis test was then conducted in order to measure the degree of association between the segment to which mothers belong and their emotions (see Table 4). That test reveals that the feelings of pride, anger, confidence and happiness display the most significant relationships. More specifically, the proudest mothers are those most committed to breastfeeding, while anger characterizes the group of uncommitted nursing mothers. Similarly, confidence is a characteristic of committed, informed mothers while happiness is typical of mothers, especially the less informed, belonging to the committed groups. Thus, Hypothesis 2, which states that "*each type of mother fits a different emotional profile*", is confirmed.

TABLE 4
Kruskas Wallis Test among emotion factor and segment

	Initial number of cases	N	Mean level	Chi-square	Gl	Sig
emo1	1	67	170.45			
	2	142	147.81	3.144	3	0.370
	3	82	156.05			
	4	20	165.55			
	Total	311				
emo2	1	67	103.45			
	2	142	170.10	47.188	3	0.000
	3	82	189.48			
	4	20	94.70			
	Total	311				
emo3	1	67	108.54			
	2	142	166.04	24.469	3	0.000
	3	82	171.15			
	4	20	181.65			
	Total	311				
emo4	1	67	161.37			
	2	142	166.19	6.782	3	0.079
	3	82	142.06			
	4	20	122.80			
	Total	311				
emo5	1	67	157.18			
	2	142	160.99	1.882	3	0.597
	3	82	151.90			
	4	20	133.45			
	Total	311				
emo6	1	67	125.88			
	2	142	175.29	15.733	3	0.001
	3	82	153.33			
	4	20	130.90			
	Total	311				
emo7	1	67	116.21			
	2	142	159.73	25.818	3	0.000
	3	82	188.44			
	4	20	129.80			
	Total	311				
emo8	1	67	158.07			
	2	142	145.89	4.664	3	0.198
	3	82	172.60			
	4	20	152.75			
	Total	311				
emo9	1	67	151.10			
	2	142	164.47	2.693	3	0.441
	3	82	149.82			
	4	20	137.60			
	Total	311				

Analysis of contingency tables to test Hypothesis 3

In order to complete the description of the segments, an analysis of contingency tables was conducted between the sociodemographic characteristics and the segment to which mothers belong (see Tables 5, 6 and 7). In light of the results obtained, it can be affirmed that each of the identified segments, except that of "committed and informed" mothers, displays a specific sociodemographic profile in terms of age, place of residence and working life. To be more specific, it is clear that the "committed and uniformed" segment comprises mothers living in rural areas. Moreover, the "uncommitted and informed" segment is characterized by mothers between 26 and 30 years of age, working mothers living in rural areas, and the absence of mothers between 31 and 40. Finally, the "reluctant" segment comprises younger mothers who are 17 or 18 years of age and without gainful employment.

TABLE 5

Analysis of the contingency coefficient between age and segment

		Age							Total
		17-18	19-25	26-30	31-35	36-40	41-45	>46	
Segment 1	Recount	1	12	27	15	9	2	1	67
	% total	.3%	3.9%	8.7%	4.8%	2.9%	.6%	.3%	21.5%
	Corrected residuals	-1.0	1.5	2.4	-2.3	-1.2	.7	1.9	
Segment 2	Recount	5	15	39	52	28	3	0	142
	% total	1.6%	4.8%	12.5%	16.7%	9.0%	1.0%	.0%	45.7%
	Corrected residuals	.0	-1.0	-.4	.8	.4	.2	-.9	
Segment 3	Recount	2	8	19	32	20	1	0	82
	% total	.6%	2.6%	6.1%	10.3%	6.4%	.3%	.0%	26.4%
	Corrected residuals	-.6	-.9	-1.3	1.0	1.6	-.5	-.6	
Segment 4	Recount	3	4	4	8	1	0	0	20
	%total	1.0%	1.3%	1.3%	2.6%	.3%	.0%	.0%	6.4%
	Corrected residuals	2.9	1.0	.9	.5	-1.6	-.6	-.3	
Recount		11	39	89	107	58	6	1	311
% total		3.5%	12.5%	28.6%	34.4%	18.6%	1.9%	.3%	100.0%
Value of contingency coefficient: 0.294; Approximate significance: 0.044									

TABLE 6

Analysis of the contingency coefficient between area of residence and segment

		Area of residence		
		Urban	**Rural**	**Total**
Segment 1	Recount	66	1	67
	% del total	21.2%	.3%	21.5%
	Corrected residuals	3.2	-3.2	
Segment 2	Recount	122	20	142
	% del total	39.2%	6.4%	45.7%
	Corrected residuals	-.4	.4	
Segment 3	Recount	63	19	82
	% del total	20.3%	6.1%	26.4%
	Corrected residuals	-3.1	3.1	
Segment 4	Recount	19	1	20
	% del total	6.1%	.3%	6.4%
	Corrected residuals	1.1	-1.1	
Recount		270	41	311
% del total		86.8%	13.2%	100.0%
Value of contingency coefficient: 0.224; Approximate significance: 0.001				

TABLE 7

Analysis of the contingency coefficient between whether the mother has gainful employment and the segment to which she belongs

		Do you have gainful employment?		
		Yes	**No**	
Segment 1	Recount	54	13	67
	% del total	17.4%	4.2%	21.5%
	Corrected residuals	2.7	-2.7	
Segment 2	Recount	89	53	142
	% del total	28.6%	17.0%	45.7%
	Corrected residuals	-1.4	1.4	

		Do you have gainful employment?		
		Yes	**No**	
Segment 3	Recount	57	25	82
	% del total	18.3%	8.0%	26.4%
	Corrected residuals	.6	-.6	
Segment 4	Recount	8	12	20
	% del total	2.6%	3.9%	6.4%
	Corrected residuals	-2.6	2.6	
Recount		208	103	311
% del total		66.9%	33.1%	100.0%
Value of contingency coefficient: 0.205; Approximate significance: 0.003				

However, the characteristics of age and income are not associated with any particular segment, which is consistent with the classic or educational model not being the model most representative of breastfeeding mothers. Moreover, on the basis of the above, there is no reason not to state that *"each type of mother fits a different sociodemographic profile*", which confirms Hypothesis 3.

5. CONCLUSIONS

We should change our minds about breastfeeding in three senses. Firstly, there is no single model of the breastfeeding response but a range of segments whose typology is explained according to the cognitive, evaluative and behavioural characteristics of breastfeeding by the mothers. Secondly, emotions acquire a certain importance, which confirms the instinctive, non-intellectual nature of breastfeeding. Finally, each segment has a sociodemographic profile providing significant evidence that the educational level does not influence the breastfeeding pattern, which is consistent with the classic or educational model not being the most representative of the desired behaviour. Thus, from a theoretical point of view, it is necessary to understand the breastfeeding phenomenon as an issue of multiple and varied choice whose new paradigm recognizes the importance of emotional or instinctive aspects of this natural response as well as its traditional influence from custom.

From an implicative point of view, it has been shown that there are four different segments of mothers that not only are represented by four different models of breastfeeding adoption but should also receive different treatments. Thus, it seems logical to recommend that greater effort be devoted to informative campaigns about how to breastfeed and about health in rural areas than in urban zones, since most of the mothers in the committed and uninformed segment live in the country. That lack of knowledge in the rural world might be due to the fact that the hierarchy of effect through which information is processed has an emotional character while the hierarchies of effect selected for this group of mothers are those of impulsiveness and dissonance. Therefore, persuasion strategies should take advantage of the channels in the breastfeeding mother's normal surroundings, for example her family environment and custom, and place special emphasis on eliminating the contradictions and incoherencies that lead these mothers to experience dissonance and impulsiveness.

Moreover, a different emotional treatment is recommended for each of the identified segments since it has been shown that each group of nursing mothers displays a distinct affectivity. More specifically, in order to favour the mothers' wellbeing, the objective of a promotion should be the mothers' commitment to breastfeeding since the positive emotions of pride, confidence and happiness are aroused in the groups of more involved and committed mothers. However, since the levels of the negative emotion of anger or rage are lower in the more informed groups, it is logical to infer that, while the provision of information is a suitable antidote to that negative emotion, it is not the most effective tool to favour commitment since a significant segment of mothers displays commitment but lacks information. Hence, it has been shown that information is not the key to success in achieving a model of high-commitment to breastfeeding; it is only an emotional barrier against unease and the feeling of annoyance or anger.

In addition, a problem of lack of commitment was detected in mothers aged between 18 and 26 who are in gainful employment and live in rural environments. The policy to be applied to this group of mothers should be designed according to the inverse learning model, which places great importance on practical experience as a source of knowledge. For example, the aim would be to induce the adoption of breastfeeding by means of the "foot in the door" technique, which consists of facilitating a short-term trial of the desired behaviour that would serve to gradually initiate greater commitment. In parallel, since the attitude of this group of mothers displays a certain indifference, it is necessary to enhance their evaluation of breastfeeding by means of reward, such as a draw or raffle among breastfeeding mothers: lastly, it would be interesting to provide basic information about health since the mothers in this group lack this cognitive resource that is so necessary for them to perform the breastfeeding behaviour with clearly favourable attitudes.

Finally, it has been shown that the profile of mothers who are reluctant to breastfeed is strongly defined as very young mothers of 17 or 18 years of age with no gainful employment. Therefore, it could be said that reluctance to breastfeed is part of a much larger problem of unwanted pregnancies and difficulties associated with too much responsibility for women who are so young. Hence, there is no doubt that the recommendations go beyond the field of breastfeeding to include much broader policies such as sex education and the prevention of unwanted pregnancies.

REFERENCES

- American Academy of Pediatrics (1982) The promotion of breastfeeding: policy statement based on task force report. Pediatrics 69: 654-661
- American Public Health Association (1981) American Public Health association Policy Statement: infant feeding in the United States. American Journal of Public Health 71: 207-212
- Andreasen A (2008) Social marketing in the 21 century. Sage books
- Avoa A, Fisher P (1990) The influence of perinatal instruction about breastfeeding on neonatal weight loss. Pediatrics 86 2: 313-315
- Bernaix L (2000) Nurses' Attitudes, Subjective Norms, and Behavioral Intentions Toward Support of Breastfeeding Mothers. Journal of Human Lactation 16 3: 201-209
- Bezner R, Dakishoni L, Shumba L, Msachi R. and Chirwa M (2008) We grandmothers know plenty: breastfeeding, complementary feeding and multifaceted role of grandmothers in Malawi. Social Science and Medicine 66: 1095-1105
- Bryant C (2002) Breastfeeding: Loving Support Makes Breastfeeding Work. In Kotler P, Robert N and Lee N. Social Marketing: Improving the Quality of Life. (pp. 57-59). Thousand Oaks, CA: Sage Publications
- Callen J and Pinelli J (2004) Incidence and duration of breastfeeding for terms infants in Canada, United States, Europe and Australia: a literature review
- Cattaneo A, Yngve A, Koletzko B and Guzman L (2005) Breastfeeding in Europe: a blue print for action. Journal of Public Health Nutritions 13: 89-96
- Centers for Disease Control and Prevention (2004) CDCynergy Social marketing Edition: your guide to audience-based program planning
- Chabrol H, Walburg F, Teissedre F, Armitage J and Santrisse K (2004) Influence of mother's perceptions on the choice of breastfeed or bottle feed: perceptions and feedings choice. Journal of Reproductive and Infant Psychology 22 3: 189-198
- Collins T (2003) Globalization, global health and access to healthcare. International Journal of Health Planning and Management 18: 97-104
- Cowdery R and Knudson-Martin C (2005) The construction of motherhood: tasks, relational connection, and gender equality. Family Relations 54: 335-345.
- Cronin C (2003) First time mothers: identifying their needs, perceptions and experiences. Journal of Clinical Nursing 12: 260-267
- Depue R and Morrone-Strupinsky J (2005) A neurobehavioral model of affiliative bonding: implications for conceptualizing a human trait of affiliation. Behavioral and Brain Sciences 28: 313-395

- Duckett L, Henly S, Avery M, Potter S, Hills-Bonczyk S, Hulden R and Savik K (1998) A theory of planned behaviour-based structural model for breast-feeding. Nursing Research 47(6): 325–336
- Earle S (2002) Factors affecting the initiation of breastfeeding: implications for breastfeeding promotion. Health Promotion International 17 3: 205-214
- Flacking R, Ewald U, Hedberg K, Starrin B (2006) Trustful bonds: a key to becoming a mother and to reciprocal breastfeeding. Stories of mothers of very preterm infants at a neonatal unit. Social Science and Medicine 62: 70-80.
- Fridinger F, Alfonso M, Hussain A, Bryant C, Ruowei L, Benton-Davis S, Grummer-Strawn L (2003) A multi-year profile of public beliefs and attitudes regarding breastfeeding practices. Social Marketing Quarterly 9 4: 32
- Gerdtham U and Sundbrg G (1998) Redistributive effects of Swedish health care finance. International Journal of Health Planning Management 13: 289-306
- Giles M, Conner S, McClenahan C, Mallet J, Stewart-Knox B and Wright M (2007) Measuring young people's attitudes to breastfeeding using the Theory of Planned Behaviour. Journal of Public Health 29 1:17-26
- Göksen F (2002) Normative versus attitudinal considerations in breastfeeding behaviour: multifaceted social influences in a developing country context. Social Science and Medicine 54: 1743-1753
- Graffy J and Taylor J (2005) What information, advice and support do women want with breastfeeding? Birth 32 3: 179-186
- Griffiths L, Rosemary A, Dezateux C and The Millennium Cohort Study Child Health Group (2005) The contribution of parental and community ethnicity to breastfeeding practices: evidence from the Millennium Cohort Study. International Journal of Epidemiology 34:1378–1386
- Guttman N and Salmon C (2004) Guilt, fear, stigma and knowledge gaps: ethical issues in public health communications interventions. Bioethics 18 6: 531-552
- Guttmann N and Zimmerman D (2000) Low-income mothers' views on breastfeeding. Social Science and Medicine 50: 1457-1473
- Holman D and Grimes M (2003) Patterns for the initiation of breastfeeding in human. American Journal of Human Biology, 15: 765-780
- Huang H, Wong S and Chen C (2004) Body image, maternal fetal attachment and choice of infant feeding method: a study in Taiwan. Birth 31 3: 183-188
- Humphreys AS, Thompson NJ and Miner KR (1998) Assessment of breastfeeding intention using the transtheoretical model and the theory of reasoned action. Health Education Research 13 3: 331–341
- Ingram J, Redshaw M and Harris A (1994) Breastfeeding in neonatal care. British Journal of Midwifery 2 9: 412-418
- Jain A and Bongaarts J (1981) Breastfeeding patterns, correlates and fertility effects, Studies in family planning 12 3: 79-99.
- Jones N, Mcfall B and Diego M (2004) Patterns of brain electrical activity in infants of depressed mothers who breastfeed and bottle feed: the moderating role of infant temperament. Biological Psychology 67: 103-124
- Klaus M (1998) Mother and infant: early emotional ties. Piedratics 102: 1244-1246
- Kotler P, Roberto N and Lee N (2002) Social Marketing: improving the quality of life. Sage Publications
- Kruse L, Denk C, Feldman L and Mojita F (2005) Comparing sociodemographic and hospital influences on breastfeeding initiation. Birth 32, 2: 81-85
- Lee H, Rubio M, Elo I, Mccollum K, Chung E, Culhane J (2005) Factors Associated with Intention to Breastfeed Among Low-Income, Inner-City Pregnant Women. Maternal and Child Health Journal 9 3: 253-261

- Leung T, Tam W, Hung E, Fok T, Wong G (2003) Sociodemographic and atopic factors affecting breastfeeding intention in Chinese mothers. Journal of Paediatric Child Health 39: 460-464
- Mark A, Pencheon D, Elliot R (2000) Demanding Health care. International journal of Health Planning and Management, 15: 237-253.
- Martens PJ and Young TK (1997) Determinants of breastfeeding in four Canadian Ojibwa communities: a decision-making model. American Journal of Human Biology 9: 579–593.
- McKee M, Zayas L and Jankowski K (2004) Breastfeeding intention and practice in an urban minority population: relationship to maternal depressive symptoms and mother-infant closeness. Journal of Reproductive and Infant Psychology 22 3: 167-181
- McKinley N and Hyde J (2004) Personal attitudes or structural factors? A contextual analysis of breastfeeding duration. Psychology of Women Quarterly 28: 388-399
- Mitra A, Khoiny A, Hinton A and Carothers C (2004) Predictors of breastfeeding intention among low-income women. Maternal and Child Health Journal 8 2: 65-70
- Nakamba P, Hanson K and McPake B (2002) Markets for hospital services in Zambia. International Journal of Health Planning and Management 17: 229-247
- Pavlova M, Groot W and Merode G. (2003) The importance of quality, access and price to health care consumers in Bulgaria: a self-explicated approach. International Journal of Health Planning and Management 18: 343-361
- Pechlivani F, Vassilakou T, Sarafidou J, Zachou T, Costas A and Sidossis L (2005) Prevalence and determinants of exclusive breastfeeding during hospital stay in the area of Athens, Greece Acta Pædiatrica: 928–934
- Peters E, Wehkamp K, Felberbaum R, Kruger D, Linder R (2005) Breastfeeding duration is determined by only a few factors. European Journal of Public Health 16 2: 162-167
- Shirima R, Gebre-Medhin M and Greiner T (2001) Information and socioeconomic factors associated with early breastfeeding practices in rural and urban Morogoro, Tanzania Acta Paetriatic 90: 936-942
- Schmied V and Lupton D (2001) Blurring the boundaries: breastfeeding and maternal subjectivity. Sociology of Health and Illness 23 2: 234-250
- Scout J, Landers M, Hughgues R and Binns C (2001) Factors associated to breastfeeding at discharge and duration of breastfeeding. Journal of Paediatrics Child Health 37: 254-261
- Swanson V and Power K (2004) Initiation and continuation of breastfeeding: The theory of planned behaviour. Journal of Advance Nursing 50 3: 272-282
- Wambach K (1997) Breastfeeding intention and outcome: a test of the theory of planned behavior. Research in Nursing and Health 20: 51-59
- Vaughn R (1980) How advertising works: a planning model. Journal of Advertising Research 20 5: 27-33
- Westbrook R and Oliver R (1991) The dimensionality of consumption emotion patterns and consumer satisfaction. Journal of Consumer Research 18: 84-91
- Wojnar D (2004) Maternal perceptions of early breastfeeding experiences and breastfeeding outcomes at 6 weeks. Clinical Effectiveness in Nursing 8: 93-100
- Zaichkowsky J (1985) Measuring the involvement construct. Journal of Consumer Research 12: 341-352.