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Autonomous motivation, self-efficacy and psycho-physical well-being in a group of Polish breastfeeding mothers: preliminary communication

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Summary

Aim: The decision to quit breastfeeding is strongly influenced by feelings such as physical or psychological fatigue. Research shows that women with higher levels of breastfeeding self-efficacy are able to better cope with difficulties and continue to breastfeed for longer. The purpose of this study was to find out whether the autonomy of a mother's motivation has an effect on her breastfeeding self-efficacy. Furthermore, the study examined the relationship between breastfeeding self-efficacy and such indicators of well-being as the frequency of experiencing positive and negative emotions, life satisfaction and the occurrence of somatic symptoms.

Method: The sample consisted of 93 breastfeeding mothers aged 21 to 42 years. The survey was conducted online. Participants answered a questionnaire measuring their level of autonomous motivation to breastfeed, their breastfeeding self-efficacy, the level of somatic stress experienced, the frequency of experiencing positive and negative emotions, and life satisfaction.

Results: The results of the study confirmed that the more autonomous the mother's motivation to breastfeed her baby, the higher her breastfeeding self-efficacy. Self-efficacy turned out to be a significant predictor of the frequency of experiencing positive emotions, negative emotions, and somatic stress symptoms. No relationship was found between the mother's self-efficacy and her reported life satisfaction.

Conclusions: Autonomous motivation in breastfeeding mothers has a positive effect on their breastfeeding self-efficacy. The higher the breastfeeding self-efficacy, the more positive the breastfeeding mothers' subjective experiences. High breastfeeding self-efficacy, which has a positive effect on the mother's well-being, may also contribute to longer duration of breastfeeding.

breastfeeding, breastfeeding self-efficacy, autonomous motivation, psycho-physical well-being

According to recommendations from the World Health Organization (WHO), breastfeeding (or natural feeding) is the "gold standard" in feeding infants. It is emphasized that breastfeeding is linked to numerous desired health and emotional outcomes, both for the baby and for the mother, bringing a range of social and economic benefits. Importantly, however, these positive effects of breastfeeding depend on its duration. According to the WHO, and other healthcare organizations, the optimal method is exclusive breastfeeding for the first 6 months of life, with continued breastfeeding up to the age of 12 months or longer [1–4].

In response to these recommendations and numerous empirical studies supporting the advantages of natural infant feeding, programs and social campaigns have been implemented in Poland to promote natural feeding of in-

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fants. For example, the Regulation of the Minister of Health of 20 September 2012, describing the procedures of care provided for a woman and her child during pregnancy, labor and delivery, the confinement period and neonatal care introduced the so-called "perinatal care standard". It obliges individuals who provide medical care for a pregnant woman or a mother of a newborn or an infant, not only to encourage the mother to breastfeed her baby, but also to teach her the appropriate breastfeeding principles [3–6]. However, lactation specialists in Poland believe the existing efforts to promote natural infant feeding are insufficient, and identify at least three main groups of factors that may be regarded as barriers to breastfeeding: insufficient knowledge about lactation among healthcare personnel; the common practice of supplementary feeding of newborns in maternity hospitals; and lack of lactation counselling for women who have left hospital [7–10].

Several studies confirm that in virtually all countries the WHO recommendations on natural infant feeding are not followed in everyday practice. Poland is not an exception. What is more, some evidence suggests the situation in the country has been gradually deteriorating. Although Poland is among the 10 European countries with the highest proportion of mothers who start breastfeeding their babies, the number of women who continue to breastfeed decreases substantially by the end of the first month, to less than 50% after 6 weeks [6–8,11–14].

If data analyses show significant differences between the number of women who start breastfeeding and those who continue over the subsequent months, it seems that apart from the aforementioned barriers to breastfeeding, problems may also be explained in terms of psychological theories of motivation. Experimental studies on motivation are commonly applied in health psychology, a discipline which aims to join in multidisciplinary research focusing on health promotion by identifying factors that facilitate health behaviors undertaken to improve or maintain good health [15]. At a later stage, such research may become a basis for effective interventions or programs promoting specific health behaviors, such as breastfeeding [13].

Researchers studying motivation emphasize that to fully explain an action, it is necessary to identify its various stages. It is especially important because merely initiating an action does not necessarily mean it will be continued with perseverance [16–18]. Additionally, it is emphasized that the role of factors regarded as significant for the success of an action may change from stage to stage [19]. Sansone & Harackiewicz [20] describe two types of motivation behind goal-oriented activity. According to the authors, whether an action is taken or not is determined, as predicted by the "expectancy-value" model, by the value of the expected outcome and the probability of its attainment (outcome-derived motivation), and whether the action is continued depends on the capacity for positive commitment (process-derived motivation). The model suggests that a woman's initial decision to breastfeed her baby may be significantly influenced by such factors as knowledge about the health benefits of breastfeeding (both for the mother and for the child) and her confidence in her ability to feed the baby. At a later stage, the mother's subjective experiences, either positive or negative, may play an important role, influencing her decision about whether to continue breastfeeding [20].

To some extent, this way of thinking is supported by the study conducted by Wawak-Sobierajska [13], who posed two questions: (1) What factors contribute to a woman's choice not to breastfeed?; (2) What factors determine her decision to discontinue breastfeeding? The researcher showed that the decision to breastfeed was determined by factors such as perceiving the positive effects of natural feeding, seeing this way of feeding as consistent with the social norm, and the degree of behavioral control. The decision to quit breastfeeding was usually caused by the negative effect of breastfeeding on the mother's health and well-being. When explaining their decision to stop breastfeeding, participants mentioned physical fatigue and psychological tiredness described as a feeling of "being imprisoned" or "being deprived of personal freedom", and also some negative changes in their physical appearance. Secondarily, participants mentioned problems with their breasts and inadequate milk supply or low quality of their breastmilk. The study confirms that different factors have an effect on the two important stages in natural infant feeding: the moth-

er's decision to breastfeed and her choice to continue this way of feeding over the subsequent months [13].

According to Dennis, one important psychological variable influencing both the choice to breastfeed and the decision to continue is a special kind of self-efficacy related specifically to the mother's self-perceived breastfeeding competence [21–24]. The concept of self-efficacy was first introduced by Bandura, who defined it as an individual's belief that they have the skills or abilities necessary to attain a specific goal. Bandura emphasized the need to conduct "microanalytical studies" that make it possible to assess an individual's self-efficacy related to specific areas of their activity. In other words, he assumed self-efficacy was not general, but rather behavior-specific – each person can have different levels of self-efficacy in different areas of activity. Self-efficacy influences people's decisions to take action and the way they respond to obstacles or failure. As a result, it determines their perseverance and how the outcomes of their actions influence both their level of satisfaction with their activity and their general well-being [25].

Based on Bandura's theory, Dennis proposed the concept of "breastfeeding self-efficacy", which reflects a mother's confidence in her breastfeeding skills. The Breastfeeding Self-Efficacy Scale (BSES), developed on the basis of this concept, measures breastfeeding self-efficacy and has been used in studies conducted in more than 30 countries (including Poland) [26]. Research has confirmed that breastfeeding self-efficacy is a good predictor of whether a woman will choose to breastfeed her child, how much effort she will put into it, whether she will be able to motivate herself positively, and how she will emotionally respond to difficulties and failure. Dennis believes that comparing to other factors influencing the choice to breastfeed and the decision to continue, breastfeeding self-efficacy is relatively more easily shaped. Given the research evidence showing that breastfeeding self-efficacy has a positive effect on the duration of breastfeeding, understanding the conditions that facilitate the development of this specific type of self-efficacy seems particularly important [21–24,26].

According to the self-determination theory (SDT) developed by Ryan & Deci [27], self-efficacy is closely linked to autonomous motivation guiding a specific action. Within SDT, autonomy refers to the way in which various reasons for action, both internal and external, are integrated with the self-system. In other words, autonomy reflects the difference between an individual's commitment to an activity which is consistent with his or her personal values, interests and needs, and an activity taken under pressure or compulsion or as an unreflective response to the situation. From the perspective of SDT, non-autonomous functioning is demonstrated both by people who passively submit to external influences, and as a result undertake actions that are essentially inconsistent with their self, and those who are not aware of their needs and values, and consequently are also externally controlled [27].

According to Ryan and Deci, motivation can be seen as a continuum between amotivation and the most autonomous form of motivation – intrinsic motivation. Several types of extrinsic motivation are in-between, varying in the extent to which regulation of behavior based on each type is linked to the experience of autonomy. The least autonomous form of motivation is external regulation, in which an individual takes action to avoid external punishment (e.g. disapproval) or obtain an external reward (e.g. praise). Another example of non-autonomous motivation is introjection. In this case behavior is regulated by the desire to avoid negative feelings such as guilt, shame and anxiety, or by the need to enhance one's self-esteem. In introjection, the standards are internalized, but the individual does not regard them as their own, does not understand their meaning, and does not accept them. Both external regulation and introjection are described by Ryan and Deci as examples of non-autonomous motivations related to pressure and control. In external regulation the pressure is external, whereas in introjection it takes the form of internal compulsion [28–30].

Two other forms of motivation are definitely more autonomous. Identification refers to motivation in which an individual consciously accepts and recognizes the value of a type of behavior, whereas integration occurs when the value and meaning of behavior is integrated with the individual's self-system. Behavior motivated by integration is very similar to intrinsically mo-

tivated activity, but it is still a form of extrinsic motivation oriented at attaining some external outcome, rather than acting exclusively for the satisfaction derived from the activity. Contrary to external and introjected regulation, which are related to the experience of pressure and control, identification and integration lead to positive commitment and high levels of experienced autonomy [28–30].

Research inspired by the self-determination theory confirms that the level of autonomous motivation has an effect on perseverance and effectiveness in action, on the sense of responsibility for the results of one's actions, and on the level of satisfaction and general physical and psychological well-being. For example, it has been shown that autonomous motivation triggered by a physician increases patients' perseverance and effectiveness in behaviors related to lifestyle change, such as quitting smoking, losing weight and physical activity, but also in taking medication and monitoring their glucose levels [31–34].

AIMS

The purpose of this study was to establish whether the level of autonomous motivation in a breastfeeding mother has an effect on her breastfeeding self-efficacy. Further, the study examined the relationships between breastfeeding self-efficacy and such indicators of psycho-physical well-being as the frequency of experiencing positive and negative emotions, life satisfaction, and the occurrence of somatic symptoms.

METHOD

Participants

The sample consisted of 93 women currently breastfeeding, aged 21 to 42 years (M=31.52, SD=4.29). 9.7% of the participants were high-school graduates, 14% had a B.A and 72% had a postgraduate degree. 40.9% of the women delivered their babies naturally (vaginally) without anesthesia, 12.9% gave vaginal birth wits anesthesia, and 45.2% had a C-section. The majority of the participants were mothers with one child (60.2%), 37.6% had two children, and the smallest group (2.2%) were mothers with three children.

SURVEY

The survey was conducted online via Google Drive. There were two main reasons for distributing the survey online. First, most women taking care of young children have very limited possibilities to respond to a survey; second, a large group of women use internet forums or message boards concerning various aspects of childcare to share their experiences and concerns. Therefore, links to the survey on Google Drive were placed on internet forums concerning baby care and feeding. The data were collected from January to March 2014. The questionnaire comprised scales measuring the variables discussed below.

Somatic stress

The experienced level of somatic stress was rated by the participants using the Somatic Stress Scale [35]. It is a list of 15 somatic symptoms (e.g. severe headaches and strong chest pains) taken from a module of the General Public Survey. The subjects rated the frequency of each symptom (1 – lack of symptoms; 2 – occurring shorter than 15 days; 3 – occurring for at least half a month).

Positive and negative emotions

Another variable was the frequency of experiencing positive and negative emotions. It was rated using the Emotion Scale by Wojciszke & Baryła [36]. The Emotion Questionnaire consists of 24 adjectives referring to discrete emotions, four per each basic emotion category (happiness, love, fear, anger, guilt and sadness). Participants are asked to rate, on a 7-point rating scale (1 – never, 7 – always), how often they have experienced each of these emotions over the past week. In our sample, all the scales achieved satisfactory reliability: Cronbach's alpha 0.77 for happiness, 0.89 for fear, 0.77 for love, 0.81 for anger, 0.66 for guilt and 0.73 for sadness [36].

Life satisfaction

Life satisfaction was measured using the Cantril Ladder adapted by Czapiński & Panek [35]. This scale asks the subject to rate their present, past (5 years ago) and anticipated (in 5 years) satisfaction with life (0 is the worst possible life and 10 is the best possible life).

Autonomous motivation

Autonomous motivation underlying breastfeeding was measured using a method proposed by Koestner and colleagues [37]. A similar method of assessing the reasons for goal pursuit was proposed by Emmons in his personal strivings questionnaire (1998). In this method the participants classify the reasons for pursuing their goals into four categories based on the self-determination theory [28]. In our study the content of each item was adapted to the situation of breastfeeding:

- external reasons: you are breastfeeding your baby, because someone else wants you to do it or thinks this is something you should do. Another reason for your striving may be your expectation of reward or praise, e.g. "I'm breastfeeding my baby, because otherwise I would surely be judged"; introjection: you are breastfeeding your baby because otherwise you would feel guilty or anxious. No one tells you to do it, but you claim you should, e.g. "I'm breastfeeding my baby, because I would feel bad if I didn't do it"; identification: you are breastfeeding your baby, because you know it is important and good for them. Even if the striving was instilled in you by others, you fully approve it now, e.g. "I'm breastfeeding my baby, because I know that's very important for their development";
- internal reasons:
  integration: you are breastfeeding your baby, because you feel it also helps you to satisfy your own needs and because it is a personally important and satisfying experience for you. Natural feeding is consistent with your values and beliefs. You consciously choose this way of feeding and you value it, because it reflects your true needs and beliefs, e.g. "I'm breastfeeding my baby, because it gives me genuine satisfaction and is a source of positive experience".

Using a Likert-type scale (from 0 – absolutely not for this reason, to 9 – definitely for this reason), the participants rated to what extent each of the reasons determined their given striving. The general autonomy index was calculated according to the formula proposed by Ryan [38]: 2 × internal + identification – introjection – 2 × external.

BREASTFEEDING SELF-EFFICACY

Breastfeeding self-efficacy was assessed using the Polish adaptation of Dennis' Breastfeeding Self-Efficacy Scale-Short Form (BSES-SF). The scale consists of 14 items measuring a breastfeeding mother's confidence in her breastfeeding capacities. The participant responds to the items using a 5-point scale (1 – not at all, 5 – definitely yes). In our sample the scale achieved high reliability (Cronbach's alpha 0.92) [26].

RESULTS

As nearly half of the participants had a C-section, the study examined whether the means of pregnancy termination had an effect on study results. In order to find out whether there were any significant between-group differences in the analyzed variables, one-way ANOVA was conducted, using the means of pregnancy termination as the independent variable, but no significant differences were uncovered in the analyzed variables: the level of autonomous motivation to breastfeed, breastfeeding self-efficacy and the indicators of psycho-physical well-being. For this reason, further analysis was conducted for all the women participating in the study.

The results of a correlation analysis confirmed a negative correlation between breastfeeding self-efficacy and motivation based on pressure, either external or internal. The more the participants were motivated to breastfeed by pressure from

external factors and negative feelings such as fear or guilt, the lower was their breastfeeding self-efficacy. On the other hand, motivation to breastfeed based on standards that were fully integrated with the self, which led to full acceptance and understanding of the meaning and value of this way of infant feeding, was linked to high breastfeeding self-efficacy. The results are presented in Table 1.

Table 1: Pearson's correlation coefficients (Pearson's *r*) between types of motivation and breastfeeding self-efficacy

	Motivation			
BSES-SF	External reasons	Introjection	Identification	Integration
Self-efficacy	–0.42**	–0.28**	0.15	0.47**

Note: BSES-SF, Breastfeeding Self-Efficacy Scale-Short Form.

**Correlation is significant at the 0.01 level (2-tailed).

A regression analysis performed as the next step confirmed that the general level of autonomous motivation underlying breastfeeding (calculated according to Ryan's formula) was a significant predictor of breastfeeding self-efficacy, $\beta=0.55$; $p<0.001$; adjusted $R^2=0.30$; $F(1.82)=34.88$; $p<0.001$. Thus, it can be concluded that the more autonomous motivation is driving a breastfeeding mother, the higher her breastfeeding self-efficacy. In our sample, the level of autonomous motivation accounted for 30% of the variance in breastfeeding self-efficacy.

The correlation analysis also showed that the higher the breastfeeding self-efficacy, the more frequently the participants experienced positive emotions (happiness, satisfaction, joy, love, affection, commitment and attachment) and the less likely they were to experience fear (concern, anxiety, dread) (Table 2). At the same time, the analysis did not find a relationship between breastfeeding self-efficacy and satisfaction with life (Table 3).

Table 2: Pearson's correlation coefficients between breastfeeding self-efficacy and the frequency of experiencing various emotions

	Emotions					
BSES-SF	Happiness	Love	Sadness	Fear	Guilt	Anger
Self-efficacy	0.29**	0.45**	–0.17	–0.39**	–0.14	–0.20

Note: BSES-SF, Breastfeeding Self-Efficacy Scale-Short Form.

**Correlation is significant at the 0.01 level (2-tailed).

Table 3: Pearson's correlation coefficients between breastfeeding self-efficacy and life satisfaction

	Life satisfaction		
BSES-SF	Present	Past	Future
Self-efficacy	0.00	–0.12	0.12

Note: BSES-SF, Breastfeeding Self-Efficacy Scale-Short Form.

The correlation analysis also confirmed a relationship between breastfeeding self-efficacy and the frequency of experiencing somatic symptoms (or somatic stress) by breastfeeding mothers. The higher their breastfeeding self-efficacy, the less likely they were to experience fatigue, excessive sweating, abrupt heart rate changes, dyspnea and general asthenia (Table 4).

Table 4: Pearson's correlation coefficients between breastfeeding self-efficacy and somatic stress symptoms

Symptoms	Self-efficacy (BSES-SF)
Feeling cold	–0.07
Bone pain	–0.01
Bleeding	–0.21
Constipation	0.03
Fatigue	–0.36**
Urinary urgency	–0.12
Sweating	–0.26*
Heart rate	–0.24*
Dyspnea	–0.32**
Asthenia	–0.26*
Dryness	0.06
Chest	–0.14
Muscles	–0.14
Stomach aches	–0.17
Headaches	0.09

Notes: BSES-SF, Breastfeeding Self-Efficacy Scale-Short Form.

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

A subsequent regression analysis confirmed that the mother's self-efficacy was a significant predictor of the frequency of experiencing positive emotions (β=0.46; $p<0.001$; adjusted R^2=0.20; $F(1.76)=7.35$; $p<0.01$), negative emotions (β=–0.32; $p<0.01$; adjusted R^2=0.10; $F(1.82)=34.88$; $p<0.00$), and somatic stress symptoms (β=–0.30; $p<0.01$; adjusted R^2=0.09; $F(1.79)=9.24$; $p<0.01$). The higher the breastfeeding self-efficacy, the higher the frequency of positive emotions and the lower the frequency of negative emotions and somatic stress symptoms in the mother. Breastfeeding self-efficacy accounted for 20% of the frequency of positive emotions, 10% of the frequency of negative emotions, and 9% of the frequency of somatic stress symptoms.

DISCUSSION

The study attempted to answer the question about the relationship between the level of autonomous motivation in a breastfeeding mother and her breastfeeding self-efficacy. Additionally, it aimed to establish whether breastfeeding self-efficacy has an effect on the mother's psycho-physical well-being.

The results confirmed that the level of autonomous motivation is a significant predictor of breastfeeding self-efficacy. The higher the mothers' self-reported autonomous motivation to breastfeed, the higher their self-efficacy. At the same time, self-efficacy turned out to be a significant predictor of selected indicators of physical and psychological well-being, influencing the frequency of positive and negative emotions and the frequency of experienced somatic symptoms. The higher the mother's breastfeeding self-efficacy, the higher her well-being, measured by the examined indicators.

These analyses are consistent with a longitudinal study conducted in Israel, where a positive relationship was found between breastfeeding mothers' autonomous motivation and their self-efficacy and psychological well-being [14]. At the same time, non-autonomous motivation was linked to distress and negatively correlated with self-efficacy. Although the study did not confirm a relationship between autonomous motivation and the duration of breastfeeding, it clearly suggests that breastfeeding mothers' well-being and their ability to draw satisfaction from natural feeding depend substantially on whether they act autonomously, fully under-

standing and accepting this way of feeding. On the other hand, mothers who breastfeed their babies feeling external or internal pressure (external or introjected regulation) pay a high price of reduced well-being [14].

Numerous studies show that becoming a mother does not protect the woman from experiencing difficult emotional states. In fact, in many cases such states may be intensified both due to hormonal changes and because of the change in the woman's life roles. Breastfeeding may also be a source of stress. The pressure to breastfeed, which is common today, may make women who, for various reasons, are unable to implement this model, feel they are not good enough in the maternal role [14,39–41]. The research by Wawak-Sobierajska [13] suggests that almost all women who did not succeed at breastfeeding interpreted that fact as a personal failure. They experienced guilt and felt they had harmed their children, which led to lower self-evaluations as mothers.

The evidence presented in this paper suggests that low breastfeeding self-efficacy may be a major source of mothers' negative experiences, which may contribute to their decision to stop breastfeeding. This implies that influencing women's motivations to support their self-efficacy is important both because it increases their well-being and because it is beneficial to the child's health.

The results of the study suggest that autonomous motivation has a positive effect on breastfeeding self-efficacy. Autonomous motivation, according to Ryan & Deci, is shaped by contexts in which three fundamental needs are satisfied: for relatedness, competence and autonomy. This implies that triggering autonomous motivation requires building a positive relationship between the motivating person (e.g. a midwife) and the mother, shaping the mother's sense of competence by setting realistic goals, providing feedback on the progress, emphasizing the role of learning, and gaining experience in the development of competencies related to breastfeeding. Additionally, it is also important to take the perspective of a breastfeeding woman – to consider her difficulties, acknowledge her doubts, and at the same time stress the positive effects of breastfeeding both for the child and for the mother. This way of motivating facilitates full integration of the goal with the self, which allows the mother to act with full understanding and acceptance of this way of feeding, without feeling any external or internal pressure [17,28].

LIMITATIONS

The present study has a number of limitations and some additional factors should be considered in further research. The results have limited generalizability due to the sample size and selection. As data were collected via the internet, it was not possible to control all variables, including some sociodemographic factors, which could have a significant effect on the results. Hence the need to repeat the study on a larger and more representative sample. The sample tended to be more educated than the average in Poland and nearly half of the participants had a C-section delivery. Further research could be enhanced by using larger sample sizes, an advanced sampling method that would allow for the statistical analysis and adjustment of potentially confounding variables. Subsequent studies should also include in the analysis other important sociodemographic data concerning breastfeeding mothers (e.g. profession, occupation, relationship satisfaction). Finally, another limitation making it impossible to establish the causal direction of the examined relationships is the correlational nature of the study. Therefore, it would be worth conducting longitudinal research in this area. Future studies should also assess the duration of breastfeeding.

FURTHER RESEARCH

Increases in symptoms of depression and anxiety are common in new mothers. However, some studies examining the psychological health of feeding mothers have documented them reporting they are calmer, less anxious and less stressed. An important role in affect regulation and adjustment to new motherhood is also played by attachment styles. Although some studies have found that exclusive breastfeeding rate was not statistically different among mothers with secure and insecure attachment styles, it should be noted that breastfeeding plays an im-

portant role in creating enhanced physical and emotional closeness between the mother and her newborn baby [42,43]. Therefore, it can be concluded that further understanding of the psycho-physical well-being of breastfeeding mothers may be achieved through an examination of attachment styles.

Relatively little is known about the influence of maternal personality traits on breastfeeding, although some studies have confirmed that mothers who reported high levels of extraversion, emotional stability and conscientiousness were significantly more likely to initiate and continue breastfeeding for longer [44]. Further research should focus more on the role of personality traits in the maternal experience of feeding a baby.

CONCLUSIONS

Shaping autonomous motivation in breastfeeding women has a positive effect on their breastfeeding self-efficacy. The higher their breastfeeding self-efficacy, the more positive their subjective experiences. Positive experiences not only seem to increase breastfeeding mothers' well-being, but may also contribute to longer duration of breastfeeding.

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