FORMS AND SIGNIFICANCE OF THE PRENATAL "ATTACHMENT" FOR THE MOTHER AND THE CHILD

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Abstract
Prenatal psychology searches for answers to how a mother's behaviour and reactions affect the psychological condition of her child. The goal of this article is focused on the significance and forms of the prenatal attachment and the ways of their realization. We used the method of content analysis of domestic and foreign documents. The data shows a close relationship between the prenatal and postnatal attachment. The relationship is based on emotional, tactile, vocal and sound, visual and auditory communication. The quality of the attachment is affected by a number of factors, such as a non-functional partnership, the relationship towards the expected child, the woman's social situation and her total familiar psychosocial situation. There is evidence of the relationship between the prenatal bonding and the occurrence of depression in the woman. This data emphasizes the significance of the attachment. Studies show the influence of the prenatal attachment on the quality of the postnatal attachment.

Keywords: *Attachment; Bonding; Communication; Depression; Prenatal psychology; Social situation*

REVIEW ARTICLE

INTRODUCTION

Prenatal psychology is a new scientific discipline. It deals not only with the influences of a pregnant woman's emotions but how they affect the foetus as well. It studies how a mother experiences pregnancy, social relationships and other effects on the development and the life of an unborn human. Nowadays, a number of techniques are used to monitor the foetus. The main representatives of prenatal psychology are the professors Peter Fedor-Freybergh and Thomas R. Verny. They present the significance of the attachment. Fedor-Freybergh states in his publication (2014) that if we could ensure every child was loved and wanted from the very beginning and honoured, and if we honoured life as one of the greatest values, and if we could optimize prenatal and perinatal stages without disrupting the basic needs, aggression and psycho-toxic influences, the result would be a society without violence. How we treat our children will be the way they will treat the world (Freybergh, 2013). Verny and Weintraub (2013) recommend mothers "to be aware of their child before birth and respect it as an equal partner psychologically, physically and socially". Kohoutek (2013) deals with the theory of prenatal psychology.

Vymětal (2003) also dealt with the issue of medical psychology, as well as Matějček and Langmeier (1986), who summarized their opinions where they assess the gained abilities of the foetus: perception, attitude formation and independent behaviour. Teusen and Goze-Hänel (2003) claim that the senses of a foetus begin to

develop in the second half of pregnancy. The senses help it to prepare for the world. We can mention many known authors, such as the famous obstetrician Michel Odent, doctor and psychiatrist Sigmund Freud or the English philosopher John Locke etc. Also, Ratislavová (2008) contemporarily deals with this issue.

Attachment is an inborn system of brain functioning that causes a child to naturally yearn for closeness (most frequently from its mother, father or a surrogate person). The founders of the prenatal psychology based it on the above mentioned definition and placed the issue into the prenatal period (Brisch, 2011).

Bonding is the mutual relationship between a child and its parents. It is a lifelong connection between a mother and her child. The connection begins with conception. Scientists opine that there is a cellular consciousness or the awareness of the process of the semen winning in gaining the egg. It is the moment when the development of a human being begins. It is necessary that the mother, family and the father be physically and mentally healthy for the foetus to develop healthily. The first contact with a baby shows a loving welcome (Rheinwaldová, 2011).

The method and the content of this publication are focused on the importance and the forms of the prenatal attachment and the methods of their realization. We use the method of content analysis of domestic and foreign documents. Relevant sources were searched for in scientific databases – EBSCO, Pubmed, Scopus, ... We used the keywords "maternal-fetal attachment" and the Boole operators "and" and "or". The final number of publications used for this study was 60.

The significance of the prenatal attachment

A number of publications are focused on the theory and practical impacts of the attachment. Here, the significance of the attachment of a child to its mother and other close people is emphasized. The "Bowlby–Ainsworth" theory of attachment was published by Ainsworth in 1978. Other publications show the negative influence of the absence of attachment on women's psyche. Hašto (2005) very thoroughly deals with the relationship between a child and its parents from the prenatal period.

Publications which deal with specific practical evidence of the influence of prenatal attachment

The number of publications related to the importance of prenatal attachment has increased in the last two years. They can be divided into:

- the influence of prenatal attachment on the postnatal relationship;
- the relationship between the quality of prenatal attachment and the woman's psychological well-being and the influence on the occurrence of the development of depression;
- the influence of the social environment on the quality of prenatal and postnatal attachment.

Fedor-Freybergh (2013) developed a methodological model (scale) which assesses the factors which primarily influence prenatal attachment. There were seven items and each of them included ten questions. They assessed the level of the mother's psychosocial situation. Busenora et al. (2016a) say that prenatal attachment is the predictor of the quality of the postnatal relationship between the mother and the child. He used the 20th version of "Maternal-Fetal Attachment Scale" for the assessment. Busonera et al. (2017) compared five assessment scales used for the assessment of prenatal attachment. The chosen methodology enabled them to achieve the same results in four scales. For this reason, they assess the mentioned publications as positive. Zdolska-Wawrzkiewitzet et al. (2018) emphasize the need of future mothers to apply their own image of creating an attachment. The monitored sample groups showed this fact to be statistically verified. Ohara et al. (2016) assessed attachment using the MIBQ (Mother-Infant Bonding Questionnaire) questionnaire. This questionnaire can be used for the assessment of the prenatal and postnatal bonding. They assessed the results positively and recommended practical use. Rossen et al. (2016) emphasize the positive relationship between the prenatal and postnatal bonding. They learned that a higher quality of prenatal bonding predicts a higher quality of postnatal bonding. The importance of postnatal bonding on postnatal attachment is emphasized by Mrowetz et al. (2011).

Madahi et al. (2016) confirmed the positive influence of the quality of healthcare on

postnatal bonding during pregnancy. Navaro-Aresti et al. (2016) dealt with the relationship between the quality of prenatal attachment and its impacts on the development of the foetus, the progress of birth and the future relationship. It is negatively affected by a low level of prenatal attachment. Glover and Capron (2017) say that the placenta may transfer the mother's moods and stress (including her partner's violent behaviour) and affect the development of the foetus and the later parental behaviour. De Cock et al. (2017) say that the negative approach of parents to prenatal bonding is negatively affected by partnership stress. For this reason, they recommend the monitoring of parents who are reluctant towards prenatal bonding. Busenora et al. (2016b) confirmed the importance of positive attachment education in 428 pregnant women. Fraser (2016) tries to objectify the communication between a foetus and its mother using ultrasound. Güney and Uçar (2018) monitored the relationship between the movement of the foetus in the uterus and the prenatal and postnatal attachment. Handelzalts et al. (2016) monitored the relationship between postnatal attachment and the strength and frequency of contractions.

Petri et al. (2017) monitored 106 women and learned that the "maternal-fetal" relationship quality may predict the quality of postnatal attachment and affect the occurrence of postnatal depressions and anxiety. Delavari et al. (2018b) say that the low quality of prenatal attachment is one of the factors that influence the occurrence and depth of postnatal depressions. A quality prenatal preparedness of mothers decreased postnatal depressions. Delavari et al. (2018a) monitored 242 Iranian women and proved that positive attachment is a factor that supports women's self-confidence. Doster et al. (2018) monitored 324 women. There was a significant correlation between depression and the interruption of postnatal bonding if the women's relationship with their partner was bad. In the postnatal phase, these women experienced a strong correlation related to maternal anxiety. Zanardo et al. (2017) used the MIBS (Mother-to-Infant Bonding Scale) tests and monitored the differences between the lactation of mothers who had given birth prematurely and those who had given birth in time. Mothers who had given birth prematurely felt sad and stressed. They found the relationship between depression and the limitation of bonding. Koss et al. (2016) learned that women who had had a risky pregnancy experienced depression and a weaker attachment to the child in the first postnatal days. Chang et al. (2016) state that depression, social support and attachment in pregnancy are factors that predict the psychosocial situation of pregnant women. Pisoni et al. (2016) monitored hospitalized pregnant women and found a lower level of attachment to the foetus and a higher occurrence of depression. Lamba et al. (2018) learned that surrogate mothers experienced a higher level of depression during pregnancy and after birth. Andrek et al. (2016) claim that the quality of the family situation, i.e. insecurity and gestational age, is related to the level of prenatal and postnatal attachment. Baghari et al. (2016) assessed the adaptation of mothers who had experienced the loss of the foetus. 60 pregnant women were studied; 30 women stated the death of the foetus and 30 women did not state this fact. The authors did not find any differences regarding the attachment before the interventions. After the interventions, there was a significantly lower attachment level in women who had experienced the loss of the foetus.

Kraft et al. (2017) say that mothers who suffer from social phobias have a lower attachment level. For this reason, it is important to help them deal with the phobias. Yesilcinar et al. (2017) recommend ensuring sufficient social support in the care of mothers in the postnatal phase. Mothers should be informed about the options of using the sources of social support. Delavari et al. (2018c) emphasize the important relationship between the attachment, depression and social support. They recommend creating plans for the increase of supporting women regarding these areas. Tani and Castagna (2017) claim that a mother's acceptance of social support in pregnancy plays an important role, as well as the protective factors against postnatal depressions.

A number of authors deal with the importance of prenatal communication regarding attachment. "Communication is a transfer of information between the source and recipient. It is not only a flow of information but participation in communication by one's very presence" (Vybíral, 2009). Prenatal communication is sundry contact between a mother and

her unborn child that develops in the uterus. Women in history did this as well. A mother begins the communication even before the foetus begins to feel. At the end of the first trimester, the foetus may begin to move. The woman may feel small fasciculations (Teusen and Goze-Hänel, 2003). Roztočil et al. (2008) state that a woman enters the second phase of psychological pregnancy when she feels the movements of the foetus. This is the period when she realizes the existence of the foetus. Many women perform prenatal communication instinctively without anyone forcing them (Teusen and Goze-Hänel, 2003). Solterová (2014) says that communication strengthens prenatal cognitive development. Parents perceive their child before birth and create a bond, which is important for the postnatal acceptance of the child. The foetus perceives its mother's experiences, which creates trust and openness. It is proven that children of parents who express love and affection are physically more relaxed, content and more successful in their studies (Ondriová and Cínová, 2012). The first communicator and the main partner of the foetus during prenatal communication is its mother. She has a relationship with her unborn child since the moment of her impregnation, i.e. even before the child's sensory organs are developed. Almost no mother speaks of her child as a foetus or embryo. She speaks of her child from the beginning and later she says its name (Fedor-Freybergh, 2013). Other members of the family may be included in prenatal communication, especially the father. Further members of the family may be included later. Prenatal attachment positively affects the development of the child by communication (Teusen and Goze-Hänel, 2003). The fourth "Freybergh's days" in Bratislava in 2017 dealt with the issue of attachment (the electronic record of the lectures can be found at the FHSS USB).

Forms of prenatal communication

Vágnerová (2012) gives three ways of prenatal communication between the mother and her child, which are interconnected:

- One is *the physiological communication* when the connection is realized through the placenta. The blood transfers substances which can affect the foetus. The mother can experience stress and produce neurohumoral substances, which can burden the foetus's organism. It is proven that a foetus negatively reacts to stress hormones in its mother's body. A foetus reacts very negatively to violence and the depressions of its mother.
- *Sensory or behavioural communication* is related to a foetus's activity and movement. An example can be kicking – when a foetus expresses its dislike and reacts to impulses from its mother. The mother affects its "contentment".
- *The mother's emotional and rational approach* to her unborn child is the third way of prenatal communication. Positive thoughts have a positive effect and women who did not want to be pregnant transfer negative information to their foetus.

"The way is the goal." Teusen a Goze-Hänel (2003) state that this Chinese proverb summarizes all points of prenatal communication. It is a remarkable experience to feel love and unity and to give and accept trust. A child has much to give and prenatal communication enables it not to miss the opportunity. "It is never too early for love and affection. A new human being immediately needs affection to develop well" (Teusen and Goze-Hänel, 2003).

Communication with feelings

There are various ways to communicate with an unborn child. At first, the communication between a mother and her unborn child is based *on feelings*. The foetus is very sensitive and able to perceive and absorb its mother's emotions. Women are able to quickly distinguish their foetus's movements and what it wants to tell them. An interrupted movement means the foetus has been startled. Swinging and cuddly and also joyful movements can set the belly in motion. The foetus quickly recognizes its mother's voice from others. A child hears as if under water. A child recognizes the tone of its mother's voice (Teusen and Goze-Hänel, 2003).

Communication with a touch

A mother expresses her affection using this way of communication. We can see this way of communication at any moment and during any woman's activity. A foetus's reactions to its mother's touch change in the course of pregnancy. In the beginning, the foetus distances itself from the touch. Later, the foetus turns

towards it and the woman feels the response. Studies have shown that if a woman touched her belly during the course of pregnancy, children were more attentive, began to speak earlier and adjusted to different situations better. On the contrary, children whose mothers did not use this way of communication much had emotional problems, problems with integration in society and cried more. Belly massage is also very good (Deans, 2004; Nesnídalová, 2015; Ondriová and Cínová, 2012). Touch is the first and most important sense in the uterus. The uterus is an optimal, interactive and stimulating environment. Firstly, the lips, face and genitalia react to touch. They are very sensitive parts. The movements enable the foetus to be in touch with the uterus wall, umbilical cord and placenta. It also senses the touches of the belly. The child looks for affectionate touches and presses against the belly wall. Touch is not yet interconnected with the brain and the foetus cannot yet realize the feeling that something touches it (Hüther and Weser, 2010; Marek, 2002; Teusen and Goze-Hänel, 2003). Güney and Uçar (2018) assess the influence of a foetus's movement on prenatal and postnatal attachment.

Communication by singing

Children whose mothers sang pleasant, calming and melodic songs during pregnancy are more relaxed and cry less. Singing also develops the children's talent and creativity. Experts claim that well-chosen music can affect the psychological development of a child (Ondriová and Cínová, 2012; Průcha, 2011).

Communication by sound, voice, hearing

Another communication technique is speaking. A foetus can recognize a deep voice and distinguish its mother from its father (Hüther and Weser, 2010).

Tomatis and Keeping (2005) discovered that a foetus has an ear in the tenth week of pregnancy. After four and a half months, the hearing system is fully functional. The foetus can listen. It also senses the sounds of its mother's body. The sounds which the foetus hears are divided into two groups. *The first group includes the sounds created by the mother's body*, such as heartbeat, digestive system movements, speaking, singing, the sound of the placenta or blood pulsing in her veins. They can cause the reduction or acceleration of the foetus's heartbeat (Ondriová andCínová, 2012).

The sounds are transferred at the intensity of 60 decibels. They must be strong enough to reach the foetus. *External sounds* are transferred at the intensity of 20 to 30 decibels. Music is a part of our lives. Studies have shown that when a woman sings or repeatedly listens to music during the prenatal period, her child prefers it after birth as well. It reacts to the known music more than others (Franěk, 2005). It hears its mother's voice the best and it is very sensitive to it. A mother's voice is directly transferred into the uterus. A child recognizes a female and a male voice. Loud sounds cause twitching or hyperactivity. Peaceful music is pleasant for a child. When a child is in the uterus, loud music is not recommended. Even in the uterus, hearing can be impaired. Women should not work in a loud environment (Hüther and Weser, 2010; Marek, 2002; Rheinwald, 2011).

Communication by sight

Sight is not stimulated in the uterus. In approximately the 20th week according to sonography), a foetus opens its eyes and reacts to light. Reck (2014) shows a foetus's reaction to light. It reacts even when its mother exposes her belly to the sun. After birth, a newborn first learns to recognize its mother's face (Hüther and Weser, 2010; Teusen and Goze-Hänel, 2003).

CONCLUSIONS

The mentioned data indicate a close relationship between the prenatal and postnatal attachments. This relationship is based on emotional, touch, vocal, sound, sight and hearing communication. The attachment quality is affected by a number of factors, such as a bad partnership, the relationship to the future child, a woman's and family's social situation and a woman's total psychosocial situation. We can monitor the influence of prenatal attachment to the quality of postnatal attachment. It is proven that there is a relationship between a prenatal bonding and the occurrence of depressions in women. This data emphasizes the importance of attachment.

Based on the bibliographic search, the authors emphasize the necessity and the need for the support of prenatal attachment. Its quality influences the course of pregnancy in psychological and somatic terms including postnatal bonding and a child's development. One of the conditions for the realization of a positive bonding is the use of positive ways of communication, especially between a mother and her unborn child.

Conflict of interests

The authors have no conflict of interests to disclose.

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