Chapter 7

An Emerging Model of Pregnancy Care:
The Introduction of New Technologies in Maternal Wellbeing

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ABSTRACT

Pregnancy is a very special time in a woman’s life, a time of important and complex step that can lead to the fall the previous personal balances and looking for new. This phase potentially critical, is often accompanied by anxiety, negative emotions, worries and stress about themselves, the couple’s life, the baby. Among the many interventions available for the welfare of pregnant women, new technologies are playing an increasingly important role, thanks to its spread, the lower costs and its peculiar characteristics (interactivity, sociality, customizability, ubiquity, multimediality, velocity, etc). Smartphones and tablets in particular are proving excellent tools to accompany women on this journey toward a healthy motherhood.

INTRODUCTION

Pregnancy is a complex phase in a woman’s life, a period in which she changes her status from daughter to mother in just a few months. Becoming a mother requires a profound reconstruction of self (Barclay et al., 1997). This process of change is not bounded by a particular time frame, and it can even happen before the end of the neo-maternal month (Rubin, 1984).

In addition to biological changes, pregnancy leads to a search for a new identity that has to be positioned at the individual, couple and social levels (Stern et al., 1998; Bibring, 1959; Ammaniti et al., 1996; Monti et al. 2006).

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In this sense pregnancy is a psychologically complex period in a woman’s life, and every pregnancy could be seen as a phase of potential vulnerability. Indeed, this metamorphosis is characterized by physiological and psychological changes that can enhance anxiety or other negative emotional states and favor risky behaviors, such as the lack of attention to personal hygiene and prenatal screening, poor diet, alcohol consumption, smoking and drug use (Lindgren, 2001).

A wide consensus exists about the role of maternal psychological state in influencing the development of the child and the course of the pregnancy: negative emotions, such as anxiety and stress, are often associated with a redoubt variability in the fetal cardiac frequency, greater motor activity (which can cause spontaneous abortion), various pregnancy complications, pre-term birth and low birth weight (Hoffman & Hatch, 2000; Dunkel-Schetter, 1998; Dayan et al., 2002). Davies and colleagues showed that the level of maternal cortisol, measured between 30-32 weeks of gestation, is a predictor of a difficult temperament in children at two months of age (Davis et al., 2007); it is also inversely related to scores of cognitive and motor development in children at both three and eight months (Buitelaar et al., 2003). Anxiety detected at 32 weeks gestation was predictive of severe behavioral problems in children at 4 years of age (O’Connor et al., 2002).

This situation appears even more critical in cases of anxiety or depression disorders during pregnancy that are related to postpartum depression (Grant et al., 2008; Austin et al., 2007) and to negative effects on infant mental development (Tronick, 1999). Postnatal depression has been clearly associated with negative health consequences for both women and their babies (O’Hara and Swain, 1996).

Specifically, impaired maternal-infant interactions have been linked to vulnerability in infants and children (Murray et al., 1996), to attachment insecurity and delay in cognitive and emotional development (Hipwell et al., 2000; Murray et al., 1992; Cogill et al., 1986; Cummings & Davies, 1994), and to social and interaction difficulties (Murray et al., 1999).

As well-being of the mother is critical for optimal pregnancy outcomes, it is important to regulate maternal stress and provide expecting mothers with coping strategies to increase their quality of life and to maximize infant health and development.

This chapter pursues a threefold objective. First, it aims to investigate how it is possible to enhance women’s well-being during pregnancy by taking into consideration the three levels of well-being identified by positive psychology. Second, it aims to analyze how actual mothers-to-be use new technologies to meet several needs. Finally, it aims to describe the Italian mobile app “BenEssere Mamma,” which was developed by the chapter’s authors to support mothers’ well-being during pregnancy.

HOW TO ENHANCE WOMEN’S WELL-BEING DURING PREGNANCY

Pregnancy, evoking a range of emotions from great joy and anticipation to crippling anxiety, is likely to increase several needs, including the needs for information, to share experiences with others or to be instantly connected, and to consult professionals (Tripp et al., 2014). There are several ways to meet these needs, including self-soothing techniques, psycho-education and relaxation, that are particularly important in this transitional and meaningful time (Beddoe & Lee, 2008).

According to the positive psychology perspective – which emerged as the scientific study of positive personal experience, positive individual traits, and positive institutions (Seligman, 2003; Seligman and Csikszentmihalyi, 2000) - it is critical to focus on human strengths, healthy processes, and fulfillment
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