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TESI DI DOTTORATO DI RICERCA

PSYCHOSOCIAL RESOURCES AND RISK FACTORS BEFORE AND AFTER CHILDBIRTH: A LONGITUDINAL STUDY AMONG SECOND TIME MOTHERS

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ABSTRACT

Previous literature stated that the transition to parenthood is marked by many stressful changes. Studies focused on the transition to first time-motherhood as implying a radical overhaul of individuals' hierarchy of values, requiring an experiential adjustment to new environmental challenges, and a redistribution of the limited psychic resources among them in daily life. In spite of the radical changes that are connected to the birth of the second child, literature on second-time motherhood is scarce and under-investigated.

Moving from these premises, the study aimed at analysing the psychosocial resources and the risk factors associated to second-time motherhood before and after childbirth. In particular, we focused on mothers' everyday life and quality of experience. The novelty in the present approach was to focus on the joint analysis of well-being, in both its hedonic and eudaimonic components, and ill-being, evaluated in terms of risk of perinatal depression.

Participants were 22 women (aged 24-40) recruited at the Obstetric and Gynaecology Unit of Hospital Luigi Sacco of Milan, between November 2011 and January 2014. Data were collected through single-administration questionnaires assessing well-being and ill-being indicators, as well as real-time measures, assessing everyday life and quality of experience. In particular, data were collected trough Experience Sampling Method (ESM), providing on-line information on the experience fluctuation during daily life. For one week participants carried an electronic device sending acoustic randomised signals 6-8 times a day. At signal receipt, participants provided self-reports about ongoing activities and associated experience. Likert-type scales measured emotional, cognitive, and motivational psychological dimensions, including challenges perceived in the activity and related personal skills. Answers to open-ended questions were assigned numeric codes and grouped into categories according to functional criteria. The values of scaled variables were standardised before analysis. Moreover, the relationship between levels of perceived challenges and skills - on the one side - and the quality of experience - on the other side – was explored through the

Experience Fluctuation Model (EFM).

Findings obtained from single-administration instruments analysing well- and ill-being indicators showed that women overall reported low levels of depression and psychopathological symptoms, as well as good mental health both during and after pregnancy. Evidence obtained from real-time instruments highlighted that women's daily quality of experience was subject to fluctuations associated with contingent roles and tasks required by motherhood: Along with meaningful sources of optimal experience, the elective investment on children and nuclear family could also be intended as an important source of boredom, relaxation and apathy. Results showed that the complexity and specificity of second-time pregnancy and puerperium transition should encourage health professionals to adopt a more articulated prevention approach, supporting mothers' healthy psychological adjustment.

To the best of our knowledge, this was the first study focusing on the joint analysis of well-being, in both its hedonic and the eudaimonic components, and ill-being, evaluated in terms of risk of perinatal depression.

CHAPTER 1

THEORICAL BACKGROUND

1.1 The Three Dimensions of Health: from the Biomedical Approach to the Bio-psycho-social Model

Definitions of health vary according to cultures and historical periods (Delle Fave & Bassi, 2013; Jones, 2004) undergoing constant changes over time (Levin & Browner, 2005).

Over the last two centuries, dominant Western ideas about health have been shaped by the B*iomedical* or medical (sometimes also known as the bio-mechanical) model of health. The Industrial Revolution and the transition to new manufacturing processes in the period from about 1760 to 1840, marked a major turning point in history; almost every aspect of daily life was influenced in some way by it.

The Industrial Revolution led to a remarkable increase in workers' wealth and to the emergence of a strong middle class, and findings and discoveries in medical research played a crucial role in formulating the concepts of illness and health. The demonstration of a correlation between germs and disease and the introduction of the scientific method in clinical investigations gave an additional contribution to the already deep-rooted idea that the body structures and mechanism were separated from the processes underlying mind and soul functioning. The biomedical approach that emerged and that is still widespread is centred on disease, classified through signs and symptoms and analysed according to rigorous Evidence-Based Medicine (EBM) rules. Evidence-based medicine advocates that to the greatest extent possible, decisions and policies should be based on evidence, not just on beliefs of practitioners, experts, or administrators.

The Biomedical model has three key principles: 1) disease is a breakdown in the normal functioning of the body; 2) the mind and body can be treated separately (dualistic separation of the person into mental and physical components); and 3) trained medical specialists are considered to be the only experts of human body. A patient is equated to a sick body that can be handled,

explored and treated independently from his mind and other external considerations. Treatment therefore will be provided by medical professionals with appropriate knowledge and in an environment where medical technology is available (Giddens & Sutton, 2009). 'Illness' is what a patient suffers from when he/she experiences a breakdown in the way he/she is feeling or thinking, and 'disease' is an abnormality of the body and its components and it is diagnosed and treated by doctors (Pool & Geissler 2005).

Health and illness are conceptualised as opposite poles of a continuum and, therefore, health is simply absence of disease. In other words, the biomedical model is centred on the disease, on the contribution of the physician to the process of medical care, and patients are attributed a passive role of "carrying a problem" (Delle Fave & Bassi, 2013). In this deterministic view, the focus is on *objective health*, understood as an objectively measurable physical condition. *Medical ownership* is integral to the concept of disease. Disease 'belongs' to the doctor, in that the doctor has the responsibility and privilege to name, predict and treat it (Salmon & Hall, 2003).

Several strengths characterise this model: a) the ability to verify the effectiveness of intervention, due to the instrumental and the anatomic-functional countercheck; b) the possibility to test hypotheses with controlled randomised trials and rigorous methodology; c) the possibility to compare and spread knowledge. The anamnestic and the therapeutic processes are centred on pathology and point to the best possible diagnosis and to the comprehension of risks and benefits connected with specific type of interventions (Arnold, et al., 2005). The success of a therapy is, therefore, concretely evaluated in terms of life expectancy, expressed in years of survival. The model provides important advancements in understanding and treating disease, as well as in planning social and international policies aimed at granting adequate standards of health and assistance to all citizens (Delle Fave & Bassi, 2013).

Despite the important contributions that the Biomedical model has been able to provide, important limitations have been described. For instance, Jones (2004) argued that the model has proven to be an instrument of partial knowledge, centred on a reductionist view of disease.

Therefore, a new and more exhaustive model was theorised by psychiatrist George L. Engel and discussed in a 1977 article in *Science* where he posited "the need for a new medical model". Drawing on Systems Theory of Weiss and von Bertalanffy (1968), he proposed the *bio-psycho-social* model (BPS) in which he stated that biological, psychological, and social factors all play a significant role in human functioning in the context of disease or illness. Biological factors refer to body structures and their functioning, the psychological aspect entails thoughts, emotions, and behaviours, while the social aspect of health refers to the social socio-economical, socio-environmental, and cultural components of the individual.

Therefore health is best understood in terms of a combination of all these factors rather than purely in biological terms.

The BPS paradigm also appears to be a technical term for the popular concept of the "mind–body connection": Each patient is a unique entity differently affected by each biological, psychological and social happening. Any perturbation in one part of the system will affect another part of the system. For instance, deterioration of a patient's condition (biological effect) can negatively affect their emotional states increasing stress and anxiety levels (psychological effect), which affects their ability to work or perform daily routine activities (social effect), which will subsequently increase pain and/or disability levels.

Therefore, the biological component deals with the mechanisms through which the functioning of the individual's body ends up in illness. The psychological component looks for potential psychological causes for health problems, such as lack of self-control, emotional turmoil, and negative thinking. The social part of the model stresses on different social factors, such as socioeconomic status, culture, poverty, technology, and religion can influence health (Santrock, 2007). BPS highlights the importance of understanding the patient as a unique individual taking into consideration the irreducible unity of the mind and body.

The model emphasizes the active role of the individual both in the etiopathogenesis of disease and in the treatment process which is considered as a negotiation between the practitioner and the

patient. Being an individual with a subjective interpretation of health and disease, the patient is also considered as a carrier of a specific cultural background and a member of a particular society.

BPS addresses the issue of health complexity through the involvement of other disciplines besides medicine, such as psychology, sociology and anthropology. It does not aim at displacing the whole biomedical approach or at downgrading the role of the physician; rather it aims at emphasizing the importance of the patient's contribution to the process of prevention and cure, integrating the various disciplinary perspectives and broadening the intervention potential (Delle Fave & Bassi, 2013).

There are conflicting findings in the existing literature regarding the extent to which the BPS model has been integrated into the medical domain, most literature states that the Biomedical model continues to be the bedrock in which foundation of the health care system is based in the western societies (Zalewski, 2000). Nonetheless, in line with the bio-psycho-social approach, the World Health Organization (WHO) defined health as "a state of complete physical, mental and social well-being, and not merely absence of disease or infirmity" (WHO, 1946). According to the WHO, the main determinants of health include the social and economic environment, the physical environment, and the person's individual characteristics and behaviours (WHO 2011).

When it comes to mental health, the WHO defines it as "a state of *well-being* in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (WHO 2004, pp. 12). In this perspective, mental health is not just the absence of mental illness or disabilities. Mental health and well-being are fundamental to our collective and individual ability as humans to think, emote, interact with each other, earn a living and enjoy life. On this basis, the promotion, protection and restoration of mental health can be regarded as a vital concern of individuals, communities and societies throughout the world (WHO 2014).

The definitions presented above represent an important breaking point with respect to the Biomedical approach, shifting the focus from the absence of disease to the presence of well-being,

from cure to prevention (Delle Fave & Bassi, 2013), as will be shown in the next section.

1.2 The Promotion of Health and Well-being: the contribution of Positive Psychology

In spite of the complexity of the definition of health and its multifaceted form, the identification of the shortcomings, deficits, and disorders connected to the human condition has traditionally catalysed the bulk of researchers' attention. In 1970 Maslow (Maslow, 1970) stated that the science of psychology had been far more successful on the negative than on the positive side: It revealed much about humans' shortcomings, illness, and sins, but little about potentialities, virtues, achievable aspirations, or full psychological potentials; as if psychology voluntarily restricted itself to only half its jurisdiction.

However, over the last decades a new area of studies focused on the individual and on the environmental resources that can promote well-being and life fulfilment. The advent of this new approach can be traced back to Martin E. P. Seligman's Presidential Address to the American Psychological Association (APA) in 1998. He stressed that psychology had largely neglected the latter two of its three pre-World War II missions: curing mental illness, helping all people to lead more productive and fulfilling lives, and identifying and nurturing high talent. The advent of the Veterans Administration (in 1946) and the National Institute of Mental Health (in 1947) had largely rendered psychology a healing discipline based upon a disease model and illness ideology. With this realisation, Seligman resolved to use his APA presidency to initiate a shift in psychology's focus toward a more positive psychology.

In January 2000 he defined "Positive Psychology" in the issue n.55 of the American Psychologist with his colleague Mihaly Csikszentmihalyi. The two authors therein proposed an in-depth reconsideration of the past psychological tradition bringing forward the need to catalyse a change in the focus of psychology from preoccupation only with repairing the worst things in life to also building positive qualities (Seligman & Csikszentmihalyi, 2000, p. 5). Psychology is not just about illness or health; it is also about work, education, insight, love, growth, and play: In this quest

for what is best, Positive Psychology tries to adapt what is best in the scientific method to the unique problems that human condition presents in all its complexity (Seligman, 2002 in Snyder and Lopez 2002).

In the following years, a growing number of researchers started to investigate the positive side of behaviour and psychological processing, formalising and measuring constructs such as happiness, personal growth, subjective well-being, and positive emotions, with the aim of developing a science of well-being (Delle Fave, et al., 2011).

A key interest of Positive Psychology is the analysis of happiness: What it is, what factors favour its achievement, what consequences it entails for human well-being at the individual and community levels. In the past, a number of researchers involved in various domains had already devoted their work to the study of happiness. Indeed happiness is not a neutral term, neither at the cultural nor at the psychological levels (Delle Fave & Bassi, 2009; Delle Fave, 2004). Individuals and social groups develop a notion of what is good and desirable as function of philosophical, ethical, and religious beliefs, personal and collective values, meanings, expectations, and needs. In addition, there can be fluctuations and even radical changes across time in approaching happiness, as historical and economical circumstances, as well as general beliefs, are subject to change (Delle Fave, et al., 2011).

From the theoretical perspective, two philosophical traditions have been advocated by positive psychologists in the definition of happiness: hedonism and eudaimonism—both rooted in ancient Greek philosophy (Ryan & Deci, 2001).

1.2.1 Hedonia and Eudaimonia

The term hedonia (ηδονέ) was introduced by the Cyrenaics. Aristipus of Cirene, pupil of Socrates, identified well-being with pleasure affirming that things were good and right if they produced pleasure. From this perspective, the *hedonic*[1] approach in Positive Psychology gives

[1] The Cyrenaics hedonism was more drastic than Socrates' theory. From his perspective, pleasure consisted of a "*slight movement*" of the senses that has value only as long as it is perceived. For Cyrenaics, pleasure and the true

prominence to feelings of pleasure, comfort and enjoyment, equating happiness with positive emotions and satisfaction with life.

The term eudaimonia[2] (εύδαιμονία) originates from the Nicomachean Ethic of Aristotle and it means "presence of a good *daimon*". It identifies a way of being that realizes the ultimate purpose of the individual dealing with optimal functioning, and equating happiness with the human ability to pursue complex goals which are meaningful to the individual and society (Ryan & Deci, 2001).

The predominant view of happiness from the hedonic perspective rests on the concept of *subjective well-being* proposed by Ed Diener (SWB; Diener, 2009) and it is operationalised as the prevalence of positive emotions on negative ones (emotional component), and a personal judgment on satisfaction with one's life as a whole, or with specific life domains such as work or relationships (cognitive component). Hedonic happiness can take place with no effort at all, "sitting on the couch watching TV, one hand on the remote, and the other in a bag of chips" (King, et al., 2002, p. 37). It refers to the achievement of a homeostatic balance through the fulfilment of desires and appetites and is basically focused on the personal fulfilment of individualistic needs (Veenhoven, 2003): The happiness of the person takes precedence over the happiness of the community, which is seen as the social space allowing for the fulfilment of self-interest.

Research showed that SWB has both a direct and an indirect positive influence on individuals' health, being positively correlated with physical conditions, satisfactory relations, management of one's health conditions, and longevity (Diener, 2009). However, the relation between SWB and

form of happiness is not conceived as a goal to strive to with action and movements, but as a state of rest.

[2] The title derives from the fact that Nicomaco, Aristotle's son, edited the books. In the Nicomachean Ethic, Aristotle investigated which science should determine what happiness is and how individuals can achieve it. This goal should not be achieved by the political science, since "*happiness is desirable when it belongs to a person, however it is better if it belongs to the nation or to the people (polis)*" (Nicomachean Ethic, 1,2). Well-being therefore is the goal every individual pursues and the ultimate purpose is happiness. The latter does not derive from wealth or rewards, nor from physical pleasure, rather from the exercise of virtues, defined as the realization of internal potentials and resources of human being. In this sense, it is the "peculiar work of the single individual" and it derives from the cultivation of its specific abilities: "And happy is the man whose done to explain the activity of soul according to virtue, not for a short time but for a lifetime […]. In a complete life one swallow does not make a summer or a single day: and so neither one day or even a short time make man blessed and happy" (Nicomachean Ethic, 1,6).

health may be more complex than one might expect: Some people with objectively poor health report high SWB, whereas some people with low SWB have no signs of somatic illness.

Eudaimonia is related to good functioning in terms of growth opportunities, effort, and commitment. In particular, happiness as feeling good can be set aside, at least temporarily, in the pursuit of important goals, such as family relations, good health, maturity, self-control. Eudaimonic well-being, overall refers to a process of growth in complexity, towards the achievement of a higher good, and the pursuit of meaningful goals (Ryan & Deci, 2001). The eudaimonic view supports the harmonization of individual happiness with collective well-being in a process of mutual influence in which individuals and society collaborate in the construction of a shared project of integrated fulfilment (Nussbaum, 1993).

A variety of constructs have been operationalised under the umbrella term of eudaimonic well-being. One essential aspect of eudaimonic happiness is meaningfulness (Baumeister & Vohs, 2002). Meaning-making represents a crucial process in organising the individuals' experience in time (Kegan, 1994), so that daily events are integrated into unique life stories. Another contribution to eudaimonic happiness derives from the pursuit of human virtues and the mobilisation of personal strengths (Seligman, 2002). From a broad perspective, Carol Ryff and her colleagues (1989; Ryff & Singer, 2008) developed the multidimensional concept of *psychological well-being* (PWB), consisting of six dimensions: Self-acceptance - acknowledging and accepting multiple aspects of self, including good and bad qualities; positive relations - having warm, satisfying and trusting relationships with others; autonomy - being self-determined and able to resist social pressures; environmental mastery - having a sense of competence and control in managing the environment; purpose in life - having goals and a sense of directness in life; and personal growth - seeing oneself as developing, growing, expanding and open to new experiences. Research has shown that high levels of PWB have a protective effect on physical health: There is promising evidence that eudaimonic well-being is linked with better neuroendocrine regulation, better immune function, lower cardiovascular risk, better sleep, and more adaptive neural circuitry (Keyes, 2007; Ryff &

Singer, 2008).

1.3 Optimal experience and psychological selection

From the eudaimonic perspective individuals play an active role both in determining their life trajectories and in influencing the long-term development of the human species. The scientific advancements of the 20th century helped clarify this role (Delle Fave, et al., 2011). In particular, crucial contributions came from physics and biology which incorporated the study of human beings within a wider living systems perspective. Von Bertalanffy (1968, p. 121) stated: "Considering the organism as a whole, it shows characteristics similar to those of systems in equilibrium. We realise at once, however, that there may be systems in equilibrium in the organism, but that the organism as such cannot be considered as an equilibrium system. The organism is not a closed, but an open system. We term a system "closed" if no material enters or leaves it; it is called "open" if there is import and export of material".

As such, individuals present two relevant characteristics: They are autopoietic, self-organising systems aiming at reproducing their specific organisation pattern (Maturana & Varela, 1980; Varela, et al., 1991). They are also complex, far-from-equilibrium living entities, in constant dynamic interaction with their environment, be it natural or cultural (Prigogine & Stengers, 1984).

The General System Theory, the theory of autopoietic systems, and the Dissipative Structure Theory outlined above provide an overarching framework for understanding the active role of individuals in the interaction with their environment. In particular, the human mind plays a crucial role in directing, organizing, and monitoring the efforts toward energy exchange for survival and adaptation. The mind, like any other living system, tends toward order and complexity and presents various states, referred to as experiences, which are ultimately determined by the mind's dynamic structure and organization. Besides being directed by internal drives, like hunger, or external rewards, like social approval, behaviour is guided by priorities established by the needs of the self (Delle Fave et. al., 2011).

At any given moment, individuals are faced with a great number of information coming from the outer and inner worlds which greatly exceeds the limited capacity of the psychic functions devoted to its processing (Csikszentmihalyi, 1978). From the perspective of the theory of communication (Shannon & Weaver, 1963), information is "a measure of one's freedom of choice when one selects a message" (p. 9) and is commonly expressed in terms of entropy, that is in relation to the number of possible alternatives or degree of randomness in the situation: Thus, the higher the number of alternatives, the higher the number of information bits.

While this definition regards the quantitative aspects of a message, the quality and content of information is linked to (a) meaning, that is the relationship between content and individuals' life trajectories and cultural and social systems and (b) the quality of subjective experience people associate with the information content (Csikszentmihalyi & Massimini, 1985; Delle Fave, 2004).

Subjective experience comprises cognitive, emotional and motivational components that undergo changes in relation with modifications in the internal and external conditions (Le Doux, 2002). Subjective experience is idiosyncratic, since it derives from the biological, neurophysiological and emotional-motivation configuration of the individual. Moreover, it is unstable, since it is exposed to changes in relation with the progressive and continuous increase of information and complexity that characterises human beings. Subjective experience, therefore, guides the individual's interaction with the environment, and influences the selection of information and daily activities (Delle Fave, 2004b, 2007; Massimini & Delle Fave, 2000).

According to the theory of psychological selection while interacting with the environment each individual preferentially selects activities and opportunities for action on the basis of the associated quality of experience (Delle Fave & Bassi, 1998; Massimini, et al., 1996). This is function of two key variables: the *challenges* or the opportunities for action perceived in daily activities and situations; and the *skills* or abilities perceived in facing such challenges. Different experiential profiles have been identified on the basis of the more or less balanced relationship between challenges and skills values.

Since the late 1970s, Mihaly Csikszentmihalyi has greatly contributed to the investigation of the phenomenology of subjective experience through the analysis of people's self-reports and descriptions of their quality of experience in various situations and contexts, for example, while performing complex and challenging tasks at work or during leisure time, such as surgery, art, mountain climbing, and chess playing (1975/2000, 1990, 1993). In particular, he identified *flow* or *optimal experience,* and described it as a positive and complex state that individuals preferentially select, characterized by high levels of concentration, involvement, control of the situation, enjoyment, and perception of clear goals. Its core feature is the perception of high environmental challenges balanced with adequate personal skills (Csikszentmihalyi, 1975; Csikszentmihalyi & Csikszentmihalyi, 1988; Massimini & Delle Fave, 2000).

Optimal experience is a state of balance and complexity, in which all psychological components - emotional, motivational and cognitive ones - show positive values, promoting high performance and well-being (Delle Fave & Massimini, 2005). Here are some expressions individuals use to describe it (Csikszentmihalyi, 1975):

My mind isn't wandering. I am totally involved in what I am doing and I am not thinking of anything else.

My body feels good. . . the world seems to be cut off from me. . . I am less aware of myself and my problems.

My concentration is like breathing. . . I never think of it. . . When I start, I really do shut out the world.

I am so involved in what I am doing. . . I don't see myself as separate from what I am doing.

In particular, optimal experience is characterised by the following dimensions (Csikszentmihalyi, 1990; Nakamura & Csikszentmihalyi, 2009):

1. Perception of high challenges and opportunities for action balanced with adequate personal skills in facing them.
2. Intense and focused attention on the ongoing activity, and concentration on a limited set of stimuli that are relevant for the performance of the situation individuals are involved in.
3. Merging of action and awareness: While being absorbed in the activity, individuals are not aware of themselves as separate from the actions they are performing, thus promoting the spontaneous involvement in the activity.
4. Loss of reflective self-consciousness: Individuals lose awareness of themselves as separate from the world around them, and feel in union with the environment.
5. Sense of control over one's actions: Individuals experience the sense of exercising control, which conveys a feeling of security and power.
6. Alteration of the temporal experience: Time no longer seems to pass the way it ordinarily does, and it is typically perceived to pass faster than normal.
7. Clear goals: Individuals know what they want to achieve. Goals can be proximal or have long-term meaning. Goals facilitate attention focus and commitment to meaningful activities.
8. Clear rules and positive feedback about the progress being made: Positive feedback contains the message that the performance is going well and a specific goal has been met.
9. Intrinsic motivation: Optimal experience entails doing something for the interest in and enjoyment of it, with no expectation of external gain or reward.

Optimal experience is not centred on pleasure and positive mood: Individuals emphasise their involvement in high-challenge tasks that require active participation, and the satisfaction that derives from the improvement of personal abilities. Optimal experience can thus be ascribed to the eudaimonic perspective, since it emphasises the mobilization of resources, the development and implementation of abilities and skills, self-determined behaviour, the building of social

competencies and interpersonal relations, the pursuit of aims and activities which are meaningful for the individual and the society. This implies that a person can actively and voluntarily pursue activities, goals, or relations considered as important, but not necessarily leading to individual benefits and pleasure (Delle Fave, 2007; Delle Fave & Massimini, 2005). Situations and activities associated with flow experience are selected through the preferential allocation of attention, everyday and throughout life: They become the core of *psychological selection*. This process of activity selection can have implications in the long term, since the result of this life-long process is the individual *life theme* (Csikszentmihalyi & Beattie, 1979), considered as the set of activities, social relations, and life goals, preferentially and uniquely cultivated and pursued by each individual.

1.4 Mental Health as Flourishing

Previous studies showed that hedonic indicators and eudaimonic indicators can operate independently of each other (Gallagher, et. al., 2009; Huta & Ryan, 2010; Linley, et. al., 2009): Although highly correlated, they represent separate constructs. Not only can happiness be understood as a transient emotion, or an experience of fulfilment and accomplishment (satisfaction with life), it can also be understood as a long-term process of meaning-making and identity development through the actualization of one's potentials and pursuit of subjectively relevant goals (Delle Fave et. al., 2011). These findings attest to the importance of studying both aspects of happiness respecting its ontological complexity. For this reason, the joint investigation of hedonic and eudaimonic constructs and their mutual relations can foster the development of more exhaustive and integrated frameworks. Seligman (2002) hypothesised that the full life (being high in both eudaimonia and hedonia) leads to greater satisfaction with life than pursuit of eudaimonia or hedonia alone, or than the empty life (being low in both eudaimonia and hedonia levels).

One model integrating hedonia and eudaimonia has been proposed by Corey Keyes (2002, 2005, 2007). It is centred on the concept of mental health as a syndrome of personal well-being including

symptoms of hedonia and eudaimonia, such as positive feelings (SWB) and positive functioning in life (PWB) and social well-being. Keyes maintains that mental health and mental illness are not opposite ends of a single continuum, but lie on separate continua. Indeed, there is only a modest and negative correlation between them. In particular, on the mental health continuum, presence of mental health is described as *flourishing* and absence of mental health is characterised as *languishing*. To be flourishing is to be filled with positive emotions and to be functioning well psychologically and socially; to be languishing means to perceive emptiness and stagnation in life.

Research showed that the risk of mental illness onset (e.g., a major depressive episode) was six times greater among languishing individuals compared with flourishing ones (Keyes 2002). Moreover, languishing and depression—both alone and together—were associated with significant psychosocial impairment, in terms of emotional health, limitations of activities of daily living, and workdays lost or cut back. On the contrary, flourishing and absence of mental illness were associated with profiles of better psychosocial functioning and physical health, for example, in terms of cardiovascular diseases, stomach problems, and arthritis (Keyes, 2007).

Interesting results were also obtained in the analysis of those individuals who reported moderate mental health, that is individuals with either moderate levels of both hedonic and eudaimonic well-being or some combinations of each (high hedonic but low eudaimonic or low hedonic and high eudaimonic well-being). The analysis of this group of individuals allowed researchers to highlight that hedonic and eudaimonic constructs of well-being are not redundant, and have differential psychosocial consequences. In particular, individuals with moderate mental health who have high hedonic well-being do not report as good a level of functioning as flourishing individuals who also have high hedonic well-being. This finding was based on the assessment of four major mental disorders: namely, major depression, panic disorder, generalized anxiety, and alcohol dependence (Keyes & Annas, 2009).

In sum, research has supported the hypothesis that anything less than complete well-being and mental health results in increased impairment and disability. Flourishing, as a central component of

complete mental health, is a desirable condition that any community, corporation, or government would want to protect and promote. Moreover, the combined analysis of mental health and mental illness is required for a thorough investigation of individuals' well-being.

CHAPTER 2

TRANSITION TO SECOND TIME MOTHERHOOD

2.1. The Transition to Motherhood

In individuals of all species the biological imperative of reproduction is universally strong, because it represents the fundamental means of transmission to the next generation of genetic characteristics and to allow their perpetuation (Venuti & Giusti, 1996). At the same time, in the last hundred years social and cultural changes have led to a reinterpretation of the philosophy and psychology of the feminine and of the maternal role (Capolungo, 2007). In order to deepen the issue of motherhood, it is essential to analyse the oscillation between being a mother as a natural phenomenon of the woman, and being a "mom" as a cultural, psychological and sociological phenomenon.

Over time, in order to describe the affective and emotional aspects of motherhood, different theories have been proposed. The following sections will briefly summarise the existing literature on the subject.

2.1.1 Motherhood: the Psychoanalytic perspective

The ideas of motherhood that arise from classical and contemporary psychoanalytic literature are based on the assumptions that women have an inherent instinctive capacity to want to become mothers and to carry out the mothering role. On the one hand, this has served to hold the mother accountable for providing 'good-enough' mothering (Winnicott, 1960a) and, on the other, to suggest that her capacity to provide this is not controllable by her but lies in her instincts. According to the psychoanalytic lens, women during pregnancy are in the grip of chaotic and unruly feelings aroused by the reactivation of their infantile conflicts and fantasies (Winnicott, 1956; Raphael-Leff, 1989); while, at the same time, they are thought to possess the capacity for controlled, constructive and containing childcare (Parker, 2005).

This emphasis on the 'naturalness' of motherhood has been blamed for the development of an impossible ideal which frustrates and depresses many mothers who find the development of their maternal self to be instead a gradual process built with experience, knowledge and confidence (Miller, 2004).

Later work (Chodorow, 1978; Benjamin, 1988) began to challenge the assumptions underlying these suggestions and to introduce the notion of mother as a subject. Authors began to question the normalization and acceptance of the gendered 'motherhood is natural' discourse of the time. They confronted and discussed the acceptance of the (patriarchal) equation: motherhood *equals* womanhood. These accounts have shown that at times mothers experience contradictory feelings, about being a mother and about mothering their children (Parker, 2005). Considering maternal love as an instinct, that is, as something innate, implies an idealisation and at the same time, a devaluation of the maternal role. Assuming the existence of a maternal instinct devalues the inner and relational journey needed to get there. The development of maternal behaviour depends of many elements, it is not a predictable skill that can be acquired once and for all.

Later on, Daniel Stern, an American psychiatrist and psychoanalytic theorist (1998), described the process required to become a mother in the following terms:

1. "Preparation to become a mother": This phase begins with the first nine months of pregnancy, when most of the mental work designed to prepare women for future motherhood occurs. The body provides for the gestation of the fetus and the mind is busy processing its new identity.The experience of childbirth is part of this phase, and it is therefore preparatory to the transformation of a woman into a mother.

2. "A mother is born": This phase begins after returning home from the hospital after giving birth. Only when a mother has dedicated herself to the task of feeding, caring, and nurturing the infant, maternal attitude assumes a complete form. This second phase is then characterised by two specific tasks: to ensure the survival of the baby and to establish an intimate relationship.

3. "Need for confirmation and encouragement from other mothers": This phase in

characterised by the woman's particular need to reflect and analyse the relationship with her own mother, in order to decide whether to reject or replicate that relational model.

2.1.2 Motherhood: the Systemic-relational perspective

Humberto Maturana and Francisco Varela (1980, p. 9) wrote: “Living systems are units of interactions; they exists in an ambience. From a purely biological point of view they cannot be understood independently of that part of the ambience with which they interact: the nieche; nor can the nieche be defined independently of the living system that specifies it”.

The quotation reported above describes the complexity that needs to be taken into account when analysing women's transition to motherhood. Women become mothers in an articulated family system and the way they will manage the transition is bounded to the relational dynamics that characterize it.

The element that gives specificity to a family is its being an “organization” of relationships that has as its intrinsic project generativity. As the primary unit of society, family ensures significant exchanges with the outside, settling and adjusting its boundaries in relation to the community context in which it is embedded (Scabini & Greco, in Andolfi, 1999). Relationship is what binds individuals to each other, in three main dimensions: a) interpersonal (e.g. between partners and between siblings); b) intergenerational (e.g. between the new family and the family of origin and between parents and children); and c) with family and community.

Relationship is not immediately describable, but it is highlighted during *transitions*: Every transition (defined as a specific life event, like the acquisition or loss of a new member) represents a passage from a given condition to a new one, that proposes to family members the need to “rework” the relationships that they have established with one another, and to create new meanings in light of the changed conditions (Cigoli, 1995). Transitions represent a crisis in the family organisation which challenges the *relational agreement* of the family and shows the r*elational truth* of every system. The overall meaning of each transition needs to be understood from an intergenerational

perspective, paying attention to the processes of transmission across generations.

In this regard, the transition to parenthood is of emblematic importance: This crucial step is successfully achieved if the new parents acquire their identity as parents, in connection and continuity with that of previous generations. It is the *innovative continuity* which expresses and originates from the individual differentiation process. In other words, each generation is called to keep alive the bond with the preceding generations, but, at the same time, it has to organise and structure its identity in a unique and original way, in order to creatively enrich the history of the family (Scabini & Greco, in Andolfi, 1999).

According to Eugenia Scabini (1995), two specific moments can be distinguished in the transition to parenthood: The first one refers to the "internalisation of parental functions" that each spouse accomplishes depending on the relationship with the family of origin. The second one is represented by the meeting of the two partners who concretely begin to perform parenting functions. In contemporary society, becoming parents represents the fundamental *rite of passage* to adulthood.

Researchers have advocated the need to examine the different ecologies in which families are embedded in order to fully understand the processes and outcomes of parenting (Gameiro, 2009). However, deriving from Bronfenbrenner's (1979; 1986; 1998) and Belsky's (1984) work, the adoption of an ecological perspective of parenting is still relatively recent and the comprehension of how different contextual variables may influence parental behaviour is a developing research field.

Bronfenbrenner's (1979) articulation of nested levels in the ecology of human development marked a great stride forward in conceptualising contexts. The micro-, exo-, meso-, and macro-systems described in the *Ecological Model of Human Development* must be taken into account in order to fully understand human development, and in order to value the occurring reciprocal interactions between a developing individual and the continuously unfolding, dynamic and ever changing contexts in which he is embedded across the life cycle (Gameiro, 2009).

According to Bronfenbrenner, the *micro-system* corresponds to the familial context, the main

context in which human development takes place. The *exo-system* includes other environments that are external to the individual but that affect the family members and the way in which they exert their influence on the individual's development. Examples of exo-systems are the parents' world of work and their circle of friends and acquaintances, that is, the parents' social network. The *meso-system* refers to the reciprocal influences operating between the different settings in which human development occurs (e.g. events at home can affect a child's progress in school and vice versa). Finally, the *macro-system* refers to the social, ideological and cultural settings (Bronfenbrenner, 1986).

Later on, in order to strengthen the importance of the dynamic contextual interactions that occur across time, Bronfenbrenner added a fifth system to his model, the *chrono-system* (Gameiro, 2009). *C*hrono-system takes into account changes within the individual and the environment that occur over time, allowing for the analysis of the transactional interplay between these two processes (Bronfenbrenner, 1986). The addition of the fifth system confers developmental validity to the Ecological Model of Human Development.

Research models that value this developmental perspective usually focus on a normative (e.g. school entry, marriage, transition to parenthood, retirement) or non-normative life transition (e.g. death or severe illness in the family, divorce, moving), since they occur through the life span and often represent a window of opportunity for developmental change (Gameiro, 2009).

Applying Bronfenbrenner's ecological framework, Belsky (1984) tried to offer a social-contextual approach to the *determinants of parenting,* that is, to the analysis of the factors that make "parents parent the way they do" (p. 83). Belsky argued that parenting is directly influenced by (1) the parent's developmental history and personal psychological resources (ontogenic development); (2) the child's characteristics; and (3) contextual sources of stress and support.

Among the parents' characteristics, Belsky highlighted the importance of their own developmental history (e.g. early emotional experiences with their own caregivers) and their personality. Among the child's characteristics, high importance has been given to health status,

gender, age and temperament. Additionally, Belsky identified four contextual sources of stress and support: (1) the marital relationship, (2) the social network, (3) the work context, and (4) formal social resources (Gameiro, 2009). According to Bronfenbrenners' perspective, while the first two sets of factors are located in the micro-system, the third and fourth refer to forces emanating from the broader context in which the parent-child relationship is embedded, that is, the exo- and macro-systems (Belsky & Jaffee, 2006). The model assumes that parenting is multiply determined, that parents influence the broader context in which the parent-child relationship exists, and finally that this influence feeds back into the parenting system. The basis of the conceptual model is the analysis of how these factors interact across time influencing parents' individual personalities and general psychological well-being and, thereby, determine parental functioning and subsequent child development.

2.2 From First to Second-time Motherhood

Nowadays, becoming a mother has been identified as one of the most important and challenging transitions in adulthood (Reilly, Entwisle & Doering, 1987; Taubman - Ben-Ari, Shlomo & Findler, 2011), and pregnancy and puerperium are described as crucial periods at both the biological and the psychological levels (Stern et al., 1998): On the one hand, women undergo physiological changes preparing them for child delivery, birth, and subsequent care. On the other hand, they have to revise and integrate their social and family roles in relation to their beliefs, social network and life events. The transition to parenthood clearly fits the definition of a transition period and is marked by many potentially stressful changes: a) responsibility for the well-being of infant; b) reallocation of financial resources; 3) shift of the communication system from dyad to triad; and 4) reorientation of relationship within the social network (Duvall, 1971).

Although the biological basis universally determines some aspects of maternal functions and behaviour, the specific ways in which a mother will interact with her child depend on many variables relating to her history, personality, the network of relationships she built and, last but not

least, to the beliefs and values of the society she lives in (Venuti & Giusti, 1996).

When referring to the transition to parenthood, individual adjustment differences are easily identified, both regarding parental well-being and involvement with the infant and parental care. Several factors are usually mentioned as a possible source of these individual variations, namely socio-economic status, personality factors, quality of the marital relationship, the child's characteristics (e.g. temperament), among others.

The literature points out that whilst studies have been carried out into the transition to motherhood there is little further research on how this evolves and develops after the birth of the child, agreeing that once the baby is born the focus of attention switches to the mother-child bond or to the development of the child (Gameiro, et. al, 2009).

Less attention has been dedicated to parity as an influence factor of adjustment to parenthood (Gameiro, et. al, 2009). Scientific literature tends to relate the concept of transition to parenthood, defined as the relatively brief period that goes from the beginning of a pregnancy to the first months following the child's birth (Goldberg & Michaels, 1988; cited in Moura-Ramos, 2006), to the birth of the first child. The work in this area primarily focuses either on becoming a mother, on being the mother of one child (the first) or on issues such as combining motherhood with work or developing relationships with more than one child.

Although this approach tends to implicitly consider the birth of subsequent children as not presenting so many challenges to the family, some authors point out that the births of other children are equally significant reorganisation moments (Goldberg, 1988; Kreppner, 1988; Stewart, 1990). Ammaniti (2008) affirms that subsequent pregnancy and the birth of a new child represent a different and challenging adventure. In his opinion, the second pregnancy, although less difficult than the first, involves specific transformations where new conditions occur. For example, a specific challenge parents have to face is represented by the first born who participates with personal expectations to the changes of the family as a system.

Stewart (1990) states that the second puerperium can be as complex as the first one, or even

more so, because it not only requires the reorganisation of the marital system[3], but also of the previously existing parental system. In accordance, Goldberg and Michaels (1988) argue that this second transition is certainly more complex, even if less dramatic. Although not directly aiming to study the differences in adjustment to parenthood resulting from parity, some studies focusing on the transition to parenthood have pointed out challenges such as increased difficulties in adjustment for multiparous mothers, namely higher psychological distress, negative mood or depression, isolation and sleep problems, when compared with primiparous mothers. The exception to the rule seems to be the period right after birth, when primiparous mothers report higher stress levels and negative mood (Gameiro, et al., 2009).

A study conducted with mothers of two young children found that maternal identity develops as family size increases (Munn, 1991). Mothers of two children were found to develop a different and separate relationship with each child in the first few months of the second child's life. The different forms of each relationship were dependent on the levels of tiredness and distress experienced by the mother after the birth of the second child, and on the individuality of each child. Mothers also developed a specific relationship with the two children together. Results pointed out that the experience of being a mother to a second child is different to that of being a mother to the first child, and that mothering one child is different to mothering two children. Mothering more than one child places the woman within a complex web of relationships that consecutively demand her emotional availability (Munn, 1991). When the newborn is the second child, different understandings are required.

In her work, Nollaig Frost (Frost, 2006) interviewed 7 middle class, professional second-time mothers in their mid thirties, all of them in long-term relationships with the father of both children. She discussed that mothers used knowledge gained from the experience of having already had a

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[3] In the novel *Heartburn* Nora Ephron sums up the potential impact of a baby on the marital relationship: ". . . *Now, of course, I realized something else no one tells you; that a child is a grenade. When you have a baby, you set off an explosion in your marriage, and when the dust settles, your marriage is different from what it was. Not better, necessarily; not worse, necessarily; but different*" (1983, p. 158).

baby to shape their expectations for having a second baby. They regarded the birth as influential to the subsequent experience of mothering that baby. Their preparations for the second birth involved ways in which they could retain control over the birth environment including location, medical intervention and social support. Moreover, when the baby was born the mothers looked for opportunities to be alone with the newborn and apart from the older child, somehow considered as a threat and an intruder bearing the constant request for emotional attentions. They achieved this goal by employing strategies of 'serial care'.

Moreover, Frost discussed that mothers regarded having a second child as a second opportunity for motherhood. They used knowledge gained from having had one child to re-evaluate the maternal ideal and to re-appraise their position in relation to it. In their reappraisal of themselves as mothers of two children they identify expansions and contraction in the space available to them. Psychically, they initially sought space away from the older child and closer to the younger child. As the baby became less dependent, they sought a space large enough to contain all three of them, including personal space exclusively available for themselves. If they could not achieve the *capacity to be alone in the presence of the children,* they sought a space elsewhere and apart from both children.

Finally, Frost's study showed that realities often differed from the fantasies which characterised pregnancy. Having a second child sometimes mediated expectations, but did not preclude an uninvited recurrence of psychic processes already experienced first time around (Frost, 2006).

All these findings suggest that the psychology of second pregnancy is at least as complex and perhaps more so than the psychology of the first. Women bring to their second pregnancies a whole range of experiences, as well as the vicarious experiences that were so influential when they were expecting their first baby. The events of the first pregnancy, labour and birth, and of the early postnatal period are now vividly revived in the memory and become the foundation from which the second experience develops.

In a study conducted by Sofia Gameiro and colleagues (2009), multiparous mothers reported a

significant increase in sadness over time, and a decrease in happiness 8 months postpartum. Although similar to primiparous mothers, this pattern was more accentuated, as women also reported a significant increase in anger over time. Moreover, similarly to primiparous mothers, the multiparous group also reported a decline in the perceived quality of the marital relationship, but these mothers were generally less satisfied with their marital relationship.

Summarising, the transition to second-time motherhood has been described as at least as challenging and testing as the first one: The addition of a family member often represents an increase in time and energy demands – as well as a consequent strain – and requires adjustment and reorganisation in the entire family system (Gameiro, Moura-Ramos & Navarroi, 2009; Krieg, 2007; Le Masters, 1957).

According to Missonnier (2003), the woman who becomes a mother today lives in a society that expects her to be competitive at a personal level, and at a professional level. Women have to be *less pregnant as possible*, and when they are pregnant they end up being poorly tolerated and punishable by a society dedicated to productivity. According to Lussier (1994, in Missonnier 2003) this profound ambivalence lays the foundation for the coexistence of idealisation and devaluation of the maternal role, a paradox that women feel intensely, which forces them to take refuge in the narrow family environment to seek confirmation of the meaning of motherhood. The search for proximity therefore seems to lead to three main directions: towards the child's father, who is supposedly able of total empathy and implication in the project; towards the child; and towards healthcare professionals of various kinds (e.g. gynaecologist, obstetrician, paediatrician), considered as "experts".

As history teaches, childbirth has not always been viewed as a peaceful experience and has always been subject to predominant cultural attitudes, whether those voices are from the religious, scientific, or public and social sector. Nowadays in western societies, the philosophy of birth and therefore social expectations seems well described by the following citation of a childbirth educator:

"It can be easy to get wrapped up in the pain, fear, and other obvious factors that can accompany childbirth. But it takes a deep understanding of ourselves, faith in the process and our bodies and babies, and a long-term perspective to walk into the birth experience with confidence and eagerness and walk out of it with the joy and serenity you are seeking. We are at a distinct advantage in our earth's history where we have thousands of years of both successful and failed documented birth practices, the knowledge of how to prevent the majority of complications in pregnancy, birth and postpartum, the experience and wisdom of our ancestors and modern-day birth "sages." There is all kinds of support during the birth year, and science and technology to back us up where we need it, such that there is no need to fear the birth process as our mothers before us did. We should be rejoicing and throwing off the old robes of the fear of pain or being conscious for the event, the distrust of our bodies, babies, and instincts, the patriarchal (from religion or government) control of this process, and the mind-set that it is better, clinically or otherwise, to completely hand our bodies and babies over to "the experts" to handle. For too long we have handed over our responsibility and power to those who would willingly shape our lives for us. Birth transforms you into much more than a mother. Birth is a rite of passage. It is your rite of passage"[4].

2.3 Psychopathology of Pregnancy and Puerperium

Literature has shown that the process of becoming a mother is not always successful. During pregnancy and puerperium (1 year after birth), women can experience considerable distress that can lead to anxious-depressive disorders which can seriously affect their quality of life and mother-child or marital relationships. The burden of motherhood, alone or in combination with low antenatal support and/or young age, may cause mothers to experience a range of negative feelings, including anxiety, sadness and anger (Graham et al., 2002; Porter & Hsu, 2003; Thorp et al., 2004). For decades, researchers have investigated psychiatric symptoms and disorders that arise during and

[4] Birthologie is a blog created by Amy Jones, who has been a childbirth educator and doula since 1997. http://www.birthologie.com/pregnancy/the-history-of-childbirth/

after pregnancy. Unfortunately, however, such symptoms are often inadequately addressed in clinical settings because providers (e.g., physicians, nurses) sometimes overlook or misunderstand them. One explanation is that due to the expectation of new mothers to be happy about the birth of a child, women attempt to hide negative emotions or symptoms from others i.e., fail to report them to medical personnel. Another reason for the failure to identify perinatal psychiatric symptoms in the postpartum is the limited education available to most expecting parents. Finally, medical personnel may not inquire about psychiatric symptoms in perinatal evaluations of new and expectant mothers or might mistake symptom presence as something else (e.g., depression), thereby missing an opportunity for appropriate intervention (Speisman, 2011).

Anxiety and depression levels may be lower for women having their second babies if their first pregnancy was enjoyable, unproblematic and led to the straightforward vaginal birth of a healthy baby. For women whose first pregnancy was complicated by mental health or medical difficulties, the fears aroused by a positive pregnancy test may be very profound. The serious consequences of physical and mental disorders occurring during and after pregnancy on the quality of life of women, newborns and families have been addressed in the medical literature (Ramchandani, et al., 2005) and in psychological research (Goodman & Brumley, 1990; Murray, et al., 1996), and they represent a policy concern for governments (Department of Health, 2004).

For this reason, the most recent Italian national guidelines for health professionals (Anninverno et al., Osservatorio Nazionale sulla Salute della Donna O.N.D.A., 2011) emphasised the relevance of women-centred care, focused on individual needs and wishes.

2.3.1 Postnatal Blues

The first days after childbirth are known to affect a woman's mood, and up to 80% of all new mothers suffer from what is known as postnatal blues (or Baby Blues). This is a short dysphoric and transient episode including symptoms such as low mood, tearfulness, irritability and emotional labiality (Henshaw, 2004). Specific symptoms are: a) weepiness and bursting into tears; b) sudden

mood swings; c) anxiousness and hypersensitivity to criticism; d) low spirits and irritability; e) poor concentration and indecisiveness; f) feeling 'unbonded' with baby and g) restless insomnia.The symptoms start in the first few days after giving birth, peak at day 3–5, and last up to 7-10 days postpartum (Henshaw, 2003; Sakumoto, 2002).

Although there is no consensus about the nature of postpartum blues (Miller & Rukstalis, 1998), different explanations have been proposed. One explanation is that after the placenta is delivered, the placental "hormone factory" shuts down causing radical changes in hormone levels, and the woman can suffer symptoms due to withdrawal from the high pregnancy levels of oestrogen, progesterone and endorphins. Combined with this shift in hormone levels is the physical, mental and emotional exhaustion - as well as sleep deprivation typical of parenting a newborn (Miller & Rukstalis, 1998). Other studies address the baby blues syndrome from the point of view of adaptation theory and indicate that it is an example of a breakdown of adaptation in the mother-child system. The dynamics of the appearance and reduction of depression reflect the general characteristics of the adaptive process. Psychological investigations have demonstrated that in some cases, there is neurotic adaptation with a relatively large involvement of psychodynamic mechanisms as compared with social-personal mechanisms, along with impairment of individual-personal mechanisms of coping behaviour in mothers, with avoidance of complex situations with their children. This model is expressed as ambivalent behaviour by mothers when interacting with their children at interaction points (feeding) and avoidance of taking food by the babies, a tendency to separation of the dyad. Thus, the presence of the blues has been associated with the formation of a particular egotistical adaptation of the members of the dyad, as compared with the “normal” adaptation in the mother-baby system (Koshchavtsev, et al., 2007).

As postnatal blues is a common, brief and benign condition, it is considered without pathological and clinical interest and, as such, it does not require treatment (Lilja et.al., 2011). However, several authors have reported associations between severe postnatal blues and subsequent postnatal depression (Edhborg, et al., 2005; Henshaw, et al., 2004; Reck, et al, 2008; Beck, et al., 1992;

Edhborg, 2008), and between postnatal blues and subsequent anxiety disorders (Reck, et al., 2008).

2.3.2 Peripartum Depression

Peripartum Depression is a mood disorder characterised by recurring symptoms of loss of interest and pleasure, depressed mood, fatigue, changes in sleep and appetite, alteration in activity patterns, sadness and frequent crying, agoraphobia, concentration difficulty, extreme irritability, unnecessary guilty feelings, anhedonia, and death and suicidal thoughts (American Psychiatric Association, 2000). Depression can occur during pregnancy (antenatal depression; AND), after birth (postnatal depression; PND), or in both periods (Leigh & Milgrom, 2008). Estimated prevalence and incidence range between 5% and 25%, although a study by Austin (2004), estimated that about 40% of women with postpartum depression was already depressed during pregnancy.

Depressive symptoms in the peripartum period are often strongly influenced by concern about the child and the demands of motherhood. Women suffer from fear of failure and feelings of inadequacy. They experience themselves as "bad mothers" who cannot manage to meet the needs of their child. They often report that the child is difficult and demanding. Avoidance behaviour on the part of the child and any problems with breastfeeding are interpreted as confirmation of their own failure, reinforcing the vicious circle and their ever-increasing exhaustion. Because of the personal and societal expectations of undiluted joy, the taboo against depression is even greater than at other times. The women are afraid to express their negative feelings towards their child and their perceived failure as mothers (Hübner-Liebermann, et al., 2012). The cultural expectations of a new mother dictate that she should feel happy, bond to and love the infant. If this does not occur, she may feel as though she is not a good enough mother and that her community may not accept her, resulting in feelings of possible social stigmatisation (Buultjens & Liamputtong, 2007). Moreover, the early depressive symptoms could be due to transient difficulties in adaptation to the new situation. Particularly, women with low self-esteem or women who strive for perfection with high needs of control may have difficulties finding a balance between their expectations of becoming a

mother and the reality of life with a new infant (Terry, et al., 1996).

Women show a depressive ideation linked to their maternal role which is expressed by: a) perception of being unable to care for the child, b) fear and insecurity in the management of children, c) ambivalent or negative feelings toward the child, d) perception of isolation from the family context (Anninverno et.al., Osservatorio Nazionale sulla Salute della Donna O.N.D.A., 2011).

Depressive disorders and symptomatology in pregnancy may be associated with stressful life events, or they could be a manifestation of a continuum of depression or of a recurrence of a precedent depressive condition; particularly they are frequent in women who interrupted an antidepressant treatment during pregnancy (Beyondblue Clinical Practice Guidelines, 2011).

Affected women are particularly troubled by obsessive thoughts or impulses to harm the child. In a study by Chandra et al. (2002), 60.7% of severely depressed women, compared with 27.6% of those with psychoses or bipolar disorder, reported infanticidal thoughts; corresponding behaviour was shown primarily by delusional patients. However, some authors think that the risk of children being harmed by depressed mothers is underestimated. Infanticide is carried out from altruistic motives or because of fear of separation from the child in the context of extended suicide or in the presence of concurrent maternal attachment disorder. Infants in the first year of life are at the highest risk of infanticide (see Hübner-Liebermann, et al., 2012).

These ego dystonic, obsessive and intrusive thoughts of guilt and shame usually lead to avoiding seeking help or expressing these emotions, either with family or with health professionals (Milgrom & Gemmill, 2014). It is unlikely that most depressed perinatal women will actively seek treatment (MacLellan, et al., 1996, Anninverno, et al., Osservatorio Nazionale sulla Salute della Donna O.N.D.A., 2011). Seeking or accepting help for emotional distress may prove difficult for a number of reasons (Dennis & Chung-Lee, 2006). These can include perceptions of stigma and self-stigma; lack of knowledge about depression; unrealistic beliefs about coping with motherhood; feelings of failure; and fears about contact with mental health services. Such barriers are easily compounded by

the symptoms of depression themselves, such as low energy, and this can result in women feeling de-motivated about accessing help (Bilszta, 2010).

Beck's meta-analysis identified some significant predictors for postpartum depression, which can occur immediately after birth or, most often, 4-6 months after delivery. Among them some have at least moderate effect strength (see Table 1) (Beck, 2001). The remaining three factors, marital status, socioeconomic status, and unplanned/unwanted pregnancy displayed low effect strength.

Table 1. Risk factors for peripartum depression in descending order of effect strength (Beck, 2001).

Antenatal Depression	**Postpartum depression**
Prenatal anxiety	Prenatal depressive disease
Stressful negative life events	Lack of self-esteem
Lack of support from partner	Stress of child care
Life events	Prenatal anxiety
History of depressive disease	Stressful life events
Lack of social support	Lack of social support
Unwanted pregnancy	Quality of relationship with partner
Quality of relationship with partner	History of depressive disease

Overall, the risk of postpartum depression seems to increase in the presence of psychopathological problems, whether in the past or during pregnancy, or lack of support from the woman's partner or her wider social environment. A great number of studies support the correlation between postpartum depression and lack of social support or other childcare stressors. Infants require an extraordinary degree of care. Lack of support and insufficient investment from fathers and/or other family members could increase the costs that are borne by mothers. Mothers with inadequate social support could direct negative emotions towards the infant and reduce their investment towards him, thereby reducing the emotional and practical tasks she has to bear after childbirth (Beck,1996; Hagen, 1999). Mothers with postpartum depression could exhibit fewer positive emotions and more negative emotions toward their children. They could also be less responsive and less sensitive to infant cues, less emotionally available, and could have a less

successful maternal role attainment (Beck, 1996; Cohn, et. al., 2009; Field, et. al. 1985; Hoffman & Drotar, 1991).

The risk factors for depressive illness in pregnancy have not been studied for long, but on the basis of the data published so far they do not seem to differ from the known risk factors for postpartum depression (Hübner-Liebermann, et. al., 2012).

Nowadays there is little evidence about psychosocial and psychotherapeutic prevention. Dennis and Creedy (2004) conducted a review of the psychological and psychosocial measures designed to prevent postpartum depression: These include psycho-educational strategies, cognitive behavioural therapy, interpersonal psychotherapy, non-directive counselling, psychological debriefing, various supportive interactions, and tangible assistance - delivered via telephone, home or clinic visits, or individual or group sessions antenatally and/or within the first month postpartum by a professional (nurse, midwife, childbirth educator, physician) or lay person (a specially trained woman from the community, a student). They came to the conclusion that these measures are unpromising: The women in the intervention and control groups had the same risk of becoming depressed after giving birth. However, the risk was reduced in mothers who received intensive support from a midwife after delivery. In general, the successful interventions were those that specifically targeted high-risk women, started postpartum, and were carried out on an individual basis. Milgrom and colleagues (2011), designed a nine-unit workbook to be used by mothers and fathers from around 26 weeks of gestation to 6 weeks postpartum. The parents follow the workbook without external guidance, with the exception of a weekly telephone conversation with a psychologist. The focus is on reducing risk factors, increasing parents' competence and problem-solving skills, and facilitating treatment for existing symptoms. Preliminary results show significantly lower levels of depression and anxiety in the intervention group. A 2013 Cochrane review found evidence that psychosocial or psychological intervention after childbirth helped reduce the risk of postnatal depression (Dennis & Dowswell, 2013). These interventions included home visits, telephone-based peer support, and interpersonal psychotherapy; a major part of prevention is informing about the risk factors and facilitating the

identification of PPD.

The treatment for depression in the peripartum period is based on psycho-education, inclusion of relatives, psycho-pharmaceutical treatment, and psychotherapy but the effects of these interventions are nowadays unclear. In the postpartum period, all evaluated psychotherapeutic and psychosocial interventions, such as peer support, supportive therapy, cognitive behavioural therapy, inter personal therapy (IPT), and psychodynamic therapy were significantly more effective than standard aftercare, at least for the first year postpartum (for a review, see Hübner-Liebermann, et. al. 2012 and Anninverno et.al., Osservatorio Nazionale sulla Salute della Donna O.N.D.A. 2011).

There is lack of randomised trials on psycho-pharmacotherapy during pregnancy and lactation and those that have been published are marred by methodological limitations. Nevertheless, existing data evaluated the older tricyclic antidepressants (TCA) and the frequently-prescribed selective serotonin reuptake inhibitors (SSRI, such as fluoxetine, paroxetine, sertraline, and citalopram), which are nowadays considered the first-line treatment. All these substances permeate the placenta or are detectable in breast milk and can lead to central nervous, gastrointestinal, and respiratory adjustment disorders in newborn children. With regard to pregnancy, the embryo is particularly susceptible to toxins in the first trimester.

Many reviews and trials have been written on use of SSRI during pregnancy and possible short and long term negative outcomes on neonates. The literature has so far described various kinds of peripartum illnesses related to SSRI exposure during foetal life, such as increased incidence of low birth weight, respiratory distress, persistent pulmonary hypertension, poor feeding, and neurobehavioural disease. Nevertheless, different degrees of neonatal outcomes are possible, and not all the newborns exposed to SSRI during pregnancy will definitely develop a negative outcome (Giudici et. Al, 2014). Given the foetal outcomes observed, it is essential to cautiously assess the need for psychopharmacological therapy in relation to untreated depression, evaluating the risk-benefit ratio of antidepressant medication in pregnancy.

Untreated peripartum depression has serious consequences for mother and child: Antenatal

depression (AND) is associated with an elevated risk of premature birth, lower birth weight, and delayed intrauterine growth. The possible causes include dysregulation of the maternal–foetal hypothalamic–pituitary–adrenal axis and a disordered intrauterine milieu owing to fluctuations in arterial blood flow. Researchers report lower variability in heart rate in the foetuses of stressed pregnant women. The foetuses of women with depression display a higher baseline heart rate, prolonged reaction time and pulse recovery, and increased motor activity. The affected women themselves show inadequate weight gain, less frequent attendance for prenatal examinations, and increased substance abuse (Kinsella & Monk, 2009). Furthermore, some studies found a higher frequency of depressive symptoms in women with (gestational) diabetes: This group had a 1.85-fold risk of peripartum depression, corresponding to an increase of almost 7% in absolute risk.

The behaviour of depressed mothers of babies aged up to 6 months is characterised by reduced verbal and visual communication. The children more frequently display sleep and breastfeeding problems, avoidance behaviour (aversion of gaze, turning the body away), decreased affect regulation, feeding disturbances, and failure to thrive. In the long term, the children of mothers with peripartum depression show insecure-avoidant attachment, and reduced cognitive, emotional, verbal, and social skills can be observed right up to puberty (Brand & Brennan, 2009).

Another variable that may affect women's relations with their children and partners is Emotional Regulation (Giurgescu, et al., 2006). Emotional regulation is operationalised as the ability to manage negative emotions and to express positive ones (Caprara, et al., 2008). Research on Major Depressive Disorder (MDD) has identified cognitive processes that play a critical role in the onset and maintenance of the symptomatology such as cognitive biases and deficits in cognitive control. These cognitive processes affect the responding to emotion-eliciting situations by interfering with effective emotion regulation (Joormann & Quinn, 2014). Sustained negative affect and diminished positive affect are features of MDD, but no studies have evaluated how this constructs are characterised in PPD.

2.3.3 Postpartum Psychosis

Postpartum psychosis (or puerperal psychosis, PP) is a term that covers a group of mental illnesses with the sudden onset of psychotic symptoms following childbirth. PP is the most serious form of psychopathology in the postpartum period. Its incidence is less than 1 in 1000 deliveries and it has a world-wide prevalence (Terp & Mortensen, 1998; NHS, Perinatal Mental Health good practice guidelines, 2010). It is more common in first-time mothers.The onset is abrupt, and symptoms rapidly reach a climax of severity. Manic and acute polymorphic forms almost always start within the first 48 hours up to 2 weeks after delivery, but depressive psychosis may develop somewhat later, up to 12 weeks after childbirth (Beyondblue, Clinical Practice Guidelines, 2011).

Some women have typical manic symptoms, such as euphoria, overactivity, decreased sleep requirement, loquaciousness, flight of ideas, increased sociability, disinhibition, irritability, violence and delusions, which are usually grandiose or religious in content. On the whole, these symptoms are more severe than in mania occurring at other times, with highly disorganised speech and extreme excitement. Others have severe depression with delusions, auditory hallucinations, mutism, stupor or transient swings into hypomania. Some switch from mania to depression (or vice versa) within the same episode. Atypical features include perplexity, confusion, emotions like extreme fear and ecstasy, catatonia or rapid changes of mental state with transient delusional ideas. These are so striking that some authors have regarded them as a distinct specific disease, but they are the defining features of acute polymorphic (cycloid) psychoses, and are seen in other contexts (for example, menstrual psychosis) and in men (NHS, Perinatal Mental Health good practice guidelines, 2010). Puerperal recurrences occur after at least 20% of subsequent deliveries, or over 50% if depressive episodes are included (Robertson, 2005).

PP may be the manifestation of a psychotic onset of a manic episode in a bipolar disorder or a brief reactive psychosis, or an exacerbation of a schizophrenic disorder (Scottish Intercollegiate

Guidelines Network, 2002). It usually requires immediate psychopharmacological treatment because of the danger for both mother and child. A high risk of suicide and infanticide exists especially when the focus of the delusions or hallucinations is the child, perceived by the mother as a malevolent entity or as threatening (Stone & Menken, 2008). Severe overactivity and delusions may require rapid tranquilisation by neuroleptic (antipsychotic) drugs, but they should be used with caution because of the danger of severe side effects. Mood stabilising drugs such as lithium are also useful in treatment and possibly the prevention of episodes in women at high risk (i.e., women who have already experienced manic or puerperal episodes).

The location of treatment is an issue: Hospitalisation is disruptive to the family, and it is possible to treat moderately severe cases at home, where the sufferer can maintain her role as a mother and build up her relationship with the newborn. This requires the consistent presence of competent adults (such as the baby's maternal grandmother), and frequent visits by professional staff (Oates, 1988). If hospital admission is necessary, there are advantages in conjoint mother and baby admission. Yet multiple factors must be considered in the subsequent discharge plan to ensure the safety and healthy development of both the baby and its mother (Almeida et.al, 2009). This plan often involves a multidisciplinary team structure to follow up on mother, baby, their relationship and the entire family.

2.3.4 Post Traumatic Stress Disorder

Post-traumatic Stress Disorder (PTSD) is a mental health condition that is triggered by a terrifying event — either experiencing it or witnessing it. It is included in a new chapter in DSM-5[5] on Trauma and Stress or Related Disorders. It affects a disproportionately high number of women in childbearing age, with a lifetime prevalence in the range of 1.5% (Ayers & Pickering 2001) and 6% (Menage 1993). DSM-5 pays attention to the behavioural symptoms that accompany PTSD and

[5]The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) is the 2013 update of the American Psychiatric Association's (APA) classification and diagnostic tool. In the United States, the DSM provides universal guidelines for psychiatric diagnosis. Treatment recommendations, as well as payment by health care providers, are often determined by DSM classifications.

proposes four distinct diagnostic clusters: re-experiencing, avoidance, negative cognitions and mood, and arousal. Re-experiencing covers spontaneous memories of the traumatic event, recurrent dreams related to it, flashbacks or other intense or prolonged psychological distress. Avoidance refers to distressing memories, thoughts, feelings or external reminders of the event. Negative cognitions and mood represent a myriad feelings, from a persistent and distorted sense of blame of self or others, to estrangement from others or markedly diminished interest in activities, to inability to remember key aspects of the event. Finally, arousal is marked by aggressive, reckless or self-destructive behaviour, sleep disturbances, hyper- vigilance or related problems (APA, 2013).

The birth of a child is one of the most intense and emotional experiences in a woman's life and results in extreme perceptions of this event. Both traumatically experienced childbirth and stressful events in the individual life story of a woman can result in significant psychological impairments postpartum. Depending on objective and subjective factors, childbirth can act as a significant stressor and trigger for PTSD. The disorder and its severity are defined not only by the trauma, but also by the subjective reaction to the traumatic event. Both the threat to physical integrity and the threat to being an autonomously acting and thinking person, have a traumatising effect (Schwab et. al, 2012). It would appear obvious to consider childbirth as a potentially traumatising event which can result in the development of PTSD and subsyndromal forms of this disorder (Olde et al. 2005).

The experience of extreme pain, loss of control, fear of dying, and fear of the child's death during labour, for example, put women at a higher risk of PTSD. The pain and stress caused by a traumatic birth can affect the ability of women to breastfeed, and they can interfere negatively in the mother-child relationship (Anninverno et.al., Osservatorio Nazionale sulla Salute della Donna O.N.D.A., 2011), the general adaptability (Beck, 2004) and the partnership (Bailham & Joseph, 2003). The major predisposing factors include: exposure to actual or threatened death (e.g. domestic violence), serious injury or sexual violation. Additional factors could be lack of social support, poor coping strategies, feelings of helplessness, extreme pain, and unexpected outcomes of labour and delivery (including death or disease of the child), previous traumatic births, perception

of an uncaring and hostile medical staff, loss of control, medical interventions, and lack of information (Anninverno et. al., Osservatorio Nazionale sulla Salute della Donna O.N.D.A., 2011).

The exposure to the events described above must result from one or more of the following scenarios, in which the individual: a) directly experiences the traumatic event; b) witnesses the traumatic event in person; c) learns that the traumatic event occurred to a close family member or close friend (with the actual or threatened death being either violent or accidental); or d) experiences first-hand repeated or extreme exposure to aversive details of the traumatic event (not through media, pictures, television or movies unless work-related. Regardless of its trigger, PTSD causes clinically significant distress or impairment in the individual's social interactions, capacity to work or other important areas of functioning. It is not the physiological result of another medical condition, medication, drugs or alcohol.

The most recent review about PTSD management after childbirth showed that some studies examined debriefing or counselling; others described the effects of cognitive behavioural therapy (CBT), and one study described the use of eye movement desensitisation and reprocessing (EMDR). Results are in line with the findings from the non-childbirth related literature: Debriefing and counselling are inconclusively effective, while CBT and EMDR may improve PTSD status (Lapp et. al., 2010).

The high prevalence rate of PTSD in woman of childbearing age should result in the consideration of this disease pattern in gynaecological practice in differential diagnosis. This is the only way in which affected patients can receive the necessary treatment in order to avoid chronification of this disorder. The benefit of early detection and therapy of PTSD in pregnancy consists of the prevention and minimisation of unfavourable physical and psychological effects on mothers and their newborn (Schwab et. al, 2012).

2.3.5 Anxiety Disorders

Although the mother's adjustment following birth has received significant consideration in

applied practice over the past decade, particularly addressing the presence of postpartum depression and psychosis, little attention has been given to postpartum anxiety disorders.

Anxiety disorders include generalised anxiety disorder, phobias (specific and social), Obsessive-Compulsive Disorder (OCD), adaptation disorders, panic disorders and agoraphobia (Matthey, et. al., 2003). Literature showed that in postpartum women, they are as common as postpartum depression (Austin & Priest, 2005). Research has also demonstrated that depressive and anxiety symptoms are often co-morbid throughout the perinatal period (for a review, see Rallis et. al. 2014).

Some of the common symptoms are hot and cold flushes, racing heart, tightening of the chest, snowballing worries, feeling of restlessness, feeling easily tired, difficulty in concentrating, feeling irritable, muscle pain (e.g. sore jaw or back), troubled sleep, changed work patterns, not attending social events, avoiding health check-ups, sweat, shake, increased heart rate, short of breath, nausea or pain in the stomach, dizziness, feeling lightheaded, numbness, derealisation (feelings of unreality) or depersonalisation (feeling detached from oneself or the surroundings), fear of going crazy, fear of dying (Beyondblue Clinical Practice Guidelines, 2011). The anxious ideation expressed during maternity includes fear of stillbirth, of the sudden death of the child and fear of harming the baby. When it reaches psychopathological severity, it can induce and/or reinforce dysfunctional behaviours, and worsen the psychic status (e.g. hypervigilance, altered sleep-wake rhythm, onset of depression and puerperal psychosis) (Brockington, 2004).

One manifestation of anxiety disorders is Obsessive-Compulsive Disorder (OCD) which affects 0.6% to 2.0% of adults (Speisman, 2011) and is characterised by senseless intrusive thoughts that provoke uneasiness, apprehension, distress (obsessions, such as unwanted images of the newborn dying during sleep, aggressive obsessions about intentionally or accidentally harming the newborn, contamination, symmetry/exactness, like obsessing over the proper symmetrical positioning of the infant's blanket), and urges to perform behavioural or mental rituals (often to excess), repetitive behaviours aimed at reducing the associated anxiety that serve as a means to neutralising the obsessional anxiety (compulsions, such as excessively checking that the baby is still breathing, or

safe). Symptoms of the disorder include excessive washing or cleaning, repeated checking, extreme hoarding, preoccupation with sexual, violent or religious thoughts, relationship-related obsessions, aversion to particular numbers and nervous rituals such as opening and closing a door a certain number of times before entering or leaving a room. These symptoms are time-consuming, might result in loss of relationships with others, and often cause severe emotional and financial distress (DSM-5, 2013). The acts of those who have OCD may appear paranoid and potentially psychotic. However, people with OCD generally recognise their obsessions and compulsions as irrational and may become further distressed by this realisation.

Independent of aetiology, OCD is associated with marked functional impairment and decreased quality of life in social functioning, work/employment, and family domains (APA, 2000). Women with postpartum OCD may experience less severe obsessions and compulsions as compared to in-patient non pregnant women with OCD. Yet the content of their intrusions is generally more aggressive in nature. Contamination symptoms (e.g., feeling as though you are covered in germs that are dangerous to your baby) as well as compulsive checking and ordering (e.g., excessively checking on a healthy sleeping infant) are commonly exhibited in women with postpartum OCD (Uguz et al., 2007)

The course of postpartum obsessive-compulsive symptoms is unclear with about one half of women experiencing an abrupt symptom onset whereas others experiencing a more gradual onset (Maina et al., 2000). Among those previously diagnosed with OCD, about 17% of women experience symptom exacerbation during pregnancy, approximately 29% to 31% experience a symptom exacerbation in the postpartum, and approximately 40% experience comorbid postpartum depression. However, approximately 14% to 22% of women with OCD report improvement in their obsessive-compulsive symptoms during pregnancy and postpartum. Overall, studies addressing clinical OCD populations have found mixed results concerning the worsening or improvement of OCD during pregnancy and the postpartum period. However, it is evident that a large portion of women with OCD tend to have a significant worsening of symptoms following the birth of their

infants (for a complete review, see Speisman, 2011).

There seems to be a possible relationship between postpartum depression and the presence and severity of obsessive-compulsive symptoms. Aggressive and unwanted thoughts of hurting the infant are predominant in postpartum psychopathology. Causal relationships between postpartum depression and postpartum obsessive and compulsive symptoms cannot be inferred at this time. However, the occurrence of obsessive-compulsive symptoms in the postpartum is extremely distressing (e.g., "What kind of mother am I to think these things?") and therefore may contribute to the development of depressive symptoms (Abramowitz et.al., 2003). This relationship is salient as postpartum depression is more easily recognised than postpartum OCD.

When left untreated, OCD runs a chronic and debilitating course. The WHO has ranked OCD as the 10th leading overall cause of disability, and in certain populations, including young women aged 15 to 44 years, OCD is ranked as the 5th leading cause of disability (Ayuso-Mateos, 1999). Tried by obsessive thoughts and compulsive behaviours, the mother has little time and energy to care for herself and the child.

Treatment for postpartum OCD should involve similar approaches as used in treatment for OCD occurring at other times in life (for a review see Abramowitz, 2006), namely cognitive-behavioural therapy (CBT) and serotonin reuptake inhibitor (SRI) medication. The primary treatment components of CBT involve helping the patient confront feared stimuli—including situations and thoughts (i.e., exposure)—while refraining from performing compensatory rituals (response prevention). This is referred to as exposure and response prevention (E/RP); and it involves gradually learning to tolerate the anxiety associated with not performing the ritual behaviour. Pharmacotherapy with SRIs is a widely used first line treatment for OCD with approximately 40% to 60% of patients achieving clinical response ranging from 20% to 40% symptom reduction (Kaplan & Hollander, 2003). However, many patients do not respond, partial symptoms tend to remain even after successful response, and clinical remission is rare. Additionally, SRIs may be refused by some patients, particularly breastfeeding mothers, as the risk for adverse effects is

modest.

2.4 The Scientific Literature on Ill-being and Well-being in Pregnancy

The scientific literature on women's ill-being across pregnancy and puerperium is extremely large and women's mental illness has been widely covered in-depth and from different perspectives and points of view (Haga, et al., 2012; Webster, et al., 2011; Zubaran & Foresti, 2011). As seen in the previous section, starting in the 50's authors began to question themselves with respect to mental hygiene in pregnancy and labour in terms of the possibility of developing a psycho-pathological disorder (Caplan, 1951; Livingstone, 1955). Literature has later shown that women's ill-being is influenced by other variables.

On the contrary, research on mothers' well-being and mental health is particularly poor and underrepresented.

In order to accurately report an up to date summary of what is known today about ill-being and well-being in pregnancy, the following sections will firstly focus on the most recent publications about other variables and consequences of mothers' ill-being, and secondly on the existing research on well-being in its hedonic and eudaimonic components.

2.4.1 Pregnancy, postpartum and ill-being

Feelings that the emotional life of the mothers influences the development of the foetus and of the offspring are ubiquitous and persistent throughout culture and history. Recently, an important body of scientific evidence and ensuing media coverage has moved the notion that pregnancy, the foetus, and subsequent child development are put in jeopardy by a constellation of maternal indicators of psychological distress, including stress, anxiety, and depression (DiPietro, et al., 2006).

Scientific findings indicate that perceived stress during pregnancy and puerperium is a crucial variable in mothers' assumption of the maternal role: Ii is related in fact to mental illness of mothers' (Hung, 2004). The level of perceived antenatal stress is associated with depressive

symptoms during pregnancy and postpartum (Gao, et. al., 2009; Leigh & Milgrom, 2008; Leung et al., 2005; Corwin et. al., 2005). Similarly, perceived postnatal stress is associated with postpartum depressive symptomatology and anxiety (Britton, 2008).

With regards to psychological distress, one line of research has been directed at detecting proximal effects of stress levels during pregnancy and their association with shortened gestation and/or restricted growth of the foetus. Although some associations were found, results are by no means uniform (for reviews see Kofman, 2002).

A second line of research has focused on describing the birth-related events that could cause intense stress to the mother, as the interaction with health care personnel, the organization of the return home, or the establishment of breastfeeding (Razurel, et al., 2011). Literature shows that the nature of the events inducing stress plays a role in the association between these events and depressive symptoms. For example, stress caused by childcare is not related to postpartum depressive symptoms, whereas stress associated with the parental role seems to predict depressive symptomatology (for a complete review see Ruzurel, et. al., 2013).

Moreover, the evaluation of the relationship between perceived stress and different psychosocial resources (in particular social support), has been evaluated in order to understand how people survive and endure under adverse condition, and in order to describe the role that resources play in the interaction between birth events and mothers' psychological experiences (Ruzurel, et. al., 2013).

Social support during the antenatal or postnatal period appears to be a major factor related to mothers' mental illness. It may play a mediating role between family conflicts and postpartum depressive symptoms, and between antenatal anxiety and postpartum depressive symptoms (Ruzurel, et. al., 2013). Social support from the partner for example seems to be a protective factor against postpartum depressive symptoms (Dennis & Ross, 2006; Dennis & Letourneau, 2007; Hildingsson et al., 2008). One study evaluating peer support (Dennis, 2003) in a population of mothers at high risk of developing postpartum depression showed that peer support in the early postpartum was related to fewer depressive symptoms in new mothers. Moreover, some studies

evaluating the relation of social support from health professionals to mothers' ill-being, reported that low social support from health professionals during pregnancy was associated with greater postpartum depressive symptoms (Webster, et al. 2000; Ruzurel, et al., 2013).

Another widely covered aspect of mothers' mental ill-being is the consequence of psychopathology on breastfeeding. Literature starts from the assumption that from a physio-psychological point of view maternal adaptation is promoted by oxytocin release caused by skin-to-skin contact and breastfeeding in the early postpartum (Lilja et.al., 2011). Breastfeeding and the consequent mother-child bonding is associated with calmness and openness to the infant (Jonas, et al., 2008). Moreover, breastfeeding offers a wide range of benefits for both the child and the mother. The benefits for the infant include a diminished risk of infectious diseases and obesity and decreased blood pressure (Brion et al., 2011). For the mother, breastfeeding confers a lower risk of ovarian and breast cancers and decreased blood pressure (González-Jiménez et al., 2013; Ebina and Kashiwakura, 2012). Breastfeeding also represents a unique emotional experience. The close contact between the mother and the child during breastfeeding creates a reciprocal sense of love and connection which forms a strong and enduring emotional bond (Nagy & Vinklerova, 2011). Recognised as the optimal infant feeding method, the guidelines specified by the WHO, the European Commission for Public Health (ECPH) and the American Academy of Pediatrics (AAP) recommend exclusive breastfeeding in the first 6 months postpartum (World Health Organization, 2007). This pattern is easily disturbed when psychological and psychiatric symptoms occur.

A systematic review by Castro Dias and Figueiredo (2014) provides an overview of the current knowledge on the associations among breastfeeding and pregnancy or postpartum depression. The authors included studies published over a 30-year period in several countries. They found trends regarding symptoms of depression both during pregnancy and the postpartum period having a negative impact on breastfeeding. Women with depressive symptomatology were found at higher risk of breastfeeding discontinuation. In particular, prenatal depression, postpartum depression and postpartum depressive symptoms, predicted shorter breastfeeding duration. Moreover, experiencing

breastfeeding problems (e.g., breastfeeding difficulties, pain, worries, low self-efficacy, and negative attitudes) can also expose women to a higher risk of developing postpartum depression. In summary, they pointed to the role of depressive symptoms during pregnancy and puerperium on breastfeeding duration and the role of breastfeeding duration on depressive symptomatology maintenance through the postpartum period. Another review by Grigoriadis and colleagues (2013), described that depression in pregnancy is significantly associated with decrease in breastfeeding initiation.

A growing body of research over the past decade has established that maternal experiences in pregnancy have extensive effects on the foetus and offspring, which may persist throughout the life span (Dunkel Schetter, 2011). There has been a number of relatively recent studies that provide prospective data linking maternal psychological factors to subsequent child behaviour. Studies focus on two types of outcomes: temperament or behavioural disorders and developmental status of the child (DiPietro, et. al., 2006). The largest study focusing on the former issue is a population-based study carried out in southern England, which has generated reports that maternal prenatal anxiety, but not depression, is positively associated with greater incidence of child behavioural and emotional problems at age 4 (O'Connor, et.al., 2002a; O'Connor, et.al, 2002b). These analyses established that maternal psychological attributes define the perception of the child's temperament and behaviour: Women reporting greater stress, anxiety, or depression also perceive their infants to be more problematic (Atella, et.al, 2003; Clarke-Stewart, et.al, 2000).

Another studied aspect of women's mental ill-being regards the consequences of mother's psychopathology on the health status of the infant and on the relationship with the newborn and with the partner, studies show that early depressive symptoms may hamper the mother–infant interaction (Lilja et.al., 2011; Poobalan et. al., 2007; Field, et.al, 1990) over the first year postpartum (Nagata, et.al, 2003) and delay maternal feelings for the baby (Robson & Kumar, 1980). Moreover, mothers with depressed mood postnatally report more difficulties in coping with their infant at 12 months postpartum, even if they no longer feel depressed (Edhborg, 2000). In addition,

women who present early depressive symptomatology postpartum show significantly less closeness, warmth and confidence as collectively measured by the infant and partner relationship scales over the first year postpartum, predicting a less positive relationship with the baby (Lilja et. al., 2011). These disturbances in the early relationship, might in turn lead to delays in emotional and cognitive development (Reck, et al., 2006; Murray & Cooper, 1997), particularly for boys (Sharp, et al., 1995), insecurity of the infant-mother attachment (Teti, et al., 1995), and behavioural disturbances (Grace, et.al, 2003).

Buultjens and Liamputtong (2007) have observed that not all mothers with a psychiatric history feel love for their baby immediately after birth. Indeed, Robson and Kumar (1980) showed that approximately 15–40% of new mothers experience a delay of affection towards their infant.

Lilja and colleague's findings (2011) also clearly demonstrated that the presence of a depressive maternal mood early postpartum had a negative impact on the new mother's relationship with her partner over the first year. As depression continues over months, support from the partner is often withdrawn and replaced by a more critical stance, which may lead to a breakdown in communication (Condon, 2006). Moreover, if the woman is depressed during pregnancy or early postpartum, there is an increased risk that her partner will also become depressed (Goodman, 2004; Matthey, et.al., 2001). In conclusion, maternal depression during the perinatal period has been found to negatively impact the adaptive functioning of the entire family (Boath, et.al., 1998; Martell, 1990).

2.4.2 Pregnancy, postpartum and well-being

Research on antenatal care has recently expanded its traditional aim of preventing, detecting and managing problems to broader goals that include encouragement and support to families' healthy psychological adjustment to childbearing (Das, 1999). In line with the bio-psycho-social approach and with the new positive psychology movement (Seligman & Csikszentmihalyi, 2000), the need for promoting health and well-being during pregnancy and puerperium has been repeatedly

stressed by the WHO and by European and National institutions. In the last decades a new area of studies has focused on the individual and environmental resources that can promote well-being and life fulfilment in this period. Research on well-being in pregnancy has mostly focused on single components of well-being, prominently privileging hedonic indicators (Hoffenaar et.al., 2010; Dyrdal et al., 2011), except for few studies focusing on eudaimonic ones (Delle Fave & Massimini, 2004; Taubman – Ben-Ari et al., 2012). A description of what has emerged from the scientific literature on the subject will follow.

The first line of research focused on hedonic indicators of well-being. In a study on the impact of having a baby on women's subjective well-being (SWB) (Hoffenaar, et al., 2010) analyses were performed on positive and negative affect and daily activities such as social interactions. A group of 19 first-time mothers completed a set of questionnaires at two time points: approximately 4 weeks before estimated delivery and at 1 month postpartum. In order to analyse the judgemental and affective aspects of well-being the authors included global measures of life satisfaction and affective experience measures derived from the Day Reconstruction Method (DRM). DRM is a diary recall method that provides data on women's time use in combination with their affective experience over time. It allows researchers to link women's reported SWB to their daily activities and the social interactions they engaged into. DRM quantifies SWB depending on participants' recollections of their emotions during the previous day (Kahneman et al., 2004) thus providing insight into the content of well-being.

Authors found no differences between pre- and postnatal reports of general life satisfaction, depression, anxiety, and experienced positive and negative affect, suggesting that the arrival of the newborn baby does not universally impact on women's level of SWB. Moreover, results highlighted that women generally coped well with the transition to motherhood. Modifications in the content of well-being were studied by examining changes in the way women experience specific activities and interactions with various social partners. An upward shift in experienced positive affect during active leisure was detected as well as a slight decrease in negative affect

during time spent with relatives. The authors also described a stability in experienced positive affect and negative affect during interactions with one's spouse, which appears to contradict the generally accepted notion that the quality of the couple relationship declines during the transition to parenthood (for a review, see: Glade, et al., 2005).

The second study on hedonic well-being indicators (Dyrdal, et al., 2011) longitudinally investigated the association between overall life satisfaction (LS) and relationship satisfaction (RS) among mothers, using data from the Norwegian Mother and Child Cohort Study (MoBa) conducted by the Norwegian Institute of Public Health. Specifically the study investigated how mothers' life satisfaction and relationship satisfaction changed from pregnancy, infancy, to toddlerhood. Data were collected twice during pregnancy (at recruitment and at 30 weeks gestation), and at 6 and 36 months postpartum. Overall, Norwegian mothers were found to be highly satisfied with their lives throughout the duration of the study. Satisfaction increased during pregnancy, with RS decreasing immediately following birth and LS showing an initial increase followed by a decrease postpartum. The results showed that LS and RS levels were quite stable over time, as was their cross-sectional associations. Structural equation modeling using a cross-lagged longitudinal model evidenced cross-concept cross-time effects for both LS and RS. The strengths of the cross-effects were asymmetrical and life-phase specific, with RS predicting change in LS more than LS predicted changes in RS during pregnancy and infancy. Having a satisfying and stable romantic relationship was found to be important for retaining and increasing future life satisfaction, happiness, and in order to obtain good mental health among parents as well as children. As such, encouraging couples to build and maintain a strong relationship seems vital for living a future happy life.

The second line of research focused on eudaimonic indicators of well-being. Delle Fave & Massimini (2004) carried out a longitudinal study analysing the time budget and the quality of experience reported by new parents. Five primiparous couples were repeatedly administered Experience Sampling Method (ESM; Csikszentmihalyi & Larson, 1987; Csikszentmihalyi et al., 1977; Larson & Csikszentmihalyi, 1983). A complete overview of ESM will be presented in

Chapter 3. They carried pagers sending random acoustic signals 6–8 times a day; at the signal reception, they filled out forms sampling current thoughts, activities, and the quality of experience. Eight sampling sessions were carried out: 4 during pregnancy, and 4 after delivery, each one lasting 7–12 days. Gender differences emerged in the parents' time budget: Fathers spent a much lower amount of time with their children than mothers. Moreover, maternity leave deeply influenced mothers' time budget: They reported a strong decrease in the percentage of work activities after childbirth and a smaller amount of time watching TV and reading. Mothers were also less frequently involved in social interactions, and in maintenance activities.

Parents' quality of experience was analysed in four daily activities: parenting, work, leisure, use of media. No significant difference was found in the quality of experience perceived by mothers and fathers in daily activities. In particular, both spouses prominently associated parenting with the perception of high challenges and engagement, positive mood and intrinsic motivation. Moreover, optimal experience in parenting was characterised by the highest values of all subjective dimensions, if compared with the other daily activities. In terms of psychological selection, the association of a positive and challenging experience with parenting enhanced the probability that the parents would preferentially select and cultivate child-related activities in the future. Like parenting, work was characterised by the perception of high challenges and engagement, however data also showed that work activities were associated with negative mood and low intrinsic motivation. Leisure accounted for a very low percentage of observations. It mostly comprised more structured activities for fathers (specifically sports) and less structured ones for mothers (taking a walk, idling, being at home). This finding was partially influenced by the physical limitations imposed on mothers by pregnancy and postpartum. The use of media was mostly associated with low-challenge situations.

At the methodological level, this investigation highlighted the importance of monitoring subjective experience during real life. Specifically, it avoided the *a posteriori* reconstruction of experience, which could be misleading in the study of complex situations such as parenthood. The findings confirmed the relationship between quality of experience and individual development:

activities providing challenges and engagement were preferentially associated with optimal experience (e.g. parenting and work); while simple and passive tasks (e.g. use of media) provided negative mood and disruption of attention. As concerns parents, the association of optimal experience with child care, but also more generally with daily activities, was considered a good starting point for child development: Parenthood represents an opportunity for development requiring the acquisition of new skills, at the individual as well at the interpersonal level; at the same time, being associated with intrinsic motivation, it fostered commitment and engagement independently of extrinsic rewards. Although the small sample size, the analysis of individuals' personal and thus unique experience fluctuation within the daily contexts provided useful information for the understanding of behaviour and of the underlying psychological processes.

Another research focusing on eudaimonic indicators was carried out by Orit Tauban and colleagues (2012). The cross-sectional study examined the positive aspects of personal growth and meaning in life among mothers who gave birth 6 to 24 months before. As presented before, previous research tended to look at mothers' adaptation only in terms of level of distress. By contrast, the authors investigated the contribution of the internal resources of perception of self (e.g. self-esteem) and perceived characteristics of the situation (e.g. cognitive appraisal of threat, challenge, and self-efficacy), and the external resource of perceived social support and age.

Findings indicated that cognitive appraisal and internal and external resources are crucial elements in this life transition. Higher appraisal of challenge was associated with higher growth. This suggested that when an event is perceived positively, even if it involves certain difficulties, it is more likely to generate a sense of growth. Moreover, the authors suggested that mothers with fewer external resources (i.e., a lower number of meetings with their mothers, less social support) and thus have to rely on themselves are more inclined to regard the birth of their first child as a challenge, leading them to feel more competent and grow from the experience. Differently, those with more support tended to lean on others, allowing themselves to feel more anxious or threatened, which in turn prevented them from the experience of growth. With respect to age, results showed

that older mothers who were able to perceive more challenge in the new experience and were not intimidated by it were able to experience a sense of growth. Thus, older age for mothers seemed to emerge as a positive asset. Higher self-esteem and the perception of higher self-efficacy was found to contribute to higher meaning: New mothers who felt they were functioning successfully and with a higher regard for themselves in general were more likely to have a higher sense of meaning in life when motherhood was perceived as a challenge. Higher social support was found to be related to higher meaning in life.

Overall, the two lines of research yielded controversial evidence. On the one hand, from the hedonic perspective high levels of life satisfaction were detected before and immediately after delivery, followed by a drop from 6 months to 3 years after childbirth. Slight variations across samples were observed in relation to national policy provisions for parents, perceived social support, and marital satisfaction levels (Belsky & Rovine, 1990; Clench-Aas et al. 2009; Dyrdal et al., 2011; Pavot & Diener 2008). Other studies further detected differences in mothers' marital well-being according to the number of children: Women's happiness levels increased with the birth of the first child, and dropped after the birth of additional children (Kohler et al. 2005). On the other hand, from the eudaimonic perspective, the positive consequences of motherhood on personal growth and meaning making, in connection with the perception of high but life-relevant challenges, were highlighted in the study by Tauban and colleagues (2012). Their findings are consistent with those derived from the longitudinal assessment of parents' daily experience by Delle Fave & Massimini (Delle Fave & Massimini, 2004), in which mothers reported to perceive higher and more complex challenges than fathers in adjusting to their daily childcare commitments, at the same time identifying in these challenges opportunities for optimal experiences and long-term goal pursuit.

Overall, research on well-being highlighted that expecting and having a baby is not irremediably associated with negative outcomes such as depression. It can rather be considered as a positive, engaging and rewarding experience, especially when the eudaimonic components of well-being are taken into account. In particular, the complementary findings obtained through the assessment of

different well-being variables support the need for an integrated perspective – hedonic and eudaimonic - in the investigation of motherhood, which is the rationale of the current research.

CHAPTER 3

THE PRESENT RESEARCH

3.1 Introduction: Aims and Research Hypotheses

The present study aimed at analysing women's perceived well-being and ill-being in crucial periods of their lives, namely pregnancy and puerperium, collecting both qualitative and quantitative information on their everyday life and experience. Participants were second-time mothers for which the addition of a family member often represents an increase in time and energy demands connected to the need of integrating an additional child within the daily routine and family system (Gameiro, et al., 2009; Krieg, 2007; Le Masters, 1957).

The novelty in the present approach was to focus on the joint analysis of well-being, in both its hedonic and eudaimonic components, and ill-being, evaluated in terms of risk of perinatal depression. In addition, the present research adopted single-administration questionnaires as well as real-time measures as retrospective reports are subject to memory biases. For instance, individuals are more likely to recall and report experiences that seem more personally relevant (personal heuristics effect), that occurred more recently (recency effect), that stand out as significant or unusual (salience or novelty effect), or that are consistent with their current mood state (mood-congruent memory effect) (Trull & Ebner-Priemer, 2009). Moreover, studies have revealed only partial overlapping between retrospective ratings of mood and behaviors and real-time assessments (Feldman Barrett 1997; Schimmack, 2003). Because of the short time-lag between signal and response, real-time assessments reflect internal experiences and not individual's response styles (Schimmack, 2003) or social desirability (Hektner et al., 2007). Finally, a longitudinal approach was adopted.

Specifically, the first aim of this study was to present an overview on well-being and ill-being during pregnancy (20 weeks gestation) and puerperium (6 months after birth). In particular, we addressed the following questions: What is the impact of giving birth to a second child on hedonic

and eudaimonic indicators of well-being and on distress indicators? Do these indicators vary across pregnancy and puerperium? Are mental illness and mental health independent constructs or do they correlate to some extent as posited by the Two Continua Model (Keyes, 2002, 2005, 2007)?

In line with previous research on second-time mothers (Gameiro, et al., 2009), we expected to find differences between pre- and postnatal reports of depression, namely higher psychological distress and negative mood after childbirth. Nonetheless, from the hedonic perspective we expected to find a stability in the levels of life satisfaction from pregnancy up to 6 months postpartum, as described in previous studies on first-time mothers (Dyrdal, et al., 2011; Hoffenaar, et al., 2010). Moreover, we expected to detect positive consequences of motherhood on personal growth, in connection with the perception of high but life-relevant challenges (Delle Fave & Massimini, 2004; Taubman – Ben-Ari et al., 2012). According to Keyes's findings (Keyes, 2002, 2005, 2007), we hypothesised that indicators of mental health and mental illness would be only moderately and negatively correlated among our participants. Finally, we expected a drop of women's general ability of emotional regulation postpartum, as consistent literature linked depressive mood to both increased difficulty in the expression of positive emotions and to the management of negative ones (Joormann & Quinn, 2014; Berking, et al., 2014).

The second aim of this study was to describe participants' everyday life and the associated quality of experience in four crucial phases of pregnancy and puerperium (20-22 weeks gestation, 34-37 weeks gestation, 40 days postpartum and 6 months postpartum). Given the information available in the literature about the importance of family and social support in this life transition, we specifically focused on women's time budget and assessed their quality of experience while staying in family contexts. In particular we addressed the following questions: What are the characteristics of women's time-budget across pregnancy and after the second childbirth? How does the birth of a second child affect participants time-budget? What is the quality of experience reported during daily activities and when staying in the different family contexts? How does women's subjective experience fluctuates across this transition?

According to Delle Fave & Massimini's findings (2004), we expected mothers to spend a great amount of time with their children, before and particularly after pregnancy, reflecting a greater investment of time on the nuclear family. We hypothesised that the activities related to parenting and child-care would be characterised by high values of all the cognitive, affective, and motivational dimensions of experience, if compared to other daily activities, and that they would be sources of optimal experience and involvement. Previous research on women's quality of experience focused on first-time mothers, making it difficult to formulate specific hypotheses on our sample. Nonetheless, expecting to find higher psychological distress and negative mood after the birth of the second child, in line with previous studies on subjective experience (Delle Fave, Massimini & Bassi, 2011), we also hypothesised that participants would experience frequent occasions of apathy, relaxation, and boredom across pregnancy and puerperium. Finally, according to consistent previous literature findings (Glade, et al., 2005) we expected a decline in the time spent with the partner and in the perceived quality of the marital relationship.

3.2.The Sample

Participants were recruited at the Obstetric and Gynaecology Unit of Hospital Luigi Sacco of Milan, between November 2011 and January 2014. Inclusion criteria were Italian citizenship, single and spontaneous pregnancy, and being a second-time mother. Exclusion criteria were fetal malformations or chromosomal aberration-related diseases, and past diagnosis of major depression or other psychiatric condition.

Thirty patients who voluntarily took part in the study were initially recruited and signed the informed consent form. Among them, five dropped out for various reasons and did not complete the assessment at all four time points. Of them two decided to give birth in a different hospital, one had a health complication of her elder son; one experienced an important loss at the end of pregnancy (death in her family of origin) and one had a serious obstetrical complication (2 weeks before childbirth). Two were excluded from the study since they filled in a low number of ESM forms

(about 10); and one was excluded from the study because she gave the exact same answers to all Likert-type scales of ESM forms. Altogether, a total of eight women (26.67%) were thus excluded from the study. The drop-out group did not differ from the study group with respect to age, marital status and educational level. The remaining 22 women who provided valid data represent the sample for the our research.

Participants ranged in age between 24 and 40 years (M = 35.05, SD = 3.61), and they were married (77.27%) or cohabiting with their partner (22.73%). As for the educational level, 18.18% had a middle school degree, 45.45% had a secondary school degree, 4.55% had a undergraduate university degree, and 31.82% had a postgraduate degree. During the survey, all women had a job: They were mostly working as white collars (40.91%), teachers (13.64%), or health professionals (13.64%). Concerning work activities, women at the beginning of the study (T1) were mostly working (86.36%), while at 6 months postpartum (T4) the majority (59.90%) still was on maternity leave.

As for the hobbies they were practicing (Table 2), at 20 weeks gestation (T1) women were mostly engaged in reading (37.50%), while at 6 months postpartum (T4) in practicing sports (15.38%), outdoors informal activities like walking (15.38%), artistic activities (15.38%), social interactions (15.38%) or reading (15.38%). Women who are pregnant without contraindications should be encouraged to participate in aerobic and strength-conditioning exercises as part of a healthy lifestyle during pregnancy. Staying active during pregnancy can help experience fewer problems with joints, tendons, intestines, stomach and circulation. Moreover it can prevent constipation, which is a common symptom experienced during pregnancy, and prepare women to childbirth which is often physically demanding (Perales, et al., 2015). At 20 weeks gestation the majority of the women in our sample stopped practising physical activities which they partially resumed postpartum, describing themselves as mostly sedentary and missing of a recurrent hobby.

Concerning the obstetric history of the patients, one woman had a previous voluntary interruption of pregnancy, and five experienced one or more first trimester spontaneous abortion.

Most women (86.36%) had a previous vaginal delivery, while 13.64% experienced a previous cesarean section. They had on average 1 living child (SD=0.29), and 95.46% of women declared they desired and actively looked for the present pregnancy.

Table 2. Type of hobbies at 20 weeks gestation (T1) and at 6 months postpartum (T4) calculated on the total number of answers.

Categories	**T1** ***N = 24***	***T4*** ***N = 13***
	%	***%***
Practising sports	12.5	15.38
Practicing artistic activities	12.5	15.38
Cooking, sewing, knitting, traditional women activities	4.16	7.69
Social interactions	4.16	15.38
Attending art/cultural events	4.16	-
Reading	37.5	15.38
Electronic, media, TV	8.33	7.69
Religious activities	4.16	-
Leisure with family	4.16	-
Yoga, tai-chi, meditation, martial arts	4.16	7.69
Outdoors informal activities	4.16	15.38

Note: N= number of answers

3.3 Materials and Methods

3.3.1 Measures

Ill-being Questionnaires

Edinburgh Postnatal Depression Scale (EPDS; Cox, et al.,1987; Italian version: Benvenuti, et al., 1999; Appendix 1) investigates the severity of depression symptoms. The scale is widely used as a screening tool for postpartum depression (PPD). However, recent studies have shown its validity in measuring prenatal depression as well (Murray & Carothers, 1990; O'Connor, Heron, Glover & the ALSPAC Study Team, 2002). Participants were asked to think of their psychological condition over the past 7 days and to answer 10 self-report items on 4-point scales from 0 "not at all" to 3 "as much as I always could" (e.g. "I have been able to laugh and see the funny side of things").

Cronbach alphas were .84 at 20 weeks gestation (T1), .74 at 34-37 weeks gestation (T2), .83 at 40 days postpartum (T3) and .85 at 6 months post-partum (T4). According to Yonkers and colleagues (2009), EPDS is more adequate in measuring prenatal and postpartum depression than other questionnaires, such as the Beck Depression Inventory II (BDI-II; Beck, Ward, Mendelson, Mock & Erbaugh, 1961), because it provides a clearer distinction between the somatic and behavioural symptoms related to depression and those related to pregnancy (e.g. sleep deprivation, changes in appetite).

Symptom Checklist-90-R (SCL-90-R; Derogatis, 1994; Appendix 2) is a widely used multidimensional self-report symptom inventory consisting of 90 items, each measured on a 5-point scale of distress from 0 "not at all" to 4 "extremely". It explores the severity of respondents' symptoms over the previous 7 days. Distress dimensions include: Somatisation, Obsessive-Compulsive Disorder, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Psychoticism, and Paranoid Ideation. The scale presents 7 additional items which primarily touch upon disturbances in appetite and sleep patterns.

Alpha coefficients for the entire scale were .95 at T1 and .94 at T4. SCL-90-R is a widely used

instrument in Italy in both clinical and research settings, and a study by Prunas and colleagues (2012) has attested to the psychometric properties in the Italian version. In clinical practice, the SCL-90-R is used to reflect an individual's general symptom severity and it is frequently adopted as an outcome measure in psychotherapy research (Lambert & Hill, 1994) and primary care settings (Derogatis, et al., 2000).

Well-being Questionnaires

Satisfaction with Life Scale (SWLS; Diener, et al.,1985; Italian version: Goldwurm, et al., 2004; Appendix 3) was developed as a measure of the cognitive component SWB and asks respondents to report how much they agree (from 1 "strongly disagree" to 7 "strongly agree") on 5 statements assessing participants' level of overall satisfaction with their lives (e.g. "The conditions of my life are excellent"). The cut-offs to be used as benchmarks for this scale are: 31-35 Extremely satisfied; 26-30 Satisfied; 21-25 Slightly satisfied; 20 Neutral; 15-19 Slightly dissatisfied; 10-14 Dissatisfied; 5-9 Extremely dissatisfied (Diener, et al., 1985). Alpha coefficients were .86 at T1 and .84 at T4.

Psychological Well-being Scales (PWBS; Ryff, 1989; Italian version: Ruini, et al., 2003; Appendix 4) consists of 84 scaled items ranging from 1 "strongly disagree" to 6 "strongly agree". Alpha coefficients were .89 at T1 and .91 at T4. Each of the six dimensions of psychological well-being is investigated through 14 items: autonomy (e.g. "I have confidence in my opinions even if they are contrary to the general consensus"; T1 $\alpha = .78$, T4 $\alpha = .87$), environmental mastery (e.g. "I am quite good in managing the many responsibilities of my daily life"; T1 $\alpha = .61$, T4 $\alpha = .64$), personal growth (e.g. "I think it is important to have new experiences that challenge how you think about yourself and the world"; T1 $\alpha = .70$, T4 $\alpha = .74$), positive relations (e.g. "Most people see me as loving and affectionate"; T1 $\alpha = .66$, T4 $\alpha = .61$), purpose in life (e.g. "Some people wander aimlessly through life, but I am not one of them"; T1 $\alpha = .71$, T4 $\alpha = .61$) and self-acceptance (e.g. "I like most aspects of my personality"; T1 $\alpha = .77$, T4 $\alpha = .74$). Some reliability coefficients were rather low but consistent with previous studies (Ryff & Keyes, 1995; Van Dierendonck, 2004).

Responses are totalled for each of the six categories. For each category, a high score indicates that the respondent has a mastery in that area in his or her life. Conversely, a low score shows that the respondent struggles to feel comfortable with that particular construct.

Regulatory Emotional Self-Efficacy Scale (RESE; Caprara et. al., 2008; Italian version: Caprara & Gerbino, 2001;Appendix 5) measures individuals' perceived abilities in regulating their emotions with 16 items on Likert scales ranging from 1 "not well at all" to 5 "very well". Alpha coefficients were .84 at T1 and .87 at T4. In particular, 4 items assess self-efficacy beliefs in expressing positive emotions (e.g. "How well can you express joy when good things happen to you?"; T1 α = .87, T4 α = .88), and 12 items evaluate the ability to manage negative emotions (e.g. "How well can you avoid flying off the handle when you get angry?"; T1 α = .84, T4 α = .88). Whereas self-efficacy in regulating negative emotions refers to abilities in containing emotions, self-efficacy in expressing positive emotions refers to abilities in expressing emotions freely. Individuals can significantly differ in the manifestation of the two components. For example, whereas some people might be relatively skilled at containing negative emotions but unskilled at expressing positive ones, others may feel incapable of handling negative emotions but more capable in expressing properly the positive ones.

Time-Budget and Quality of Experience

Experience Sampling Method (ESM; Csikszentmihalyi, et al., 1977; Appendix 6) a procedure providing information on contextual and experiential aspects of daily life through real-time repeated self-reports completed during the unfolding of daily events and situations. For 1 week, each participant receives an electronic agenda and a booklet of experience sampling forms (ESFs). Agendas are programmed to send random acoustic signals 8 times a day from 8.00 am to 10.00 pm. When beeped, participants are asked to fill in a form, containing a standard set of open-ended questions and Likert-type 0–12 scales. The open-ended questions investigate activities, locations, and social context: for example, when beeped, ''what were you doing?''. The quality of experience

perceived at signal receipt was assessed through Likert-type scales ranging from 0 “not at all” to 12 “to the maximum”. These scales measure the levels of affective (e.g. happy), cognitive (e.g. concentrated), and motivational variables (e.g. free), as well as the level of perceived challenges and skills.

The validity and reliability of the ESM method and assessment have been described in Hektner et al. (2007). At the beginning of the sampling week, participants are briefed about the use of ESM. They are invited to fill in a trial ESF which is then discarded from analysis.

3.3.2 Procedures

The research was approved by the local hospital’s ethics committee. Participants were invited to take part in the study and recruited after the morphologic sonography that pregnant women routinely undergo at the 20th-22nd week of pregnancy. The study was presented as an investigation on women's well-being during pregnancy and puerperium. In case of acceptance, they signed an informed consent form, in line with the ethical principles of scientific research and national legislation on privacy.

Participants were followed for one year at four assessments time points:

4. between the 20th and 22nd week of pregnancy (T1),
5. between the 34th and 37th week of pregnancy (T2),
6. 40 days after delivery (T3),
7. 6 months after delivery (T4).

The mid pregnancy phase (T1) was identified as the starting point of the study in order to avoid risks for spontaneous miscarriage (most frequent in the first trimester), to exclude major fetal pathologies (usually detected through the routine morphologic ultrasound sonography) and based on the higher prevalence of antenatal depression (AND) during the second trimester of pregnancy (12.8%; Bennet, et al., 2004). In order to have a comprehensive view on well-being and ill-being during pregnancy, we decided to set the second assessment towards the end of pregnancy (T2) since

recent studies have estimated the prevalence of depression during pregnancy to be between 10% and 30%, which is higher than that in the postpartum period (Gaynes, et al., 2005; Perales, et al., 2014; for a complete review see Lancaster, et al., 2010). Moreover, in Italy, as recommended by the WHO, women are usually asked to consult their gynaecologist between 6 and 8 weeks after delivery (World Health Organization, 2006) for a routine screening. Since the screening and identification of depression during the postpartum period offers health professionals a unique opportunity to impact family health and functioning, it should be done at the earliest point possible (Perfetti, et al., 2004). We therefore decided to set our third assessment point at 40 days postpartum. The last postpartum assessment was conducted in the period associated with the highest incidence of PPD (4-6 months after childbirth, Bennet et. al., 2004), during which women are most likely to experience high levels of stress and low or irritable mood. These feelings can be at least partially related to the interruption of exclusive breastfeeding and the end of the maternity leave. Pregnant women in Italy are allowed to leave work between 8 and 4 weeks before the expected birth date and are entitled to a postnatal maternity leave of 12 weeks (if they left work at the end of the 7th month of pregnancy) or16 weeks (if they stopped working at the end of the 8th month of pregnancy).

During the first meeting, we collected information about the clinical condition of each woman, in order to identify exclusion and inclusion criteria. The selected participants reported socio-demographic information, and filled-out a set of questionnaires measuring depressive symptoms and psychopathological condition (ill-being), as well as well-being in its hedonic and eudaimonic dimensions. They were also administrated ESM (Hektner, et al., 2007). In line with the standard ESM procedure, during the briefing session, the electronic device and booklet of questionnaires were provided to each participant, together with detailed instructions for filling-out of questionnaires. Participants were asked to fill out a sample form: Their doubts were addressed and contact references were given in order to allow patients to ask further questions and to inform researchers about technical or personal problems during the sampling week. Moreover, participants took part in the study for one week at each time point. After the sampling week, the participants

handed in their ESM agendas and booklets and were debriefed. At the end of the study (T4) we carried out a final debriefing session asking women to raise questions or doubts they envisaged in the overall ESM procedure.

3.4 Data Handling and Analysis

3.4.1. Ill-being and well-being indicators

Depression scores as measured with EPDS were summed together for each time point. The total EPDS score ranges between 0 and 30. As suggested in recent studies (Giardinelli, et al., 2011; Chaudron & Nirodi, 2010), we adopted a *cut-off* point of 10 in order to grant high sensitivity in the identification of both minor and major depression. Scores above the cut-off of 10 indicate presence of depressive symptomatology, whereas scores below the cut-off indicate absence of depressive symptoms. Regarding SCL-90, we decided to use the Global Severity Index (GSI) which is the single best indicator of the current level or depth of an individual's disorder. It combines information concerning the number of symptoms reported with the intensity of perceived distress. It is obtained by adding the scores of all the items and dividing by 90.

Aggregated scores for the six dimensions of PWB, expression of positive emotions and management of negative emotions were calculated for each participant by averaging corresponding items at T1 and T4 separately. Regarding satisfaction with life (SWL), we calculated both the mean score of the 5 items (SWL Mean) and mean sum of all item (SWL Sum). This last index was calculated in order to compare women's satisfaction with life scores with Diener's reference values as reported in section 3.3.1.

Descriptive statistics - means and standard deviations - were calculated for all the quantitative variables at T1, T2, T3 and T4. Paired *t*-test analyses were performed to compare scores between T1 and T4. Pearson correlations of depression with eudaimonic and hedonic well-being measures were run in order to test the assumption of moderate or negative association between mental health and mental illness.

3.4.2. Experience Sampling Data

In the preliminary phase of data cleaning, forms that were completed more than 20 minutes after signal receipt were discarded from analysis in order to avoid distortions due to retrospective recall (Hektner et al., 2007; Larson & Delespaul 1992; Napa Scollon et al., 2003). In ESM questionnaires, it is possible to ascertain the time elapsed between signal receipt and form filling-out, because participants are asked to indicate the time when they were beeped and the time they started to fill out the sheet. The final data set included 2504 valid questionnaires.

The answers to open-ended questions – ongoing activity, location and social context – were assigned numeric codes using extant manuals and were subsequently grouped into broad content categories according to functional criteria (Csikszentmihalyi & Larson, 1984; Hektner et al., 2007).

Regarding activities, in particular seven categories were created: 1) Productive tasks: comprising work related activities (e.g. work meetings, checking e-mails, working on the laptop); 2) Free-time: including reading, media (cinema, radio, stereo), TV, social commitment and volunteering; 3) Interactions: comprising interactions in general (e.g. holding, washing, dressing own child), talking in general (e.g. conversing, laughing), talking about school and talking about something else (e.g. recent events, weather conditions, daily planning); 4) Transport (e.g. driving the car); 5) Maintenance: comprising personal hygiene (e.g. eating, drinking) and taking care or oneself (e.g. resting, relaxing); 6) Chores (e.g. cooking, iring, washing dishes); 7) Miscellaneous (e.g. waiting for a phone call, opening presents).

With regard to locations, seven categories were created: 1) Work (e.g. working place); 2) Home (e.g. living room, kitchen, bathroom); 3) Somebody else's house (e.g. house of parents, friends, siblings); 4) Public places: including outdoors, public places and places where participants practised sports (e.g. gym, swimming pool); 5) Health Care Centers (e.g. hospitals, doctor's office); 6) Means of transport (e.g. bicycle, train); 7) Miscellaneous (e.g. travelling, camping, sea side, under a tree).

Finally, regarding social contexts six categories were created: 1) Family of origin (e.g. mother, father, parents and other relatives); 2) Family and other people (e.g. partner and children, partner

and friends, children and other known adults, nuclear family and other relatives); 3) Friends (e.g. best friend); 4) Work (e.g. colleagues, pupils, supervisor); 5) Alone; 6) Other company (e.g. other know adults, strangers, waiters). Since literature showed the importance of the family dimension for women during pregnancy and postpartum, we further created 3 specific "family context" categories. Specifically: 1) nuclear family only (mother, father and child/children); 2) woman alone with the child or children; and 3) woman alone with the partner.

Statistical analysis of qualitative data were presented as percentage distribution.

With regard to Likert-type scaled questions, since the ESM procedure is based on repeated self-reports, the values of each scaled variable were standardised (z-scores) before analysis, with mean=0 and standard deviation=1. Z-scores were created by subtracting each participant's mean value of the variable from the self-report's raw score, and then dividing the result by the participant's standard deviation. For each participant, after standardisation, each variable will have as many z-scores as self-reports (except for possible missing values).

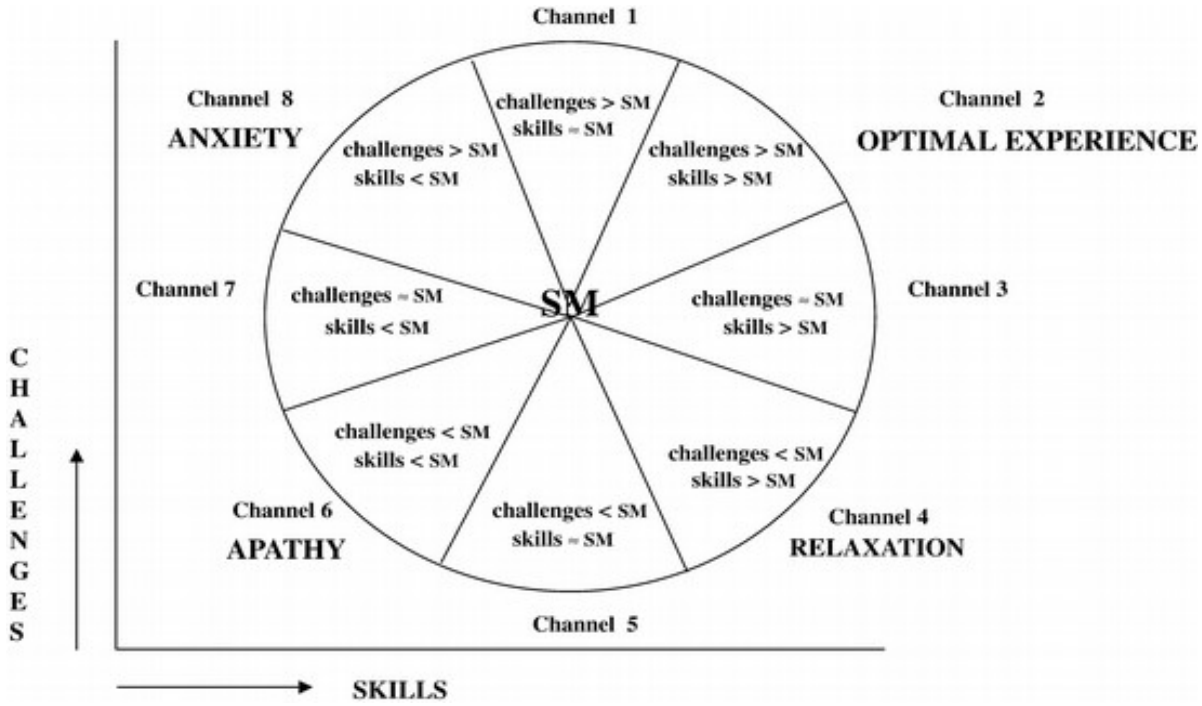
Given the sample size (N=22) and our research aims, we subsequently adopted a *beep-level* analysis in the treatment of scaled variables (Hektner et al., 2007; Larson & Delespaul, 1992). In *beep-level* analysis, the unit of data organisation is the self-report filled out at each signal reception. Given the big number of serial self-reports each participant fills out, the most important criticism of beep-level analysis regards the possible interrelationship between adjacent reports. However, in certain circumstances, violating the assumption of independence is almost unavoidable and may represent the best possible presentation of the data (Larson & Delespaul, 1992). Moreover, the random way in which self-reports are gathered weakens the dependence among serial data.

For the purpose of this study, and in line with international ESM literature (Csikszentmihalyi et al., 1993; Csikszentmihalyi & Schneider, 2000; Delle Fave & Massimini, 2005) data analysis on the investigation of the daily experience focused on some major experiential variables describing affective, cognitive and motivational dimensions. Specifically we focused on: challenges, skills, concentration, control of the situation, happy, strong, active, involved, obliged, relaxed, wish to do

the activity, at stake, and perceived long-term goals. *T*-tests were performed to assess whether z-scores significantly differed from average within the total sample.

Moreover, the relationship between levels of perceived challenges and skills - on the one side - and the quality of experience - on the other side – was explored through the Experience Fluctuation Model (EFM, Massimini et al., 1987. Figure 1).

Figure 1: The Experience Fluctuation Model (EFM)



In EFM the Cartesian plane is partitioned into eight sectors of 45° – called channels – representing specific ranges of challenges/skills ratios. The values of the two variables are standardised for each participant; consequently the mean of challenges and skills for each participant and the mean of participants' means amount to zero and correspond to the centre of the model. Four main channels are identified in the model, each corresponding to a specific experiential state: optimal experience (channel 2), relaxation (channel 4), apathy (channel 6), and anxiety (channel 8). The remaining channels are associated with intermediate experiential states: arousal (channel 1), control (channel 3), boredom (channel 5), and worry (channel 7).

Optimal experience showed globally positive features at the cognitive, affective and motivational levels; on the contrary, apathy was identified as the most negative experience in daily life, a condition of psychic disruption and disengagement (Delle Fave & Massimini, 2005). Relaxation was characterised by positive mood and confidence but low engagement, and anxiety by high concentration and involvement, but low control of the situation and negative affect. The four remaining channels, identifying intermediate experiential states, were labeled "transition channels" (Delle Fave, 1996). In particular, 'arousal', the experience associated with channel 1, is characterized by high challenges and average skills. The experience associated with channel 3, labeled as 'control', is characterised by average challenges and high skills. In channel 5, 'boredom', is a condition characterised by low challenges and average skills. Finally the experience associated with channel 7, 'worry', is characterised by average challenges and low skills (Csikszentmihalyi, 1997; Delle Fave & Bassi, 2000).

The EFM allows researchers to trace how experience qualitatively fluctuates across the channels and to identify possible individual fluctuation patterns; it can also allow researchers to analyse subjective experience from a quantitative perspective, highlighting how its characteristics can vary over time according to the reduction or increase of the levels of challenges and skills within a given channel.

3.5 Results

3.5.1. Well-being and Ill-being Indicators

Table 3 illustrates data on well-being indicators at 20 weeks gestation (T1) and at 6 months postpartum (T4). The scores for Satisfaction with Life (SWL) and the six dimensions of Psychological Well-Being (PWB) were in line with those obtained in national samples of women in the same age range (Delle Fave, et al., 2011; Goldwurm et. al., 2004; Ruini et. al., 2003). Results showed that women were overall "satisfied" with their lives (range between 26-30) and showed good psychological functioning in all six dimensions of PWB at both time points. Moreover,

participants reported good levels of Emotional Regulation, (ER) measured with Regulatory Emotional Self-Efficacy Scale, both in expressing positive emotions and managing negative ones. Compared to national samples (Caprara, et al., 2003), participants at T1 reported similar scores in expressing positive emotions, and a trend towards better management of negative emotions. At T4, they showed a slightly worse ability of expressing positive emotions and a better ability of managing negative ones.

Table 3. Values of well-being indicators at 20ws gestation (T1) and 6 months after birth (T4).

Variables	**T1 (*N* = 22)**		**T4 (*N* = 21)**	
	M	*SD*	*M*	*SD*
SWL (Mean)	5.5	0.88	5.24	1.13
SWL (Sum)	27.32	4.42	26.19	5.65
PWB	4.84	0.42	4.74	0.5
Autonomy	4.81	0.75	4.75	0.94
Environmental mastery	4.8	0.53	4.66	0.63
Personal growth	4.9	0.55	4.74	0.66
Positive relations	4.82	0.59	4.89	0.6
Purpose in life	4.8	0.59	4.71	0.6
Self-acceptance	4.91	0.66	4.71	0.7
ER	3.43	0.52	3.38	0.58
Expression of positive emotions	4.04	0.7	3.89	0.74
Management of negative emotions	3.23	0.6	3.21	0.69

Note: N= Number of participants; Mean= mean value; Sum= sum of all values

Concerning ill-being indicators, mean values of depression scores (EPDS) and Symptom Checklist-90-R (SCL-90) Global Severity Index (GSI) were well below the cut-off point respectively of 10 and 1, indicating good compensation and absence of psychopathology both at 20 weeks gestation and 6 months after childbirth (Table 4). Only 27.27% of women reported the

presence of depressive symptoms at both time points (EPDS mean scores ranging between 11 and 17).

Table 4. Mean values and Standard Deviations of ill-being indicators at 20ws gestation (T1) and 6 months after birth (T4).

Variables	**T1 (N=22)**		**T4 (N=22)**	
	M	*SD*	*M*	*SD*
Depression	6.55	5.02	6.23	4.39
GSI	0.48	0.35	0.51	0.32

Note: N= Number of participants

Depression scores were substantially below the cut-off value of 10 also at T2 and T3 (Table 5).

Table 5. Mean values and Standard Deviations of EPDS scores at T2 and T3.

Variables	**T2 (N=22)**		**T3 (N=22)**	
	M	*SD*	*M*	*SD*
Depression	4.68	3.37	5.32	3.9

Note: N= Number of participants

Comparisons between T1 and T4 highlighted no statistically significant differences for all well-being and ill-being indicators. In addition, no significant differences were detected in depression scores at all time points, as calculated with ANOVA with repeated measures. As a general trend, however, ill-being values remained stable or slightly increased, while well-being indicators slightly decreased.

In line with the study hypothesis, no significant correlations were detected between SWL, and

depression or GSI scores both at T1 and T4 (Table 6). At T1 depression scores significantly and negatively correlated with PWB and ER, particularly with the expression of positive emotions. Women reporting higher levels of depression perceived lower psychological well-being and lower self-efficacy in expressing positive emotions.

Table 6. Pearson Correlations between well-being and ill-being indicators at T1 and T4.

	T1 N=22		**T4 N=21**	
	Depression	**Global Severity Index (GSI)**	**Depression**	**Global Severity Index (GSI)**
SWL	0.07	-0.5	-0.31	-0.4
PWB	-0.57**	-0.63**	-0.52*	-0.54*
Autonomy	-0.38	-0.52*	-0.41	-0.31
Environmental mastery	-0.45	-0.59**	-0.79**	-0.66**
Personal growth	0.01	-0.38	-0.17	-0.25
Positive relations	-0.38	-0.25	-0.23	-0.43
Purpose in life	-0.3	-0.29	-0.06	-0.14
Self-acceptance	-0.38	-0.56**	-0.60**	-0.57**
ER	-0.51*	-0.45*	-0.69**	-0.72**
Expression of positive emotions	-0.56**	-0.56**	-0.21	-0.31
Management of negative emotions	-0.37	-0.3	-0.71**	-0.7**

*Note: N= number of participants; **P <.01; *p <.05*

Moreover, at T4 depression scores were significantly and negatively correlated with PWB, particularly with environmental mastery and self-acceptance; and with management of negative emotions. Women reporting higher levels of depression perceived lower psychological well-being, lower environmental mastery, and lower self-acceptance. They also showed lower self-efficacy in managing negative emotions.

Concerning GSI, significantly negative correlations were detected with PWB and ER at both time points. Specifically, at T1 GSI negatively correlated with autonomy, environmental mastery, self-acceptance, and with the ability of expressing positive emotions. At T4, GSI negatively correlated with environmental mastery, self-acceptance, and with the ability of managing negative emotions. Women reporting higher levels of psychopathologic symptoms perceived lower overall psychological well-being, environmental mastery, self-acceptance, and ability in emotional regulation at both time points. At 20 weeks gestation they specifically reported lower autonomy and lower self-efficacy in expressing positive emotions, while, interestingly, at 6 weeks postpartum they showed lower ability in managing negative emotions.

Table 7 reports the correlations at T1 and T4 between the six dimensions of PWB, SWL and ER in both its aspects to express positive emotions and managing negative ones. At both time points SWL significantly and positively correlated only with the two dimensions of psychological well-being (PWB), of purpose in life and self-acceptance.

Moreover, at T1 the ability to express positive emotions positively and significantly correlated with autonomy, with environmental mastery, with positive relations and with self-acceptance, and at T4 with personal growth, positive relations and self-acceptance. As concerns management of negative emotions, it positively correlated with environmental mastery, positive relations, and self-acceptance exclusively at T4.

Table 7. Pearson's correlations between well-being indicators at T1 (above the diagonal) and T4 (below the diagonal)

	SWL	*Autonomy*	*Environmental mastery*	*Personal Growth*	*Positive Relations*	*Purpose in life*	*Self-Acceptance*	*Expression of positive emotions*	*Management of negative emotions*
SWL	-	-0.24	0.01	0.13	0.38	0.54**	0.48*	0.05	-0.08
Autonomy	-0.04	-	0.42	0.01	0.09	0.23	0.46*	0.55**	0.3
Environmental mastery	0.36	0.4	-	0.44*	0.38	0.2	0.62**	0.62**	0.27
Personal growth	0.27	0.27	0.47*	-	0.54**	0.37	0.36	0.41	0.16
Positive relations	0.25	0.15	0.36	0.71**	-	0.55**	0.4	0.63**	0.05
Purpose in life	0.48*	0.17	0.4	0.56**	0.65**	-	0.64**	0.38	0.04
Self-acceptance	0.67**	0.27	0.74**	0.56**	0.6**	0.64**	-	0.55**	0.39
Expression of positive emotions	0.34	0.31	0.39	0.57**	0.47*	0.58**	0.49*	-	0.2
Management of negative emotions	0.2	0.26	0.61**	0.36	0.56**	0.11	0.51*	0.2	-

Note: number of participants at T1=22; number of participants at T4=21

3.5.2 ESM Data: Time-budget

Daily activities. Table 8 shows women's activity distribution during the sampling weeks. When asked "*What was the main thing you were doing*?", participants prominently reported interactions at all time points, followed by maintenance at T1, and by chores at T2, at T3 and T4. In smaller percentages during the different time points, women were devoted to productive tasks, free-time activities and transport.

At T1, 46.33% of interactions were devoted to one's own child or children, with activities such as holding, washing, dressing, feeding, playing, watching, cuddling, listening to, scolding, and helping. In addition, 38.53% of the answers referred to talking in general for example with friends or relatives – conversing, laughing, chatting, speaking on the phone. The interactions dedicated to one's own child or children prevailed with respect to talking in general also in the remaining three time points (interactions with child/children: 45.53%, 71.72%, 73.99%; talking in general: 25.45%, 11.47%, 13.45%, respectively at T2, T3 and T4).

Table 8. Percentage distribution of women's daily activities at all time points.

Activities	**T1**	**T2**	**T3**	**T4**
		%		
Productive tasks	15.62	2.57	1.28	-
Free-Time	12.27	15	12.8	10.56
Interactions	30.4	32	44.61	41.3
Transport	4.32	3.86	1.28	3.7
Maintenance	16.6	17.14	13.35	15.93
Chores	15.06	23.14	22.67	19.63
Miscellaneous	5.72	6.29	4.02	3.7
TOT	**717**	**700**	**547**	**540**

Note: TOT= total number of answers

Maintenance activities at T1 mostly concerned personal hygiene, eating, drinking, falling asleep, waking up, dressing or undressing, getting ready to go out and similar actions (78.99%); while 17.64% of answers concerned relaxing or taking care of oneself (e.g. resting, relaxing, going to the hairdresser or to the beautician, to get a massage). Only 3.36% concerned pregnancy-related activities, like caressing one's belly or ultrasound sonography.

Chores at all time points mostly concerned housework, like cleaning, cooking, ironing, or tiding up the house. Free-time activities included personal hobbies, internet use, reading, media (e.g. cinema, radio, stereo), TV, social commitment and volunteering. Participants productive activities mostly comprised work or studying at home.

Regarding transport and miscellaneous, women's answers referred for example to walking, driving the car, to moving objects or to sticking a note down.

Locations. Table 9 illustrates the locations where participants spent their daily life. When asked "*Where were you* ?", women prominently reported being at home, followed by being at work at T1, and in somebody else's house at T2, T3 and T4. The latter category included being at the house of relatives, friends, parents or siblings.

Only in a small percentage of the answers did women report being in public places, at each time point. The public places category mainly included being outdoors or in a specific location practising sports.

The Health Care Centers category was reported in a small percentage of the answers at each time point, reflecting the routine screenings women undergo during pregnancy.

Answers referring to means of transport and miscellaneous included for example being on a taxi or on a bus; and being on a short trip or in a field.

Table 9. Percentage distribution of locations at all four time points.

Locations	**T1**	**T2**	**T3**	**T4**
		%		
Work	20.92	1.86	1.46	4.26
Home	57.46	72.14	79.16	78.7
Somebody else's house	6.69	12.43	6.03	8.33
Public Places	6.83	5.57	6.95	3.52
Health Care Centers	1.81	2.14	0.37	0.56
Means of transport	6.28	5.14	2.93	4.63
Miscellaneous	-	0.71	3.11	-
TOT	**717**	**700**	**547**	**540**

Note: TOT= total number of answers

Social contexts. Table 10 shows the distribution of social contexts reported by women during the sampling weeks. When asked "*Who were you with?*", participants prominently reported being with family and other people or alone at all time points. The family and other people category included various combinations as, partner and friends or others, children, and children, partner and relatives. In a small percentage of the ESM forms participants reported being with their family of origin or with friends at all time points.

According to Italian laws regulating maternity, women are entitled to paid leave for the last two months of pregnancy and the first three months after delivery. As a consequence, mothers reported a strong decrease in the percentage of work activities after the 34th week gestation (T2) and up to 6 months post-partum (T4).

Table 10. Percentage distribution of social contexts at all time points.

Social Contexts	**T1**	**T2**	**T3**	**T4**
	%	*%*	*%*	*%*
Family of origin	5.45	9.59	2.02	2.41
Family and other people	56.28	59.8	86.24	78.66
Friends	1.12	0.72	0.37	0.37
Work	11.73	0.43	-	2.6
Alone	24.16	28.18	10.83	15.58
Other company	1.26	1.29	0.55	0.37
TOT	**716**	**699**	**545**	**539**

Note: TOT= total number of answers

As introduced in paragraph 3.4.2, in order to describe women's time-budget in specific family contexts we further analysed women's answer distribution while being with nuclear family only, child or children only, and partner only (Table 11).

Table 11. Percentage distribution in family contexts at all time points.

Family context	**T1**	**T2**	**T3**	**T4**
		%		
Nuclear Family only	43.41	43.67	32.04	27.38
Child/children only	47.91	44.3	64.08	64.58
Partner only	8.68	12.02	3.87	8.03
TOT	**311**	**316**	**387**	**336**

Note: TOT= total number of answers

Data showed that at all time points women mostly reported being alone with child or children, and subsequently being with the nuclear family. Only in small percentages of answers at each time point respectively, did women report being alone with the partner.

We further analysed women's activities carried out in the different family contexts (Table 12). When they were with their nuclear family and when they were alone with the child/children, they mostly interacted at all 4 time points. When they were alone with the partner, they mostly interacted at T1, T2 and T4, while they mostly shared free-time at T3.

Table 12. Percentage distribution of activities in family context.

Categories	*Nuclear Family only*				*Child/children only*				*Partner only*			
	%				**%**				**%**			
	T1	**T2**	**T3**	**T4**	**T1**	**T2**	**T3**	**T4**	**T1**	**T2**	**T3**	**T4**
Productive	0.74	0.72	-	-	1.34	0.71	2.02	0.46	-	-	-	3.7
Free-Time	14.81	14.49	8.06	7.61	17.45	17.86	10.89	11.98	18.52	23.68	33.33	14.81
Interactions	30.37	30.43	42.74	33.7	41.61	44.29	47.98	49.31	22.22	31.58	26.67	33.33
Transport	1.48	3.62	0.81	2.17	4.03	2.86	2.42	1.84	3.7	-	-	7.41
Maintenance	25.93	18.12	18.55	22.83	17.45	12.14	9.68	13.82	14.81	13.16	20	11.11
Chores	20	26.81	25	29.35	14.09	15.71	25	18.89	3.33	23.68	20	29.63
Miscellaneous	6.67	5.8	4.84	4.35	4.03	6.43	2.02	3.69	7.41	7.89	-	-
TOT	**135**	**138**	**124**	**92**	**149**	**92**	**248**	**217**	**27**	**38**	**15**	**27**

Note: TOT= total number of answers

3.5.3. ESM Data: Quality of experience during daily activities

In order to assess the quality of experience reported by mothers in their daily life during pregnancy and puerperium, we subsequently focused on the average experience associated with the most frequently reported daily activities taking into account core cognitive, emotional and

motivational variables: challenges, skills, concentration, in control, happy, strong, active, involved, obliged, relaxed, wish to do the activity, at stake and long term goals.

Table 13 shows the average experience during productive tasks at T1 and T4. T2 and T3 are not reported since most women were on maternity leave and the total number of observations (respectively N=18 at T2 and N=7 at T3) were too few to be subject to statistical analysis.

During productive tasks, at T1 participants perceived significantly above average values of challenges (t=2.76, $p < 0.01$), concentration (t=4.57, $p < 0.001$), in control (t=2.70, $p < 0.01$), involved (t=2.98, $p < 0.01$) and at stake (t=2.01, $p < 0.05$). They also perceived significantly low levels of happy (t= -2.64, $p < 0.01$) and relaxed (t= -2.26, $p < 0.05$), as well as significantly high values of the variables active (*t=4.50, $p < 0.001$*), obliged (t=3.79, *$p < 0.05$, $p < 0.001$*), and strong (*t=2.76, $p < 0.01$*).

Table 13. Average experience during productive tasks at T1 and T4.

	Productive tasks			
	T1		**T4**	
	M	**SD**	**M**	**SD**
Challenges	0.27**	1.04	0.55**	0.88
Skills	0.19	1.10	-0.05	0.98
Concentration	0.38***	0.89	0.58**	0.85
In control	0.26**	1.02	-0.05	0.92
Happy	-0.22**	0.89	-0.32	0.88
Strong	0.23**	0.90	0.29*	0.67
Active	0.36***	0.85	0.41*	0.83
Involved	0.26**	0.93	0.32	0.88
Obliged	0.40***	1.12	0.52**	0.8
Relaxed	-0.22*	1.04	-0.12	0.74
Wish to do the activity	-0.18	1.03	-0.13	0.93
Stake	0.19*	1.02	0.24	0.79
Goals	0.09	0.95	0.14	0.91
N. Observations	**112**		**28**	

*Note: *=p<.05; **=p<.01; ***=p<.001*

At T4 they perceived significantly above average values of challenges (t=3.31, $p < 0.01$), concentration (t=3.62, $p < 0.01$), active (t=2.63, $p < 0.05$), strong (t=2.25, $p < 0.05$), and obliged (t=3.43, $p < 0.01$).

Table 14 shows that during free-time activities at T1, participants perceived significantly below average values of strong (t= -4.68, $p < 0.001$), active (t= - 4.20, $p < 0.001$) obliged (t= - 4.19, $p < 0.001$), and at stake (t= -2.82, $p < 0.01$). Whereas above average values of relaxed (t=3.89, $p < 0.001$) and wish to do the activity (t= 3.23, $p < 0.01$) were reported. At T2, they perceived significantly below average values of active (t= -3.43, $p < 0.01$) obliged (t= -3.31, $p < 0.01$), and at stake (t= -2.14, $p < 0.05$). Whereas above average values of relaxed (t=3.18, $p < 0.01$) and wish to do the activity (t= 5.14, $p < 0.001$) were reported.

Table 14. Average experience during free-time activities at all time points.

	Free-Time Activities							
	T1		**T2**		**T3**		**T4**	
	M	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**
Challenges	-0.04	0.90	-0.05	1.08	-0.01	1.01	0.07	1.09
Skills	-0.14	0.94	-0.06	0.99	-0.07	0.92	-0.23	1
Concentration	0.13	0.99	-0.06	1.04	0.12	1.06	0.06	0.94
In control	-0.09	0.89	0.03	0.95	0.25*	1.00	0.05	0.77
Happy	0.03	0.81	0.14	0.99	-0.04	1.01	0.14	0.86
Strong	-0.40***	0.79	-0.1	1.16	-0.04	1.10	-0.17	0.88
Active	-0.46***	1.02	-0.41**	1.21	-0.27*	0.99	-0.27*	0.91
Involved	-0.12	0.86	-0.25	1.32	-0.34**	0.93	-0.03	0.89
Obliged	-0.30***	0.67	-0.25**	0.78	-0.44***	0.53	-0.22	0.9
Relaxed	0.32***	0.78	0.36**	1.16	0.26*	0.88	0.36*	1.05
Wish to do the activity	0.26**	0.76	0.38***	0.75	0.33***	0.64	0.26*	0.77
Stake	-0.27**	0.89	-0.19*	0.89	-0.19*	0.79	-0.13	0.94
Goals	-0.20	0.97	-0.1	0.81	-0.07	1.03	-0.18	0.81
N. Observations	**88**		**105**		**70**		**57**	

Note: *=p<.05; **=p<.01; ***=p<.001

At T3 women perceived significantly below average values of involved (t= -3.06, $p < 0.01$), active (t= -2.24, $p < 0.05$), obliged (t= -6.97, $p < 0.001$), and at stake (t= -2.01, $p < 0.05$); while above average values of control (t=2.09, $p < 0.05$), relaxed (t=2.44, $p < 0.05$) and wish to do the activity (t=4.27, $p < 0.001$) were reported. Finally at T4, they perceived significantly below average values of active (t= -2.23, $p < 0.05$) and above average values of relaxed (t=2.62, $p < 0.05$) and wish to do the activity (t=2.52, $p < 0.05$).

As shown in Table 15, during interactions at T1 women reported significantly above average values of challenges (t=4.11, $p < 0.001$), happy (t=2.17, $p < 0.05$), strong (t=2.60, $p < 0.01$), active (t=2.34, $p < 0.05$), involved (t=2.37, $p < 0.05$), wish to do the activity (t=2.08, $p < 0.05$), at stake (t=3.08, $p < 0.05$), and long term goals (t=3.32, $p < 0.05$).

Table 15. Average experience during interactions activities at all time points.

	Interactions Activities							
	T1		**T2**		**T3**		**T4**	
	M	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**
Challenges	0.27***	0.97	0.23**	1.01	0.22**	0.92	0.23**	1.01
Skills	0.06	0.95	-0.06	0.98	0.04	1.02	-0.02	0.97
Concentration	0.04	0.94	0.1	0.97	0.07	0.96	0.12	0.93
In control	-	1.07	-0.01	1	0.06	1.00	0.13*	0.95
Happy	0.16*	1.07	0.06	1.01	0.14*	0.99	0.19**	0.95
Strong	0.16**	0.91	0.04	1.01	0.05	0.95	0.07	1
Active	0.14*	0.88	0.07	0.87	-0.01	0.98	0.04	0.89
Involved	0.15*	0.90	0.18**	0.82	0.18**	0.94	0.14*	0.94
Obliged	-0.09	0.86	-0.05	0.85	-0.01	0.80	-0.09	0.83
Relaxed	0.05	1.00	-0.05	0.95	0.08	0.94	0.01	0.96
Wish to do the activity	0.13*	0.93	0.11	0.9	0.16**	0.82	0.05	0.93
Stake	0.22**	1.05	0.19**	1.01	0.35***	1.01	0.3***	1.02
Goals	0.23**	0.99	0.15*	0.98			0.28**	1.08
N. Observations	**218**		**224**		**244**		**223**	

*Note: *=p<.05; **=p<.01; ***=p<.001*

At T2 they reported significantly above average values of challenges (t=3.45, $p < 0.01$), involved (t=3.26, $p < 0.01$), at stake (t=2.73, $p < 0.01$), and long term goals (t=2.21, $p < 0.05$). At T3, they reported significantly above average values of challenges (t=3.80, $p < 0.01$), happy (t=2.17, $p < 0.05$), involved (t=3.06, $p < 0.01$), wish to do the activity (t=2.96, $p < 0.01$), and at stake (t=5.40, $p < 0.001$). Finally at T4, they reported significantly above average values of challenges (t=3.43, $p < 0.01$), in control (t=2.12, $p < 0.05$), happy (t=3.05, $p < 0.01$), involved (t=2.23, $p < 0.05$), at stake (t=4.36, $p < 0.001$), and long term goals (t=3.67, $p < 0.01$).

Table 16. Average experience during maintenance activities at all time points.

	Maintenance Activities							
	T1		**T2**		**T3**		**T4**	
	M	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**
Challenges	-0.41***	0.97	-0.27**	0.8	-0.30**	0.88	-0.43***	0.79
Skills	-0.14	1.10	-0.03	0.96	0.00	0.94	-0.12	0.81
Concentration	-0.44***	1.04	-0.28**	1.08	-0.44**	0.97	-0.3**	0.1
In control	-0.10	0.97	-0.09	1.08	-0.52***	0.97	-0.33**	1.09
Happy	0.01	0.99	-0.12	0.94	-0.25*	0.95	-0.3**	0.98
Strong	-0.35**	1.09	-0.19*	0.93	-0.21*	0.88	-0.19	1.07
Active	-0.46***	1.14	-0.33**	1.06	-0.45**	1.03	-0.38**	1.2
Involved	-0.40**	1.18	-0.22*	1.01	-0.48***	0.99	-0.36**	1.05
Obliged	-0.20*	0.81	-0.14	0.87	-0.31**	0.77	0.02	0.9
Relaxed	0.24*	1.06	0.06	0.85	-0.11	1.03	-0.03	1.02
Wish to do the activity	0.28**	0.86	0.21**	0.84	0.29**	0.82	0.26**	0.73
Stake	-0.28**	0.97	-0.17	0.96	-0.23*	0.90	-0.48***	0.88
Goals	-0.22*	1.03	-0.14	0.91	-0.31**	0.80	-0.24**	0.84
N. Observations	**119**		**120**		**73**		**86**	

*Note: *=p<.05; **=p<.01; ***=p<.001*

While performing maintenance activities (Table 16), at T1 women reported significantly below average values of challenges (t= -4.66, $p < 0.001$), concentration (t= -4.59, $p < 0.001$), strong (t= -3.50, $p < 0.01$), active (t= -4.38, $p < 0.001$), involved (t= -3.71, $p < 0.01$), obliged (t= -2.70, $p < 0.05$), at stake (t= -3.11, $p < 0.01$), and goals (t= -2.30, $p < 0.05$), whereas above average values of relaxed (t=2.46, $p < 0.05$) and wish to do the activity (t= 3.50, $p < 0.01$) were reported. At T2, they reported significantly below average values of challenges (t= -3.72, $p < 0.01$), concentration (t= -2.87, $p < 0.01$), strong (t= -2.22, $p < 0.05$), active (t= -3.42, $p < 0.01$), involved (t= -2.44, $p < 0.05$), and above average values of wish to do the activity (t= 2.67, $p < 0.01$). At T3, women reported significantly below average values of challenges (t= -2.89, $p < 0.01$), concentration (t= -3.87, $p < 0.01$), in control (t= -4.62, $p < 0.001$), strong (t= -2.00, $p < 0.05$), active (t= -3.77, $p < 0.01$), involved (t= -4.15, $p < 0.001$), obliged (t= -3.43, $p < 0.01$), at stake (t= -2.16, $p < 0.05$), and goals (t= -3.23, $p < 0.01$). Whereas above average values of wish to do the activity (t= 3.06, $p < 0.01$) were reported. Finally at T4, participants reported significantly below average values of challenges (t= -5.10, $p < 0.001$), concentration (t= -2.89, $p < 0.01$), in control (t= -2.81, $p < 0.01$), happy (t= -2.86, $p < 0.01$), active (t= -2.93, $p < 0.01$), involved (t= -3.17, $p < 0.01$), at stake (t= -5.04, $p < 0.001$), goals (t= -2.68, $p < 0.01$), and above average values of wish to do the activity (t= 3.29, $p < 0.01$).

Finally, while performing chores (Table 17), at T1 women reported significantly below average values of challenges (t= -2.68, $p < 0.01$), happy (t= -2.00, $p < 0.05$), relaxed (t= -3.88, $p < 0.01$), wish to do the activity (t= -5.08, $p < 0.001$), at stake (t= -2.45, $p < 0.05$) and goals (t= -2.43, $p < 0.05$), as well as above average values of obliged (t= 2.15, $p < 0.05$). At T2, they reported significantly below average values of relaxed (t= -2.23, $p < 0.05$), wish to do the activity (t= -4.34, $p < 0.001$), and goals (t= -3.50, $p < 0.01$). Whereas they perceived above average values of active (t= 3.84, $p < 0.01$) and obliged (t= 3.74, $p < 0.01$).

Table 17. Average experience during chores activities at all time points.

	Chores Activities							
	T1		T2		T3		T4	
	M	SD	M	SD	M	SD	M	SD
Challenges	-0.21**	0.83	-0.1	0.84	-0.3**	0.95	-0.22*	0.88
Skills	-0.05	0.91	0.08	1	-0.05	0.97	0.18	0.96
Concentration	-0.12	0.86	-0.03	0.86	-0.03	0.82	-0.18	0.89
In control	-0.13	0.85	0.03	0.97	-0.03	0.79	0	1.05
Happy	-0.19*	0.99	-0.07	0.95	-0.12	0.91	-0.11	1.01
Strong	0.05	1.08	0.02	0.92	-0.05	1.06	-0.06	0.99
Active	0.12	0.93	0.25**	0.83	0.36***	0.84	0.2*	0.93
Involved	-	0.97	-0.02	0.94	0.02	1.01	-0.09	0.95
Obliged	0.19*	0.92	0.25**	0.86	0.45***	1.23	0.16	0.92
Relaxed	-0.35**	0.92	-0.17*	0.96	-0.28**	1.02	-0.16	0.92
Wish to do the activity	-0.54***	1.1	-0.39***	1.14	-0.65***	1.21	-0.39**	1.16
Stake	-0.18*	0.75	-0.12	0.85	-0.39***	0.83	-0.26**	0.8
Goals	-0.19*	0.79	-0.17**	0.6	-0.38***	0.68	-0.29***	0.72
N. Observations	**108**		**162**		**124**		**106**	

*Note: *=p<.05; **=p<.01; ***=p<.001*

At T3, women reported significantly below average values of challenges (t= -3.55, $p < 0.01$), relaxed (t= -3.06, $p < 0.01$), wish to do the activity (t= -5.92, $p < 0.001$), at stake (t= -5.15, $p < 0.001$) and goals (t= -6.08, $p < 0.001$), along with above average values of active (t= 4.71, $p < 0.001$) and obliged (t= 4.04, $p < 0.001$). At T4, they reported significantly below average values of challenges (t= -2.61, $p < 0.001$), wish to do the activity (t= -3.44, $p < 0.01$), at stake (t= -3.38, $p < 0.01$), goals (t= -4.19, $p < 0.001$), and they perceived above average values of active (t= 2.24, $p < 0.05$).

3.5.4. ESM Data: Quality of experience during interactions in family contexts

For the purpose of the present study, we subsequently focused on the quality of experience associated with the various family contexts.

Data showed that women's quality of experience varied depending on the type of activity they were performing in specific family contexts, rather than exclusively on the social context they were with. Therefore, we chose to describe women's quality of experience during interactions in family context since interactions were reported as the most frequent activity participants were engaged into at all time points. In addition, the very small amount of time women spent with their partners (as percentage distribution shown in Table 11), we were not able to analyse the associated quality of experience during interactions.

During interactions with the nuclear family (Table 18), women at T1 reported significantly above average values of involved (t= 2.50, $p < 0.05$), and below average values of obliged (t= -2.07, $p < 0.05$).

At T2, they reported significantly above average values of challenges (t= 2.86, $p < 0.01$), concentration (t= 2.14, $p < 0.05$) involved (t= 2.90, $p < 0.01$), at stake (t= 2.66, $p < 0.05$), and goals (t= 2.83, $p < 0.01$); while below average values of obliged (t= -3.28, $p < 0.01$). At T3, women reported significantly above average values of long term goals (t= 3.45, $p < 0.01$). At T4 they reported below average values of obliged (t= -2.43, $p < 0.05$).

Table 18. Average experience during interactions with nuclear family at all time points.

	Interactions with Nuclear Family							
	T1		T2		T3		T4	
	M	SD	M	SD	M	SD	M	SD
Challenges	0.18	0.89	0.42**	0.95	0.24	0.86	0.15	0.99
Skills	-0.06	0.96	-0.10	1.10	0.11	1.03	0.12	0.84
Concentration	0.06	1.08	0.21*	0.65	-0.11	0.75	-0.08	0.70
In control	0.10	1.05	-0.01	0.95	-0.03	0.78	0.09	0.88
Happy	0.27	1.14	0.22	1.20	0.19	0.90	0.15	0.80
Strong	0.05	0.93	-0.16	1.24	0.21	0.86	-0.12	0.96
Active	0.08	0.93	-0.05	0.85	-0.01	0.99	0.06	0.90
Involved	0.31*	0.79	0.29**	0.64	0.14	0.96	-0.03	0.99
Obliged	-0.24*	0.74	-0.35**	0.68	0.03	0.84	-0.23*	0.52
Relaxed	0.03	1.14	0.03	0.79	0.12	1.00	0.11	0.84
Wish to do the activity	-0.11	1.14	0.12	0.97	0.06	0.96	-0.01	0.83
Stake	0.30	1.15	0.49*	1.19	0.21	0.91	0.02	1.10
Goals	-	1.12	0.39**	0.88	0.48**	1.01	0.08	1.15
N. Observations	**41**		**42**		**53**		**31**	

*Note: *=p<.05; **=p<.01; ***=p<.001*

During interactions with child or children (Table 19), women at T1 reported significantly above average values of long term goals (t= 3.28, p < 0.01). At T2, they reported significantly above average values of challenges (t= 2.56, p < 0.05) and wish to do the activity (t= 2.92, p < 0.01). At T3 they reported significantly above average values of challenges (t= 2.28, p < 0.05), happy (t= 2.40, p < 0.05), wish to do the activity (t= 2.96, p < 0.01), at stake (t= 5.06, p < 0.001), and goals (t= 3.65, p < 0.001). At T4 participants reported significantly above average values of challenges (t= 2.10, p < 0.05), in control (t= 2.11, p < 0.05), happy (t= 3.28, p < 0.01), at stake (t= 4.46, p < 0.001), and goals (t= 3.68, p < 0.001).

Table 19. Average experience during interactions with child or children at all time points.

	Interactions with child or children							
	T1		T2		T3		T4	
	M	SD	M	SD	M	SD	M	SD
Challenges	0.09	0.95	0.33*	1.00	0.21*	1.00	0.22*	1.09
Skills	0.05	0.92	0.04	0.85	0.08	0.96	-0.08	1.06
Concentration	-0.05	0.87	-0.06	1.34	0.10	1.07	0.13	1.04
In control	-0.04	1.03	-0.06	1.16	0.08	1.12	0.20*	0.96
Happy	0.02	1.11	0.16	1.07	0.23*	1.04	0.32**	1.02
Strong	0.09	0.98	0.08	0.93	0.03	0.98	0.08	1.04
Active	0.09	0.82	0.04	1.01	-0.14	0.99	-0.07	0.93
Involved	0.00	0.94	0.21	0.91	0.17	0.99	0.18	0.95
Obliged	0.10	0.95	-0.04	0.84	0.04	0.82	0.02	0.95
Relaxed	-0.14	1.03	-0.01	1.08	0.15	0.94	0.00	0.98
Wish to do the activity	0.01	0.98	0.28**	0.75	0.20**	0.73	0.05	0.95
Stake	0.23	1.04	0.33	0.83	0.52***	1.12	0.45***	1.03
Goals	0.37**	0.88	0.22	0.74	0.38***	1.10	0.42***	1.15
N. Observations	**62**		**62**		**119**		**107**	

*Note: *=p<.05; **=p<.01; ***=p<.001*

3.5.5. ESM Data: Daily Experience Fluctuation and average experience in EFM channels

In order to deepen women's experiential profile and their daily fluctuations, we further analysed women's answers based on the 8 channels of the Experience Fluctuation Model (EFM).

The experiential profiles associated to the channels were very similar at all time points so we decided to pool data together (Table 20), while adding in appendix the tables pertaining to the average experience for all channels at each time point (Appendices 7-14).

Table 20. Average experience in the 8 Channels at all time points.

	Channels															
	1		2		3		4		5		6		7		8	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Challenges	1.34***	0.66	1.00***	0.50	-0.08***	0.30	-0.67***	0.36	-0.96***	0.53	-0.78***	0.40	-0.07**	0.36	0.95***	0.51
Skills	0.16***	0.32	0.87***	0.45	1.10***	0.57	0.68***	0.42	0.12***	0.26	-0.87***	0.49	-1.40***	0.95	-0.90***	0.48
Concentration	0.35***	0.88	0.44***	0.90	0.19**	0.98	-0.13**	0.91	-0.31***	0.87	-0.32***	0.93	-0.21***	1.00	0.21**	0.96
In control	0.25***	0.88	0.51***	0.87	0.36***	0.83	0.15***	0.89	-0.16**	0.92	-0.44***	0.94	-0.49***	1.08	-0.16**	0.87
Happy	0.36***	0.98	0.45***	0.92	0.11***	0.89	-0.07	0.88	-0.16**	0.95	-0.33***	0.98	-0.28***	1.00	0.00	0.88
Strong	0.20***	0.94	0.50***	0.88	0.24	0.96	-0.01	0.91	-0.06	0.94	-0.43***	1.03	-0.31***	0.91	-0.01	0.86
Active	0.28***	0.88	0.43***	0.83	0.31	0.94	0.03	1.01	-0.31***	1.02	-0.37***	0.96	-0.31***	0.95	0.06	0.83
Involved	0.46***	0.89	0.44***	0.85	0.21	0.93	-0.14**	0.95	-0.38***	1.04	-0.35***	0.94	-0.23***	0.92	0.21***	0.81
Obliged	-0.18***	0.76	-0.27***	0.77	-0.10	0.83	0.10*	0.96	0.04	0.95	0.23***	1.02	0.13*	0.98	-0.08	0.81
Relaxed	0.20***	0.85	0.31***	0.92	0.10	0.95	0.02	1.01	-0.04	1.01	-0.27***	0.97	-0.25***	1.04	-0.01	0.92
Wish to do the activity	0.36***	0.72	0.38***	0.72	-0.04	1.01	-0.20***	1.06	-0.15***	1.10	-0.21***	1.04	-0.16*	1.06	0.14**	0.75
Stake	0.59***	1.12	0.50***	0.93	-0.07	0.93	-0.27***	0.82	-0.45***	0.90	-0.33***	0.76	-0.08	0.84	0.34***	0.96
Goals	0.59***	1.19	0.41***	0.94	0.02	0.76	-0.25***	0.81	-0.40***	0.89	-0.29***	0.74	-0.13**	0.72	0.34***	0.99
N. Observations	287		372		209		435		297		437		261		206	

*Note: *=p<.05; **=p<.01; ***=p<.001*

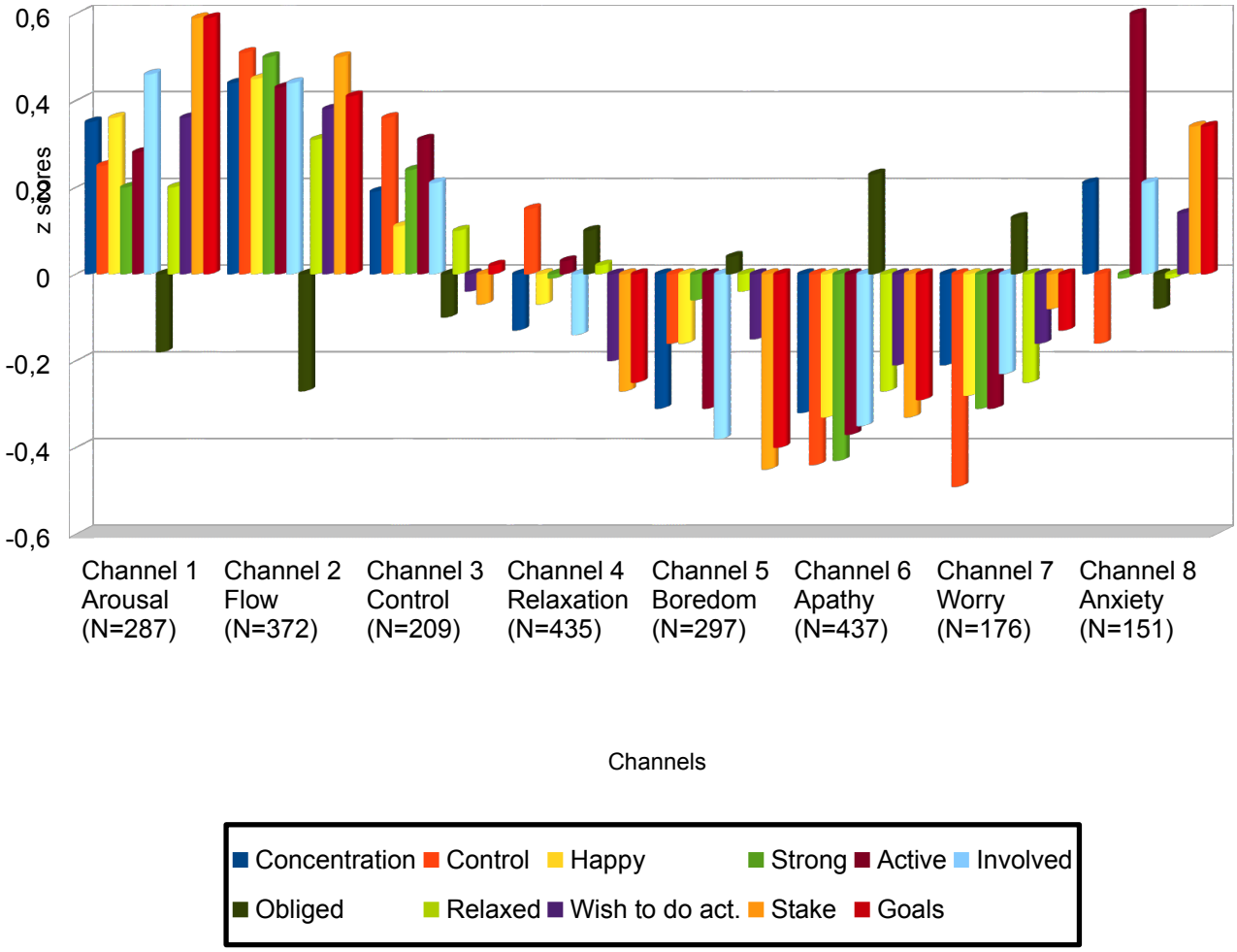
In line with theoretical expectations, our results confirm previous literature findings (Delle Fave & Masimini, 2005; Delle Fave & Bassi, 2011) thus supporting the stability of the experiential profiles. Optimal experience (Channel 2), was characterised by significantly above average values of all dimensions: challenges ($t= 38.66$, $p < 0.001$), skills ($t= 37.59$, $p < 0.001$), concentration ($t= 9.40$, $p < 0.001$), in control ($t= 11.38$, $p < 0.001$), happy ($t= 9.36$, $p < 0.001$), strong ($t= 10.99$, $p < 0.001$), active ($t= 10.14$, $p < 0.001$), involved ($t= 10.02$, $p < 0.001$), relaxed ($t= 6.43$, $p < 0.001$), wish to do the activity ($t= 10.09$, $p < 0.001$), at stake ($t= 10.43$, $p < 0.001$), and long term goals ($t= 8.27$, $p < 0.001$), and by below average values of obliged ($t= -6.81$, $p < 0.001$). The experience of Channel 6 (Apathy) was characterised by significantly below average values of challenges ($t= -40.35$, $p < 0.001$), skills ($t= -37.34$, $p < 0.001$), concentration ($t= -7.15$, $p < 0.001$), in control ($t= -9.83$, $p < 0.001$), happy ($t= -7.03$, $p < 0.001$), strong ($t= -8.81$, $p < 0.001$), active ($t= -8.08$, $p < 0.001$), involved ($t= -7.75$, $p < 0.001$), relaxed ($t= -5.87$, $p < 0.001$), wish to do the activity ($t= -4.14$, $p < 0.001$), at stake ($t= -8.97$, $p < 0.001$), long term goals ($t= -8.09$, $p < 0.001$), as well as by above average values of obliged ($t= 4.75$, $p < 0.001$). Relaxation (Channel 4) was characterised by below average values of challenges ($t= -38.73$, $p < 0.001$), concentration ($t= -3.04$, $p < 0.01$), involved ($t= -2.97$, $p < 0.01$), wish to do the activity ($t= -3.99$, $p < 0.001$), at stake ($t= -6.76$, $p < 0.001$), and long term goals ($t= -6.27$, $p < 0.001$), and by above average values of skills ($t= 33.78$, $p < 0.001$), and in control ($t= 3.47$, $p < 0.001$). Finally, Anxiety (Channel 8) presented above average values of challenges ($t= 26.46$, $p < 0.001$), concentration ($t= 3.11$, $p < 0.01$), involved ($t= 3.75$, $p < 0.001$), wish to do the activity ($t= 2.68$, $p < 0.01$), at stake ($t= 5.07$, $p < 0.001$), and long term goals ($t= 4.83$, $p < 0.001$), as well as significantly below average values of skills ($t= -27.05$, $p < 0.001$), and in control ($t= -2.60$, $p < 0.01$).

The quality of experience in the transition channels was associated with intermediate experiential states. In particular, participants reported a remarkably good experience in channel 1 (Arousal). All dimensions scored significantly above average values of all dimensions: challenges ($t= 34.13$, $p < 0.001$), skills ($t= 8.56$, $p < 0.001$), concentration ($t= 6.80$, $p < 0.001$), in control ($t= 4.79$, $p < 0.001$), happy ($t= 6.15$, $p < 0.001$), strong ($t= 3.62$, $p < 0.001$), active ($t= 5.39$, $p < 0.001$), involved ($t=$

8.68, $p < 0.001$), relaxed ($t= 4.02$, $p < 0.001$), wish to do the activity ($t= 8.42$, $p < 0.001$), at stake ($t= 8.87$, $p < 0.001$), and long term goals ($t= 8.08$, $p < 0.001$). Moreover, obliged scored below average values of obliged ($t= -3.84$, $p < 0.001$). When experiencing Control (Channel 3), participants reported significantly above average values of skills ($t= 27.65$, $p < 0.001$), concentration ($t= 2.73$, $p < 0.01$), in control ($t= 6.18$, $p < 0.001$), and happy ($t= 1.81$, $p < 0.001$). They also reported below average values of challenges ($t= -3.99$, $p < 0.001$). When experiencing Boredom (Channel 5) women reported significantly below average values of challenges ($t= -31.02$, $p < 0.001$), concentration ($t= -6.24$, $p < 0.001$), in control ($t= -2.98$, $p < 0.01$), happy ($t= -2.83$, $p < 0.01$), active ($t= -5.17$, $p < 0.001$), involved ($t= -6.25$, $p < 0.001$), wish to do the activity ($t= -2.27$, $p < 0.001$), at stake ($t= -8.53$, $p < 0.001$), and long term goals ($t= -7.59$, $p < 0.001$). Moreover, they reported significantly above average values of skills ($t= 7.29$, $p < 0.001$). Finally, when experiencing Worry (Channel 7), participants reported significantly below average values of: challenges ($t= -3.30$, $p < 0.01$), skills ($t= -23.76$, $p < 0.001$), concentration ($t= -3.45$, $p < 0.001$), in control ($t= -7.38$, $p < 0.001$), happy ($t= -4.54$, $p < 0.001$), strong ($t= -5.55$, $p < 0.001$), active ($t= -5.24$, $p < 0.001$), involved ($t= -4.00$, $p < 0.001$), relaxed ($t= -3.87$, $p < 0.001$), wish to do the activity ($t= -2.49$, $p < 0.05$), and long term goals ($t= -2.81$, $p < 0.01$). Moreover, they reported significantly above average values of obliged ($t= 2.13$, $p < 0.05$).

Figure 2 shows the average distribution of the quality of experience in the 8 channels at all time points.

Figure 2. Experiential profiles in the Channels at all time points



Moreover, according to EFM Model we analysed the frequency distribution of answers in the channels at all time points as shown in Table 21.

At T1 women mostly experienced apathy and relaxation (34.59% of the answers), followed by flow and arousal. Anxiety was reported only in a small percentage of answers, like worry, relaxation and control. At T2, they primarily experienced apathy followed by flow, while relaxation and anxiety were reported in a small percentage of answers. To a lower extent, women also experienced arousal worry, boredom and control. At T3 relaxation prevailed and was followed by apathy, flow and anxiety. Worry, control, boredom and arousal were reported in a small percentages

of the answers. Finally at 6 months postpartum (T4), boredom and apathy prevailed followed by relaxation, flow and anxiety. To a lower extent women reported arousal, worry and control.

Apathy seemed to be most commonly experienced throughout the whole pregnancy and puerperium transition while control and anxiety were reported in a small percentage of answers. Flow represented a frequent and stable experience across the whole transition to second-time motherhood, peaking at 20 weeks gestation.

Table 21. Percentage distribution of channels at all time points.

Channels	**T1**	**T2**	**T3**	**T4**
	%	*%*	*%*	*%*
1 Arousal	13.25	11.42	6.58	14.07
2 Flow	15.34	14.86	14.99	14.07
3 Control	6.69	9.43	9.51	7.96
4 Relaxation	17.02	16	22.67	14.26
5 Boredom	11.72	10.14	8.04	18.15
6 Apathy	17.57	18.29	17.92	15.74
7 Worry	9.76	12.43	9.69	9.44
8 Anxiety	8.65	7.43	10.6	6.3
TOT	**717**	**700**	**547**	**540**

Note: TOT= total number of answers

The last analysis we performed referred to the daily fluctuations during interactions in family contexts, specifically in the nuclear family and while interacting with one's own child or children (Table 23).

As shown in Table 22 and in line with our hypotheses, women's experience during interactions with the nuclear family was mostly characterised by flow during pregnancy and up to 40 days postpartum. While interacting with nuclear family, participants were in a positive state where all

psychological components - emotional, motivational and cognitive ones – balanced. Nonetheless, women reported fluctuations in channels 4 and 6 showing that interactions were also a source of apathy and relaxation. At six months postpartum they mostly reported relaxation and boredom and the experience of flow dropped along with apathy.

Table 22. Percentage distribution of the daily fluctuations during interactions with nuclear family at all time points.

Channels	**T1**	**T2**	**T3**	**T4**
	%	*%*	*%*	*%*
1 Arousal	14.63	16.67	7.55	16.13
2 Flow	21.95	23.81	24.53	6.45
3 Control	2.44	7.14	11.32	9.68
4 Relaxation	19.51	4.76	13.21	19.35
5 Boredom	4.88	11.90	3.77	16.13
6 Apathy	12.20	11.90	20.75	6.45
7 Worry	14.63	11.90	5.66	12.90
8 Anxiety	9.76	11.90	13.21	12.90
TOT	**41**	**42**	**53**	**31**

Note: TOT= total number of answers

Table 23 shows women's experience during interactions with the child or children. Flow was the most frequently reported experience during pregnancy, while relaxation and boredom prevailed postpartum. Apathy was also reported, particularly at 6 months postpartum, while anxiety which grew approaching delivery and foreshadowing the new daily organisation with two children, was rather low during the whole transition.

Table 23. Percentage distribution of the daily fluctuations during interactions with child or children at all time points.

Channels	**T1**	**T2**	**T3**	**T4**
	%	*%*	*%*	*%*
1 Arousal	19.35	12.90	11.76	16.82
2 Flow	20.97	22.58	15.13	17.76
3 Control	6.45	6.45	11.76	5.61
4 Relaxation	14.52	9.68	17.65	9.35
5 Boredom	11.29	14.52	7.56	19.63
6 Apathy	12.90	9.68	14.29	15.89
7 Worry	9.68	8.06	10.92	9.35
8 Anxiety	4.84	16.13	10.92	5.61
TOT	**62**	**62**	**119**	**107**

Note: TOT= total number of answers

CHAPTER 4

DISCUSSION AND CONCLUSIONS

4.1 Discussion

Previous literature stated that the transition to parenthood is marked by many stressful changes. Studies focused on the transition to first time-motherhood as implying a radical overhaul of individuals' hierarchy of values, requiring an experiential adjustment to new environmental challenges, and a redistribution of the limited psychic resources among them in daily life (Coffman, et al., 1994). In spite of the radical changes that are connected to the birth of the second child, literature on second-time motherhood is scarce and under-investigated.

The present study aimed at analysing the psychosocial resources and the risk factors of second-time mothers' before and after childbirth. In particular, we focused on their everyday life and quality of experience. To the best of our knowledge, this was the first study focusing on the joint analysis of well-being, in both its hedonic and the eudaimonic components, and ill-being, evaluated in terms of risk of perinatal depression.

Findings obtained from both single-administration and real-time instruments allowed us to present a general overview on well-being and ill-being and to describe participants' everyday life and associated quality of experience in four crucial phases of pregnancy and puerperium: 20-22 weeks gestation, 34-37 weeks gestation, 40 days postpartum, and 6 months postpartum.

In the next paragraphs findings will be discussed based on the study aims.

4.1.1. Well-being and Ill-being during Second-Time Motherhood

Mental Health and Second-time Motherhood: Stability and Change

The first aim of this study focused on gaining knowledge on well-being and ill-being across pregnancy and puerperium. A first question that guided our work was: What was the impact of giving birth to a second child on hedonic and eudaimonic indicators of well-being and on distress

indicators?

The descriptive analyses of the well- and ill-being indicators showed that women overall reported low levels of depression and psychopathological symptoms, and good mental health both during and after pregnancy. Their scores for satisfaction with life, the six dimensions of psychological well-being, and self-efficacy in expressing positive emotions and managing negative ones were in line with findings derived from other adult samples at the national level.

The longitudinal comparison of women's mental health and mental illness, as well as emotional regulation indicators, allowed us to detect the effect of the newborn on the family system and, specifically, on the adjustment potentials of mothers over time. With regards to perceived ill-being, in line with previous research on first-time mothers (Hoffenaar, et al., 2010), no differences were identified between pre- and postnatal reports of depression. Therefore, our results do not confirm previous research on second-time mothers finding that found higher psychological distress and negative mood after birth (Gameiro, et al., 2009).

Regarding perceived hedonic well-being, previous studies on first-time mothers have shown that life satisfaction remains stable up to 6 months after delivery (Dyrdal, et al., 2011; Hoffenaar, et al., 2010). Our participants confirmed these findings: The mean level of subjective well-being did not change after the birth of the second child, thus indicating the presence of feelings of pleasure, comfort, and enjoyment.

With regards to the eudaimonic aspects of well-being, we expected to detect positive consequences of motherhood on personal growth, as highlighted by Delle Fave & Massimini (2004) and by Taubman – Ben-Ari and colleagues (2012). Our research expanded these findings showing an overall stability of all dimensions of psychological well-being. Before and after childbirth, women reported that their lives had meaning, purpose, and direction, they viewed themselves as living in accord with their own personal convictions, that they were making use of their personal talents and potentials managing their life situations. Moreover, they perceived a sense of connection with significant others accepting personal limitations.

Moreover, at 20 weeks gestation and 6 months post-partum participants showed a tendency to better manage of negative emotions, compared to national samples (Caprara et al., 2003). This finding, though exploratory in nature, suggests the importance of this aspect in fostering mothers' resilience and well-being. In particular, as regulatory emotional self-efficacy beliefs contribute to efforts in modulating impulsive tendencies (Bandura, et al., 2003), they are functional in promoting rewarding and enriching social ties and relations (Eisenberg, et al., 2000; Fredrickson & Joiner, 2002), as well as empathy (Caprara, et al., 2006). They also facilitate adaptive coping (Folkman & Moskowitz, 2000), and protect from depression (Bandura et al., 2003).

Literature has shown that the presence and stability of hedonic and eudaimonic well-being are implicated in health and biological regulation as well as in brain-based processes, serving adaptive and protective functions (Ryff, 2013, Diener, 2009). Both the absence of ill-being and the presence of well-being dimensions, as well as the unchanged ability in emotional regulation throughout the duration of the study, allow us to suggest that the birth of a second child does not disrupt the lives of mothers who are well-equipped and skilled in dealing with the new challenge.

Mental Health and Mental Illness: Two Different Continua

The second question that guided our research was: Are mental illness and mental health independent constructs or do they correlate to some extent as posited by the Two Continua Model (Keyes, 2002, 2005, 2007)?

The importance of analysing mental health not as the mere absence of pathological symptoms, but as a multifaceted independent construct clearly emerged in the correlational analysis of depression with hedonic and eudaimonic well-being indicators. In line with previous studies (Keyes 2002, 2005) and with our research hypothesis, few significant correlations were identified. At both time points, significant negative associations were obtained only for depression and presence of psychopathological symptoms (GSI) with psychological well-being, particularly with environmental mastery and self-acceptance after birth. These findings point to a relationship

between mothers' feelings of distress, reduced positive attitude towards the self, and reduced ability to master environmental challenges after childbirth.

Moreover, an interesting relationship was detected between ill-being dimensions and emotional regulation. While before childbirth depression and GSI negatively correlated only with the dimension of expressing positive emotions, after childbirth they negatively correlated only with the dimension of managing negative emotions. This suggests that the ability of managing negative emotions is not associated with psychological distress during pregnancy, and that the ability of expressing positive emotions does not relate with depressive psychopathology after childbirth. Our findings contrast with general literature on Major Depressive Disorder (MDD) maintaining that depressive symptomatology is associated both with sustained negative affect and diminished positive affect (Joormann & Quinn, 2014; Brockmeyer, et al., 2012). Moreover, Emotional Regulation (ER) correlated with various dimensions of PWB at T1 and T4, while no correlations were found between SWL and ER before and after childbirth. Even if these preliminary results prevent any firm conclusion, they point out that emotional regulation can be added as a measure of eudaimonic well-being.

Summarising, the preponderant lack of correlations between mental illness and mental health indicators found in our data underscores the need to analyse both aspects of ill-being and well-being as these can provide complementary information that mere emphasis on presence - or absence - of perinatal depression cannot offer. Our study supports previous literature showing that well-being is not simply the flip-side of psychological distress. Both are important indicators of overall mental health, and population studies reveal diverse combinations of how the two domains come together (Ryff, 2013; Keyes, 2002, 2005, 2007; Hoffenaar, et al., 2010).

4.1.2. Second-Time Mothers' Daily Life and Quality of Experience

Second-time mothers daily life

The second aim of this study focused on participants' everyday life and the associated quality of

experience in four crucial phases of pregnancy and puerperium. The first questions we addressed were: What were the characteristics of women's time-budget across pregnancy and after the second childbirth? How did the birth of a second child affect participants time-budget?

Results showed that participants prominently reported being involved in interactions across the entire transition to motherhood, followed by activities of maintenance and chores. Interactions were mostly devoted to child-care activities like holding, washing, dressing, feeding, playing, watching, cuddling, listening to, scolding, helping, and staying with one's own child or children. Another important source of daily investment concerned chores and maintenance activities: Women spent a great amount of time in housework, like cleaning, cooking, ironing, or tidying-up the house; and in personal hygiene activities like eating, drinking, falling asleep, waking up, dressing or undressing, and getting ready to go out.

The daily activities were mainly performed in participants' homes, and in the postpartum period at a much lower extent, in the house of parents or friends. In addition, data showed that women mostly spent time with family and other people or by themselves. Deepening women's answers it came to light that at all time points they mostly reported being alone with their child or children, and that the time they spent alone with the partner was very few, in particular at 40 days postpartum. Moreover, data showed that interactions were the main activity women were engaged in while staying with nuclear family, with their own child or children and alone with the partner.

Overall, time-budget data showed that second-time mothers greatly invested in their children, in the family, in child-care and the related activities of taking care of the house with all the chores associated to the family daily functioning, in particular at 6 months postpartum. At 20 weeks gestation, women still worked balancing the time dedicated to family with the time dedicated to productive activities. But with the passage of time, more and more did they fall back on the family, disinvesting on time dedicated to the outside world. This result is in line with findings obtained in previous studies testing mothers' daily experience which found that the mean percentage of child-related activities reported by parents considerably increased after birth (Delle Fave & Massimini,

2004).

Moreover, based on women's reports data suggest that both during pregnancy and puerperium participants' time spent with partners was very few, as if mothers themselves were solely involved in the pregnancy and childbirth process. Even though a great number of studies on first-time mothers support the correlation between insufficient investment from fathers with postpartum depression (Beck,1996; Hagen, 1999), women in the present study did not show postpartum symptoms of distress connected to the separation from the partner. Nonetheless, the analysis of ESM forms showed that women experienced disappointment and discouragement connected to the absence of the partner, and more in general to the frequent condition of loneliness.

Second-time mothers daily experience

An additional question we addressed while investigating participants' everyday life was: What was the quality of experience reported during daily activities and when staying in the different family contexts?

The quality of experience associated to the five main daily activities, namely productive tasks, free-time, interactions, maintenance, and chores, overall presented similar characteristics with the one described in many previous studies testing for example first mothers (Delle Fave & Massimini, 2004), adolescents (Bassi, et al, 2009; Delle Fave & Bassi, 2000), hospitalised patients (Sartori, et al., 2014), and professional and volunteer rescuers (Sartori & Delle Fave, 2014; Delle Fave, et al. 2011).

Moreover, specific characteristics were highlighted in our participants. Second-time mothers' quality of experience during productive tasks was similar at 20 weeks gestation up to 6 months postpartum. It was prominently characterized by high challenges and a great cognitive investment and at the same time, by negative affect and low intrinsic motivation. It was also characterised by sense of duty and obligation. Differently from other findings where long-term goals connected to productive activities presented above average values (Delle Fave, et al. 2011), participants in our

study reported average values. This finding supports the hypothesis that women's investment was completely directed to the contingent transition they were facing, rather than to long-term careerer projects. However free-time activities had a secondary role in women's lives, they were characterised by positive mood, positive affect, and desire to do the activity in a similar way across the entire transition to motherhood. On the one hand, free-time in our participants was described as precious resting time from burdensome daily tasks and duties. On the other hand, quoting a woman as: “necessary in order to recharge the batteries and be ready to start again”. Coming to the most frequently reported activities of interactions, women's quality of experience was similar at all time points. Participants reported little cognitive investment, but a very positive affective experience, desire to do the activity, long term goals, and the perception of high challenges and engagement. Interaction activities globally were associated with the best positive experience. On the contrary, participants' experience during chores and maintenance was substantially similar and negative at all time points. During chores participants reported low opportunities for actions, happiness and relaxation, no desire to do the activity, low perception of long term goals, while high sense of duty and obligation. During maintenance they perceived average involvement and long term goals, low challenges and engagement. Women reported they desired to do the activity, probably as a distraction from daily duties and interactions devoted to child-care.

Finally, women's quality of experience while interacting with the nuclear family was similar throughout the duration of the study. It was prominently characterized by an average cognitive and affective investment, by high involvement and low sense of duty and obligation. It was also characterised by long term investment in meaningful life goals, in particular during pregnancy. The experience turned slightly worse after childbirth. In addition, interactions with one's own child or children were associated with high challenges and happiness, in particular in the puerperium period, when women reported high long term investment in an activity meaningful for one's own life.

Overall, the analysis of women's quality of experience showed that interactions with one's own child or children represented the best experience during the transition to second-time motherhood.

Second-time mothers' daily fluctuations in the Channels of EFM

As discussed in section 3.4.2. the relationship between levels of perceived challenges and skills - on the one side - and the quality of experience - on the other side – was explored through the Experience Fluctuation Model (EFM, Massimini et al., 1987). On the basis of data gathered we addressed the following question: How does women's subjective experience fluctuates in the Channels across the transition to second-time motherhood?

In line with theoretical expectations, our results confirmed previous literature findings (Delle Fave & Masimini, 2005; Delle Fave, et al., 2011; Csikszentmihalyi, 1975/2000; Csikszentmihalyi & Csikszentmihalyi, 1988), thus supporting the characteristics of the experiential profiles associated to each Channel of the model. In particular, it was possible to identify four main experiential profiles: optimal experience (Channel 2), relaxation (Channel 4), apathy (Channel 6), and anxiety (Channel 8). Flow (above average balance between challenges and skills) was proved to be an extremely positive and complex experience of high and effortless concentration: participants described themselves as in control of the situation, involved, and reported long-term goals in the activity they were performing. They also showed intrinsic reward and positive affect. Relaxation (imbalance between low challenges and high skills) was a substantially average experience, characterised by passivity and low cognitive investment were participants did not perceive crucial long-term goals in the activities they were performing. In line with previous literature, relaxation in our sample was primarily connected with energy restoration and low-challenging tasks (Delle Fave & Bassi, 2000; Delle Fave & Bassi, 2011). Apathy (balance between challenges and skills significantly below average) was an extremely negative experience characterised by psychic disorganization, with low values of the cognitive, emotional, and motivational components of experience. In channel 6 the lack of interest towards future goals caused overall feelings of disengagement (Delle Fave, 1996). Finally, the experience of anxiety (imbalance between high challenges and low skills) was characterised by high average values of involvement and long-term goals, negative affect, associated with feelings of being unable to cope

with the contingent situation.

Apathy was most commonly experienced throughout pregnancy and puerperium, except for boredom which prevailed 6 months postpartum. The second Channel most frequently experienced was relaxation, in particular at 40 days postpartum and at 20 weeks gestation. The third frequently reported experience throughout motherhood and puerperium was flow, which remained stable at all time points peaking at 20 weeks gestation. Interestingly, anxiety was the least reported in participants' answers. Overall, our findings suggest that differently from first-time mother's reports for whom anxiety represented a predominant experience (Delle Fave & Massimini, 2004), second-time mothers perceived themselves as more skilled and prepared to face motherhood, childbirth and childcare. Pregnancy and puerperium were clearly moments in which the experts second-time mothers were not challenged by a physical condition that they already knew, or by interactions and child-care tasks with a 1 month old infant which they had already faced. This knowledge of the whole experience, together with the different allocation of competences and abilities, brought about a general response of apathy and relaxation. Nonetheless, optimal experience accompanied women throughout the transition showing similar and high values at all time points. This suggests that women constantly put themselves to the test and that their skills were consistently challenged by the contingent situation.

The last analysis performed referred to the daily fluctuations during interactions in family contexts, specifically in the nuclear family and while interacting with one's own child or children. Data gathered showed that in both family contexts flow was the most reported up to the first month postpartum, thus suggesting that family and children represented a powerful source of optimal experience as receivers of elective emotional investment. Relaxation, apathy and boredom were also reported, particularly peaking at 6 months after childbirth when interacting with the children. In terms of psychological selection, the association of a positive and challenging experience in the interactions with nuclear family and children enhances the probability that mothers will preferentially select and cultivate family-related activities in the future. This is an important

premise, because the building of a constructive and well-balanced family relationship is based not just on the amount of time mothers spend in their nuclear family, but on the quality of the interactions, primarily related to subjective experience (Bonney, et al., 1999). Data suggest that the relevance of the mothering role women took on, is not limited to the present time but it is also projected into the future as a main goal and as component of the life theme. This entails a strong and long-term commitment to develop the complex behavioural and social skills related to motherhood. The outcome will directly influence child growth, as shown by extensive research studies, investigating the consequences of early family interactions on child and adult behaviour (Bowlby, 1969, 1988; Bretherton & Waters, 1985; Crowell & Feldman, 1991; Freedman & Gorman, 1993; Hinde & Stevenson-Hinde, 1988; van Ijendoorn, 1992).

Moreover, relations were shown to be important sources of both positive and negative experiences among human beings (Delle Fave, et al., 2011). This is particularly true of mothers who derive great psychological benefit from the interactions with partner and children across childbirth, but at the same time are forced to face the great amount of emotional, physical and practical burden connected to it. Overall findings on the quality of experience in the Channels, are consistent with the working hypothesis formulated. They confirm the role of interactions with the nuclear family and children as an elective source of optimal experience, suggesting that mothers were deeply involved in the life-long project they planned. At the same time, data showed that this overall family dimension was also a source of relevant pockets of apathy and relaxation, particularly at six months postpartum. Previous studies showed that high percentages of apathy in one's daily life can lead to potentially pathological outcomes. Delle Fave & Massimini (1992) found that the predominance of apathy hampers overall mental health and personal growth. These results could support the shift towards a gradual deterioration over time of mother's overall well-being, as already described in previous studies (Belsky & Rovine, 1990; Clench-Aas, et al. 2009; Dyrdal, et al., 2011; Pavot & Diener, 2008).

4.2. Conclusions

Our study provides evidence of specific aspects of second-time maternal adjustment to childbirth that are still overlooked in the literature on parenthood. The one year experience with women indeed revealed a complex and articulated picture. On the one hand, findings obtained from single-administration instruments analysing well- and ill-being indicators showed that women overall reported low levels of depression and psychopathological symptoms, as well as good mental health both during and after pregnancy. Thus, women's psychological functioning did not seem to be heavily and negatively affected by the new life transition. On the other hand, evidence obtained from real-time instruments highlighted that women's daily quality of experience was subject to fluctuations associated with contingent roles and tasks required by motherhood: Along with meaningful sources of optimal experience, enjoyment, satisfaction, and joy, the elective investment on children and nuclear family could also be intended as an important source of boredom, relaxation and apathy.

Overall findings suggest that, compared to first-time motherhood, second-time motherhood could be characterised by the presence of specific risk factors that could jeopardise well-being and enhance ill-being. While first-time mothers' transition is mainly characterised by anxiety (Delle Fave & Massimini, 2004), a transient experience that does not last long, the second-time mothers' transition could drift on apathy, which could bring about stagnation and long-term psychic disengagement (Delle Fave, et al., 2011). According to Keyes' model (2002, 2005, 2007), programmatic interventions to promote and protect overall mental health should bring about reductions in ill-being and enhancement in well-being. During antenatal and postnatal care, second-time mothers' should become aware that, along with intense positive emotions towards the newborn and the nuclear family in general, they could experience boredom, low levels of cognitive investment, and negative affect. Moreover, they should be able to give meaning to such feelings understanding their connection with the physical, emotional and practical knowledge they already possess of the whole experience. On the one hand, the competence and the skills they acquired

during previous pregnancy and child-care activities are protective factors from anxiety. On the other hand, the already gained knowledge represents a source of relaxation and boredom. This understanding holds up against the development of feelings of guilt and shame. Moreover, it lays the foundations to prevent the described drift on apathy. Through the implementation of individual strengths and resources, women need to be accompanied to complement their elective investment on the children with additional goals and activities they find stimulating and challenging. The association of their life-long family project with new interests enriches and gives meaning to life. In order to be able to take some "time off" from the great burden intrinsic to child-care, women need to be supported and lightened by the presence of the partner and significant others providing emotional and practical help.

In conclusion, the complexity and specificity of second-time pregnancy and puerperium transition should encourage health professionals to adopt a more articulated prevention approach, supporting mothers' healthy psychological adjustment. Professionals should take into account the evidence that the special interaction with one's own children and with the nuclear family in general is acknowledged by the mothers as the major source of optimal experience in their lives. At the same time, more efforts should be put in the promotion of mother and child well-being, through policy provisions that clearly legitimate the key role of a healthy relationship with the children for the promotion of family and society empowerment. In addition, the role of partner, parents, and significant others should be enhanced as sources of support in a crucial life stage that requires a massive investment of energies in the dyadic relationship with the newborn, as well as in the reorganisation of the entire family system. Training programs could be designed for fathers and other family members, helping them develop awareness about mothers' needs and wishes.

Being a mother is not just being a mother. It is also about being a daughter, a wife, a friend, a woman. It is about making sense of and harmonizing different social roles and expectations in order to realize one's potentials and personal resources in a fulfilling and rewarding life project.

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APPENDICES

Appendix 1. Edinburgh Postnatal Depression Scale (EPDS)

Lei di recente ha avuto un bambino. Ci piacerebbe sapere come si è sentita nell'ultima settimana. La preghiamo di sottolineare la risposta che meglio descrive come si è sentita nei sette giorni appena trascorsi e non soltanto come si sente oggi.
Per aiutarla, ecco un esempio già completato:

Sono stata felice
Sì, sempre
Sì, per la maggior parte del tempo
No, non molto spesso
No, per niente

Il che in pratica significa "Sono stata per lo più felice durante la scorsa settimana". Per favore completi le altre domande nello stesso modo.

Nei sette giorni appena trascorsi:

8. **Sono stata capace di ridere e di vedere il lato buffo delle cose**
   Come facevo sempre
   Adesso, non proprio come al solito
   Adesso, decisamente un po' meno del solito
   Per niente

9. **Ho guardato con gioia alle cose future**
   Come ho sempre fatto
   Un po' meno di quanto ero abituata a fare
   Decisamente meno di quanto ero abituata a fare
   Quasi per nulla

10. **Mi sono incolpata senza motivo quando le cose andavano male**
    Sì, il più delle volte
    Sì, qualche volta
    Non molto spesso
    No, mai

11. **Sono stata preoccupata o in ansia senza un valido motivo**
    No, per niente
    Quasi mai
    Sì, qualche volta
    Sì, molto spesso

12. **Ho avuto momenti di paura o di panico senza un valido motivo**
    Sì, moltissimi
    Sì, qualche volta
    No, non molti
    No, per niente

13. Mi sentivo sommersa dalle cose

Sì, il più delle volte non sono stata affatto capace di far fronte alle cose
Sì, qualche volta non sono stata capace di far fronte alle cose bene come al solito
No, il più delle volte ho fatto fronte alle cose bene
No, sono riuscita a fronteggiare le situazioni bene come sempre

14. Sono stata così infelice che ho avuto difficoltà a dormire

Sì, il più delle volte
Sì, abbastanza spesso
Non molto spesso
No, per nulla

15. Mi sono sentita triste o infelice

Sì, il più delle volte
Sì, abbastanza spesso
Non molto spesso
No, per nulla

16. Sono stata così infelice che ho persino pianto

Sì, il più delle volte
Sì, abbastanza spesso
Solo di quando in quando
No, mai

17. Il pensiero di farmi del male mi è passato per la mente

Sì, molto spesso
Qualche volta
Quasi mai
Mai

Grazie per la collaborazione

Appendix 2. Symptom Checklist-90-R (SCL-90)

Nella lista che segue sono elencati problemi e disturbi che spesso affliggono le persone. Li legga attentamente e cerchi di ricordare se ne ha sofferto nella settimana precedente e con quale intensità: risponda a tutte le domande facendo una crocetta nella casella corrispondente all'intensità di ciascun disturbo. Se vuole cambiare la risposta, faccia un cerchio intorno alla risposta sbagliata e metta la crocetta nel quadrato giusto.

PER NIENTE	POCO	MODERATAMENTE	MOLTO	MOLTISSIMO
0	1	2	3	4

In che misura soffre o ha sofferto di…….

1	Mal di testa	0	1	2	3	4
2	Nervosismo o agitazione interna	0	1	2	3	4
3	Incapacità di scacciare pensieri, parole o idee indesiderate	0	1	2	3	4
4	Sensazione di svenimento o di vertigini	0	1	2	3	4
5	Perdita dell'interesse o del piacere sessuale	0	1	2	3	4
6	Tendenza a criticare gli altri	0	1	2	3	4
7	Convinzione che gli altri possano controllare i suoi pensieri	0	1	2	3	4
8	Convinzione che gli altri siano responsabili dei suoi disturbi	0	1	2	3	4
9	Difficoltà a ricordare le cose	0	1	2	3	4
10	Preoccupazioni per la sua negligenza o trascura-tezza	0	1	2	3	4
11	Sentirsi facilmente infastidita o irritata	0	1	2	3	4
12	Dolori al cuore o al petto	0	1	2	3	4
13	Paura degli spazi aperti o delle strade	0	1	2	3	4
14	Sentirsi debole o fiacca	0	1	2	3	4
15	Idee di togliersi la vita	0	1	2	3	4
16	Udire voci che le altre persone non odono	0	1	2	3	4
17	Tremori	0	1	2	3	4
18	Mancanza di fiducia negli altri	0	1	2	3	4
19	Scarso appetito	0	1	2	3	4

20	Facili crisi di pianto	0	1	2	3	4
21	Sentirsi intimidita nei confronti dell'altro sesso	0	1	2	3	4
22	Sensazione di essere presa in trappola	0	1	2	3	4
23	Paure improvvise senza ragione	0	1	2	3	4
24	Scatti d'ira incontrollabili	0	1	2	3	4
25	Paura di uscire da sola	0	1	2	3	4
26	Rimproverarsi per qualsiasi cosa	0	1	2	3	4
27	Dolori alla schiena	0	1	2	3	4
28	Senso di incapacità a portare a termine le cose	0	1	2	3	4
29	Sentirsi sola	0	1	2	3	4
30	Sentirsi giù di morale	0	1	2	3	4
31	Preoccuparsi eccessivamente per qualsiasi cosa	0	1	2	3	4
32	Mancanza di interesse	0	1	2	3	4
33	Senso di paura	0	1	2	3	4
34	Sentirsi facilmente ferita o offesa	0	1	2	3	4
35	Convinzione che gli altri percepiscano i suoi pensieri	0	1	2	3	4
36	Sensazione di non trovare comprensione o simpatia	0	1	2	3	4
37	Sensazione che gli altri non le siano amici o l'abbiano in antipatia	0	1	2	3	4
38	Dover fare le cose molto lentamente per essere sicura di farle bene	0	1	2	3	4
39	Palpitazioni o sentirsi il cuore in gola	0	1	2	3	4
40	Senso di nausea o di mal di stomaco	0	1	2	3	4
41	Sentimenti di inferiorità	0	1	2	3	4
42	Dolori muscolari	0	1	2	3	4
43	Sensazione che gli altri la guardino o parlino di lei	0	1	2	3	4
44	Difficoltà ad addormentarsi	0	1	2	3	4
45	Bisogno di controllare ripetutamente ciò che fa	0	1	2	3	4

46	Difficoltà a prendere decisioni	0	1	2	3	4
47	Paura di viaggiare in autobus, nella metropolitana o in treno	0	1	2	3	4
48	Sentirsi senza fiato	0	1	2	3	4
49	Vampate di calore o brividi di freddo	0	1	2	3	4
50	Necessità di evitare certi oggetti, luoghi o attività perché la spaventano	0	1	2	3	4
51	Senso di vuoto mentale	0	1	2	3	4
52	Intorpidimento o formicolio di alcune parti del corpo	0	1	2	3	4
53	Nodo alla gola	0	1	2	3	4
54	Guardare al futuro senza speranza	0	1	2	3	4
55	Difficoltà a concentrarsi	0	1	2	3	4
56	Senso di debolezza in qualche parte del corpo	0	1	2	3	4
57	Sentirsi tesa o sulle spine	0	1	2	3	4
58	Senso di pesantezza alle braccia o alle gambe	0	1	2	3	4
59	Idee di morte	0	1	2	3	4
60	Mangiare troppo	0	1	2	3	4
61	Senso di fastidio quando la gente la guarda o parla di lei	0	1	2	3	4
62	Avere dei pensieri che non sono suoi	0	1	2	3	4
63	Sentire l'impulso di colpire, ferire o fare male a qualcuno	0	1	2	3	4
64	Svegliarsi presto al mattino senza riuscire a riaddormentarsi	0	1	2	3	4
65	Avere bisogno di ripetere lo stesso atto, come toccare, contare, lavarsi le mani, ecc.	0	1	2	3	4
66	Sonno inquieto o disturbato	0	1	2	3	4
67	Sentire l'impulso di rompere gli oggetti	0	1	2	3	4
	Avere idee o convinzioni che gli altri non condividono	0	1	2	3	4
	Sentirsi penosamente imbarazzata in presenza di altri	0	1	2	3	4
	Sentirsi a disagio tra la folla, come nei negozi, al cinema, ecc.	0	1	2	3	4
	Sensazione che tutto richieda uno sforzo	0	1	2	3	4

Momenti di terrore o di panico	0	1	2	3	4
Sentirsi a disagio quando mangia o beve in presenza di altri	0	1	2	3	4
Ingaggiare frequenti discussioni	0	1	2	3	4
Sentirsi a disagio quando è sola	0	1	2	3	4
Convinzione che gli altri non la apprezzino	0	1	2	3	4
Sentirsi sola e triste anche in compagnia	0	1	2	3	4
Senso di irrequietezza, tanto da non poter star seduta	0	1	2	3	4
Sentimenti di inutilità	0	1	2	3	4
Sensazione che le cose più comuni e familiari siano estranee o irreali	0	1	2	3	4
Urlare e scagliare oggetti	0	1	2	3	4
Avere paura di svenire davanti agli altri	0	1	2	3	4
Impressione che gli altri possano approfittare delle sue azioni	0	1	2	3	4
Pensieri sul sesso che lo affliggono	0	1	2	3	4
Idea di dover scontare i propri peccati	0	1	2	3	4
Sentirsi costretto a portare a termine ciò che ha iniziato	0	1	2	3	4
Pensiero di avere una grave malattia fisica	0	1	2	3	4
Non sentirsi mai vicino alle altre persone	0	1	2	3	4
Sentirsi in colpa	0	1	2	3	4
Idea che qualche cosa non vada bene nella sua mente	0	1	2	3	4

Appendix 3. Satisfaction With Life Scale (SWLS)

Di seguito troverà cinque affermazioni con cui può essere d'accordo o in disaccordo. Indichi il suo grado di accordo con ogni affermazione, segnando il numero corrispondente sulla scala (**1 = totalmente in disaccordo**; **7 = totalmente d'accordo**)

Per molti versi la mia vita si avvicina al mio ideale.	1	2	3	4	5	6	7
Le condizioni della mia vita sono eccellenti.	1	2	3	4	5	6	7
Sono soddisfatta della mia vita.	1	2	3	4	5	6	7
Fino ad ora ho ottenuto le cose importanti che volevo dalla vita.	1	2	3	4	5	6	7
Se potessi rivivere la mia vita, non cambierei quasi nulla.	1	2	3	4	5	6	7

Appendix 4. Psychological Well-being Scales (PWBS)

La preghiamo di compilare questo questionario, indicando per ogni affermazione un punteggio da 1 a 6, tenendo presente che 1 = non è il mio caso, non sono proprio d'accordo; 6 = mi capita proprio così, sono perfettamente d'accordo. Può utilizzare anche i punteggi intermedi (2, 3, 4, 5) nel caso non sia proprio per lei come descritto, indicando se è più o meno d'accordo (4 o 5) o in disaccordo (2 o 3). Ad esempio: - Tendo a preoccuparmi di quello che gli altri pensano di me. 1 = no, non me ne importa niente; 6 = è proprio così.
Non ci sono risposte giuste o sbagliate. Scriva solo quello che si sente, senza pensarci troppo.
Grazie.

1_____2_____3_____4_____5_____6
Non è il mio caso **E' proprio così**

1. A volte cambio il mio modo di agire o pensare per essere come gli altri. __
2. In generale ho la sensazione di padroneggiare la situazione in cui mi trovo. __
3. Non sono interessata alle attività che possono allargare i miei orizzonti. __
4. La maggior parte delle persone mi trova piacevole ed affettuosa. __
5. Mi sento bene quando penso a quello che ho fatto in passato e quello che spero di fare in futuro. __
6. Sono soddisfatta di come sono andate le cose nella mia vita. __
7. Non ho paura di esprimere le mie opinioni, anche se esse sono contrarie a quelle della maggior parte delle altre persone. __
8. Le richieste della vita di tutti i giorni spesso mi abbattono. __
9. In generale, ho la sensazione di imparare sempre di più di me stessa col passare del tempo. __
10. Mantenere relazioni stabili è stato per me difficile e frustrante. __
11. Vivo la vita giorno per giorno e non penso al futuro. __
12. In generale mi sento fiduciosa e sicura nei confronti di me stessa. __
13. Le mie decisioni non sono di solito influenzate da quello che qualcun altro sta facendo. __
14. Non sto bene con la gente e nell'ambiente che mi circonda. __
15. Sono il tipo di persona a cui piace provare nuove cose. __
16. Spesso mi sento isolata perché ho poche vere amicizie con cui condividere le mie preoccupazioni. __
17. Tendo a concentrarmi sul presente perché il futuro sicuramente mi darà problemi. __
18. Ho la sensazione che molte persone che conosco abbiano ricevuto di più nella vita rispetto a quello che ho ricevuto io. __
19. Tendo a preoccuparmi di quello che le altre persone pensano di me. __
20. Sono molto brava a gestire le molte responsabilità della vita quotidiana. __
21. Non voglio tentare nuove strade per compiere nuove cose – la mia vita va bene così. __
22. Mi piace parlare con i familiari e gli amici. __
23. Ho la sensazione di sapere cosa sto facendo e dove voglio arrivare nella vita. __
24. Se fosse possibile, ci sarebbero molte cose di me stessa che vorrei cambiare. __
25. Per me è più importante essere soddisfatta di me stessa piuttosto che avere l'approvazione degli altri. __
26. Spesso mi sento sopraffatta dalle mie responsabilità. __
27. Penso sia importante avere nuove esperienze che ti aiutino a confrontare l'opinione che hai di te e del mondo circostante. __
28. E' importante per me sapere ascoltare quando veri amici mi parlano dei loro problemi. __
29. Le mie attività quotidiane mi sembrano banali e insignificanti. __
30. Sono soddisfatta della maggior parte degli aspetti della mia personalità. __
31. Tendo ad essere influenzata dalle persone che hanno forte personalità. __
32. Se fossi infelice della mia situazione di vita farei certamente qualcosa per cambiarla. __

33. Quando ci penso, non sono migliorata molto come persona negli anni. __
34. Non ho molte persone che vogliano ascoltarmi quando ho bisogno di parlare. __
35. Non ho una buona percezione di quello che sto cercando di fare nella vita. __
36. Ho commesso qualche errore in passato ma ho la sensazione che tutto quanto andrà per il meglio. __
37. Raramente la gente mi convince a fare cose che non voglio fare. __
38. Generalmente me la cavo bene nel prendermi cura delle mie finanze personali e dei miei affari. __
39. Secondo me la gente di ogni età può continuare a crescere e svilupparsi. __

40. Ho la sensazione che gli amici mi stiano dando molto. __
41. Di solito mi pongo degli obiettivi, ma ora fare ciò mi sembra una perdita di tempo. __
42. Molte volte non mi sento soddisfatta dei risultati ottenuti nella mia vita. __
43. E' più importante per me conciliarmi con gli altri piuttosto che restare isolata sui miei principi. __
44. Trovo che sia stressante non essere all'altezza delle cose che devo compiere ogni giorno. __
45. Col tempo ho acquisito molta consapevolezza che mi ha permesso di diventare una persona più forte e capace. __
46. Mi sembra che la maggior parte delle altre persone abbia più amici di me. __
47. Mi piace fare progetti per il futuro e lavorare perché essi si possano realizzare. __
48. Il più delle volte mi sento orgogliosa di chi sono e della vita che conduco. __
49. Ho fiducia nelle mie opinioni anche se esse sono contrarie a quelle degli altri. __
50. Sono abile a gestire il tempo, cosicché posso adattarmi a tutte le cose che devono essere fatte. __
51. Ho la sensazione di essere "cresciuta" molto come persona col passare del tempo. __
52. La gente mi descriverebbe come una persona disponibile, pronta a condividere il mio tempo con gli altri. __
53. Invidio molte persone per la vita che conducono. __
54. Sono una persona attiva nel mettere in pratica i progetti che mi sono prefissata. __
55. Per me è difficile esprimere le mie opinioni su questioni controverse. __
56. La mia vita quotidiana è molto impegnata, ma provo un senso di soddisfazione nell'essere all'altezza della situazione. __
57. Non mi piace trovarmi in nuove situazioni che esigono da me un cambiamento dei miei vecchi modi di fare. __
58. Non ho avuto esperienza di molte relazioni calorose e di fiducia con gli altri. __
59. Alcune persone sono senza progetti, ma io non sono una di quelle. __
60. L'atteggiamento che ho nei miei confronti forse non è così positivo come quello che gli altri hanno verso se stessi. __
61. Spesso cambio parere se i miei amici o familiari sono d'accordo. __
62. Mi sento frustrata quando cerco di pianificare le mie attività quotidiane perché non porto mai a termine le cose che mi propongo di compiere. __
63. Per me la vita è stata un continuo processo di apprendimento, cambiamento e crescita. __
64. Non mi faccio coinvolgere più di tanto quando inizio un'amicizia. __
65. A volte ho la sensazione di aver fatto tutto quello che si poteva fare. __
66. Molti giorni mi sveglio con un sentimento di scoraggiamento per quello che ho vissuto. __
67. Non sono il tipo di persona che cedendo alle pressioni degli altri si fa influenzare nel modo di pensare o di agire. __
68. I miei sforzi per trovare i tipi di attività e le relazioni di cui ho bisogno sono del tutto riusciti. __
69. Sono contenta che le mie vedute siano cambiate e maturate col tempo. __
70. So che mi posso fidare dei miei amici ed essi sanno che possono fidarsi di me. __

71. I miei progetti di vita sono stati più una fonte di soddisfazione che di frustrazione. __
72. Il passato ha avuto i suoi alti e bassi, ma in generale non vorrei cambiarlo. __
73. Sono preoccupata di come altre persone valutano le mie scelte di vita. __
74. Ho difficolt6à a programmare la mia vita in modo soddisfacente. __
75. Ho rinunciato a grossi miglioramenti o cambiamenti nella mia vita già da molto tempo. __
76. Trovo difficile aprirmi quando parlo con gli altri. __
77. Trovo soddisfazione nel pensare a quello che sono riuscita a fare nella vita. __
78. Quando mi confronto con amici e familiari sono soddisfatta per quella che sono. __
79. Giudico me stessa secondo ciò che penso sia importante e non per ciò che gli altri pensano sia importante. __
80. Sono stata capace di costruirmi una casa e uno stile di vita che mi soddisfa. __
81. C'è del vero nel detto che il lupo perde il pelo ma non il vizio. __
82. Partecipo ai problemi dei miei amici così come loro partecipano ai miei. __
83. In definitiva non sono sicura che la mia vita abbia molto significato. __
84. Ognuno ha le proprie debolezze, ma a me sembra di averne più del dovuto. __

Appendix 5. Regulatory Emotional Self-Efficacy Scale (RESE)

Le affermazioni del questionario descrivono alcune situazioni che possono essere difficili da affrontare. Legga attentamente ogni affermazione e indichi quanto si sente capace di affrontare ciascuna situazione descritta, mettendo una crocetta sul numero corrispondente alla sua esperienza.

PER NULLA CAPACE 1	POCO CAPACE 2	MEDIAMENTE CAPACE 3	MOLTO CAPACE 4	DEL TUTTO CAPACE 5

1	Esprimere pienamente la sua felicità quando le succede qualcosa di bello	1	2	3	4	5
2	Godere pienamente di un buon risultato raggiunto	1	2	3	4	5
3	Manifestare apertamente la sua soddisfazione quando raggiunge gli obiettivi che si è proposta	1	2	3	4	5
4	Esprimere liberamente il suo entusiasmo in occasione di feste e incontri con gli amici	1	2	3	4	5
5	Non avvilirsi troppo quando viene seriamente criticata	1	2	3	4	5
6	Evitare di deprimersi quando è sola	1	2	3	4	5
7	Evitare di scoraggiarsi di fronte alle avversità	1	2	3	4	5
8	Superare la frustrazione se gli altri non l'apprezzano come vorrebbe	1	2	3	4	5
9	Dominare la rabbia quando gli altri la trattano male ingiustamente	1	2	3	4	5
10	Non perdere il controllo delle sue azioni quando è molto arrabbiata	1	2	3	4	5
11	Superare rapidamente l'irritazione per i torti subiti	1	2	3	4	5
12	Dominare la rabbia quando è stata rifiutata inaspettatamente	1	2	3	4	5
13	Non farsi sopraffare dalla paura quando viene minacciata	1	2	3	4	5
14	Dominare il panico, mantenendosi lucida, in presenza di situazioni pericolose	1	2	3	4	5
15	Mantenere la calma in situazioni in cui molti altri hanno paura	1	2	3	4	5
16	Superare la paura di essere abbandonata nei momenti in cui si trova in difficoltà	1	2	3	4	5

Appendix 6. Experience Sampling Method (ESM)

Data_____ Ora della chiamata _____ Ora della compilazione _____

QUANDO SEI STATA CHIAMATA:

A che cosa stavi pensando?_____

_____

Dove eri?_____

Qual'era la cosa principale che stavi facendo? _____

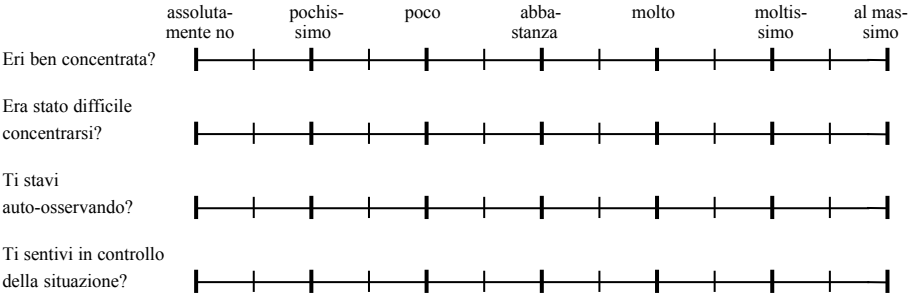
_____

(***)_____

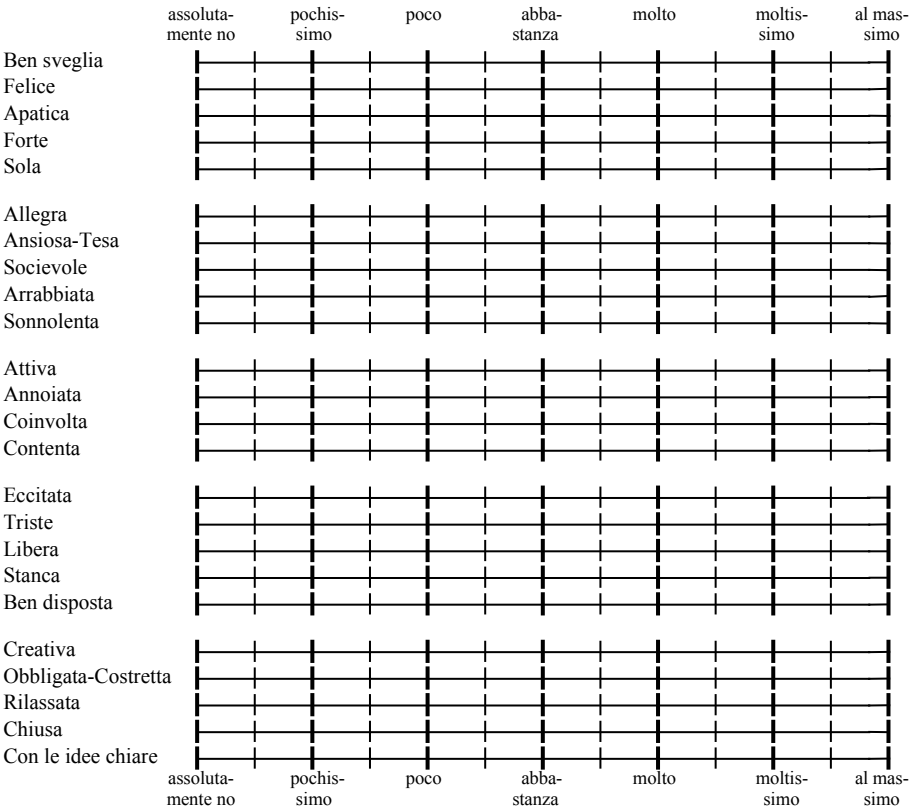
Perché facevi ciò? Perché lo volevi fare ( ) Perché lo dovevi fare ( )
Perché non c'era nient'altro da fare ( )

Quali altre cose stavi facendo? _____

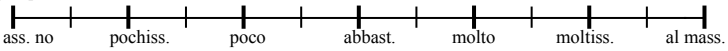
_____



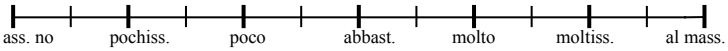
Descrivi come ti sentivi al momento della chiamata:



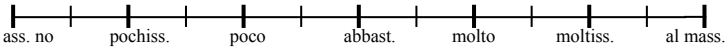
L'attività che stavi svolgendo era per te stimolante e rappresentava un'occasione e un impegno per esprimerti ed agire?



Considerando le tue abilità e capacità personali, eri in grado di far fronte alla situazione?

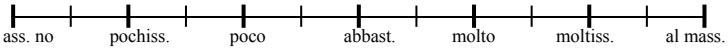


Avresti preferito fare qualcosa d'altro?



Che cosa?_____

C'era qualcosa d'importante in gioco per te nell'attività?

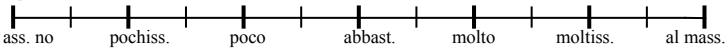


Che cosa?_____

QUANDO SEI STATA CHIAMATA:

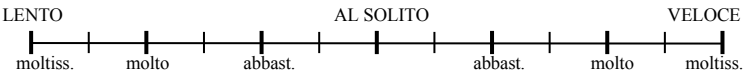
Con chi eri?_____

Avresti voluto essere con qualcun altro?

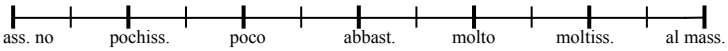


Con chi?_____

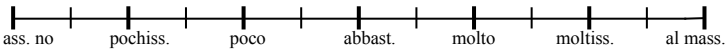
Il tempo stava passando:



Ti sentivi soddisfatta con te stessa?

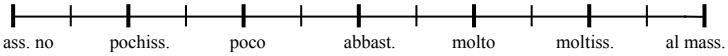


Avresti voluto essere in un altro luogo?



Dove?_____

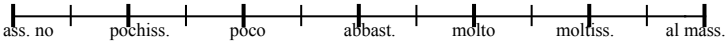
Provavi qualche sensazione fisica particolare?



Quale/i?_____

Era una sensazione: piacevole ( ) spiacevole ( )

L'attività che stavi svolgendo era importante in funzione di qualche tuo obiettivo generale di vita?



Quale/i?_____

RIPENSA AL TEMPO TRASCORSO TRA QUESTA CHIAMATA E LA PRECEDENTE:

E' successo o hai fatto qualcosa che ha influenzato il tuo stato d'animo attuale? Che cosa?_____

Era un fatto: positivo ( ) negativo ( )

Appendix 7. Average experience in Channel 1 (Arousal) at each time point.

Average experience in Channel 1 (Arousal) at each time point.

	Channel 1 Arousal							
	T1		T2		T3		T4	
	M	SD	M	SD	M	SD	M	SD
Challenges	1.24***	0.52	1.26***	0.63	1.7***	0.76	1.37***	0.76
Skills	0.19***	0.24	0.08	0.36	0.08	0.43	0.25***	0.26
Concentration	0.44***	0.84	0.36***	0.84	0.16	1.07	0.33**	0.89
In control	0.26**	0.77	0.21*	0.78	0.15	1.07	0.32**	1.03
Happy	0.33***	0.82	0.28**	0.87	0.42*	1.23	0.43**	1.15
Strong	0.29**	1.01	-0.01	0.86	0.34	1.02	0.25*	0.89
Active	0.33***	0.86	0.22*	0.95	0.14	1.02	0.35**	0.77
Involved	0.53***	0.84	0.39***	0.82	0.43*	1.22	0.44***	0.85
Obliged	-0.29***	0.67	-0.14	0.92	-0.1	0.66	-0.1	0.7
Relaxed	0.26**	0.85	0.18	0.84	0.17	0.98	0.17	0.8
Wish to do the act.	0.47***	0.65	0.24*	0.86	0.42***	0.44	0.31***	0.73
Stake	0.54***	1.11	0.39***	0.95	0.9***	1.3	0.72***	1.18
Goals	0.51***	1.16	0.48***	0.95	0.8**	1.57	0.7***	1.25
N. Observations	**95**		**80**		**36**		**76**	

Note: *=p<.05; **=p<.01; ***=p<.001

Appendix 8. Average experience in Channel 2 (Optimal Experience) at each time point.

Average experience in Channel 2 (Optimal Experience) at each time point.

	Channel 2 Optimal Experience							
	T1		T2		T3		T4	
	M	SD	M	SD	M	SD	M	SD
Challenges	1.07***	0.55	1.08***	0.47	0.94***	0.48	0.86***	0.44
Skills	0.95***	0.54	0.93***	0.41	0.78***	0.41	0.78***	0.36
Concentration	0.62***	0.78	0.51***	0.83	0.34**	1	0.18	0.96
In control	0.63***	0.8	0.53***	0.87	0.44***	0.97	0.4***	0.84
Happy	0.45***	0.9	0.55***	0.96	0.37**	1.06	0.4***	0.75
Strong	0.62***	0.8	0.48***	0.82	0.38**	1.1	0.49***	0.82
Active	0.57***	0.7	0.48***	0.78	0.31**	0.95	0.31**	0.89
Involved	0.54***	0.77	0.49***	0.82	0.33**	0.9	0.36**	0.95
Obliged	-0.13	0.86	-0.32***	0.68	-0.32***	0.78	-0.36***	0.69
Relaxed	0.21*	0.9	0.28**	0.93	0.31**	0.95	0.48***	0.88
Wish to do the act.	0.33***	0.79	0.43***	0.62	0.46***	0.7	0.29**	0.77
Stake	0.46***	1	0.67***	0.9	0.53***	0.86	0.31**	0.91
Goals	0.4***	0.93	0.55***	0.87	0.4**	1.07	0.24*	0.86
N. Observations	**110**		**104**		**82**		**76**	

Note: *=p<.05; **=p<.01; ***=p<.001

Appendix 9. Average experience in Channel 3 (Control) at each time point.

Table 37. Average experience in Channel 3 (Control) at each time point.

	Channel 3 Control							
	T1		T2		T3		T4	
	M	SD	M	SD	M	SD	M	SD
Challenges	-0.02	0.29	-0.10**	0.27	-0.06***	0.35	-0.14**	0.28
Skills	0.89***	0.51	1.09***	0.51	1.25	0.48	1.16***	0.75
Concentration	0.08	1.10	0.20	0.82	0.17	1.00	0.30	1.07
In control	0.59***	0.93	0.29**	0.69	0.25*	0.90	0.32*	0.82
Happy	0.30*	0.90	0.06	0.81	0.06	0.96	0.04	0.90
Strong	0.40**	0.96	0.15	0.95	0.25	0.98	0.20	0.97
Active	0.24	1.13	0.33**	0.92	0.28*	0.92	0.42**	0.80
Involved	0.30	1.05	0.21	0.90	0.29*	0.92	-0.01	0.82
Obliged	-0.27*	0.77	-0.02	0.68	-0.05	0.94	-0.07	0.96
Relaxed	0.26	1.05	-0.02	0.88	0.12	0.98	0.06	0.89
Wish to do the act.	0.04	0.83	0.01	1.04	-0.09	1.10	-0.17	1.05
Stake	-0.29*	0.95	0.01	0.95	0.13	0.89	-0.17	0.88
Goals	-0.04	0.86	-0.04	0.57	0.18	0.76	-0.02	0.89
N. Observations	**48**		**66**		**52**		**43**	

Note: *=p<.05; **=p<.01; ***=p<.001

Appendix 10. Average experience in Channel 4 (Relaxation) at each time point.

Average experience in Channel 4 (Relaxation) at each time point.

	Channel 4 Relaxation							
	T1		T2		T3		T4	
	M	SD	M	SD	M	SD	M	SD
Challenges	-0.73***	0.44	-0.70***	0.30	-0.56***	0.35	-0.69***	0.26
Skills	0.71***	0.55	0.76***	0.36	0.59***	0.27	0.67***	0.45
Concentration	-0.22**	0.92	-0.08	0.97	-0.08	0.86	-0.16	0.91
In control	0.22**	0.75	0.16	0.95	0.12	0.96	0.07	0.89
Happy	-0.07	0.83	-0.04	0.88	-0.02	0.84	-0.18	1.03
Strong	-0.06	0.84	0.10	0.99	-0.02	0.86	-0.05	1.00
Active	-0.01	0.93	0.02	1.05	0.10	1.02	0.02	1.06
Involved	-0.09	0.90	-0.23	1.02	-0.07	0.89	-0.19	1.01
Obliged	0.11	1.00	0.20*	0.94	0.06	0.98	-0.02	0.89
Relaxed	-0.02	0.99	0.03	1.09	0.06	1.00	-0.02	0.94
Wish to do the act.	-0.31**	1.09	-0.19***	1.07	-0.17	1.07	-0.11	0.97
Stake	-0.27**	0.91	-0.33	0.79	-0.27***	0.79	-0.18*	0.77
Goals	-0.15	0.98	-0.34***	0.75	-0.28***	0.79	-0.23**	0.64
N. Observations	**122**		**112**		**124**		**77**	

Note: *=p<.05; **=p<.01; ***=p<.001

Appendix 11. Average experience in Channel 5 (Boredom) at each time point.

Average experience in Channel 5 (Boredom) at each time point.

	Channel 5 Boredom							
	T1		T2		T3		T4	
	M	SD	M	SD	M	SD	M	SD
Challenges	-0.96***	0.30	-1.01***	0.48	-1.27***	0.64	-0.79***	0.61
Skills	0.13***	0.26	0.13***	0.24	-0.01	0.37	0.15***	0.20
Concentration	-0.39***	0.88	-0.49***	0.96	-0.21	0.85	-0.17*	0.77
In control	-0.20	0.91	-0.12	0.92	-0.13	0.85	-0.17	0.96
Happy	-0.18	0.97	-0.17	1.02	-0.20	0.98	-0.10	0.89
Strong	-0.14	0.92	0.04	0.97	-0.11	1.01	-0.05	0.92
Active	-0.36**	1.10	-0.24*	0.93	-0.36*	0.89	-0.28*	1.09
Involved	-0.57***	0.92	-0.35**	1.02	-0.44*	1.11	-0.20	1.11
Obliged	0.02	0.96	-0.05	0.99	0.14	1.14	0.07	0.82
Relaxed	0.02	0.95	0.01	1.09	-0.01	1.03	-0.16	0.99
Wish to do the act.	-0.04	0.99	-0.10	1.04	-0.41*	1.29	-0.15	1.14
Stake	-0.45***	0.86	-0.52***	0.97	-0.45**	0.97	-0.40***	0.87
Goals	-0.24*	0.97	-0.54***	0.83	-0.43**	0.89	-0.41***	0.86
N. Observations	**84**		**71**		**44**		**98**	

Note: *=p<.05; **=p<.01; ***=p<.001

Appendix 12. Average experience in Channel 6 (Apathy) at each time point.

Average experience in Channel 6 (Apathy) at each time point.

	Channel 6 Apathy							
	T1		T2		T3		T4	
	M	SD	M	SD	M	SD	M	SD
Challenges	-0.86***	0.41	-0.78***	0.36	-0.64***	0.33	-0.80***	0.49
Skills	-0.86***	0.52	-0.86***	0.49	-0.81***	0.38	-0.95***	0.54
Concentration	-0.25**	0.96	-0.40***	0.91	-0.28**	0.88	-0.37**	0.99
In control	-0.49***	0.88	-0.46***	1.00	-0.31***	0.84	-0.51***	1.04
Happy	-0.23*	1.06	-0.37***	1.00	-0.30***	0.84	-0.44***	1.00
Strong	-0.44***	1.02	-0.46***	1.06	-0.30**	0.92	-0.54***	1.11
Active	-0.35***	0.96	-0.46***	1.04	-0.25**	0.88	-0.41***	0.93
Involved	-0.34***	1.00	-0.37***	0.99	-0.38***	0.89	-0.30**	0.85
Obliged	0.20*	1.02	0.22*	1.04	0.20	1.00	0.35**	1.02
Relaxed	-0.27**	1.02	-0.31***	0.93	-0.24**	0.88	-0.26*	1.06
Wish to do the act.	-0.23*	1.08	-0.21*	1.04	-0.23*	0.98	-0.13	1.05
Stake	-0.32***	0.70	-0.34***	0.74	-0.38***	0.80	-0.26**	0.83
Goals	-0.42***	0.74	-0.27***	0.72	-0.35***	0.56	-0.07	0.91
N. Observations	**126**		**128**		**98**		**85**	

Note: *=p<.05; **=p<.01; ***=p<.001

Appendix 13. Average experience in Channel 7 (Worry) at each time point.

Average experience in Channel 7 (Worry) at each time point.

	Channel 7 Worry							
	T1		T2		T3		T4	
	M	SD	M	SD	M	SD	M	SD
Challenges	-0.16**	0.41	-0.09*	0.34	-0.05	0.33	0.05	0.34
Skills	-1.47***	0.99	-1.32***	0.81	-1.38***	1.09	-1.49***	1.01
Concentration	-0.46***	0.97	-0.12	1.06	-0.24	1.06	-0.02	0.81
In control	-0.73***	1.23	-0.45***	1.08	-0.39**	1.04	-0.34**	0.84
Happy	-0.55***	1.07	-0.29**	1.01	-0.15	1.01	-0.03	0.80
Strong	-0.47***	0.96	-0.19*	0.89	-0.34*	0.97	-0.28*	0.78
Active	-0.45***	0.91	-0.24*	0.86	-0.34*	1.11	-0.19	0.97
Involved	-0.42***	0.89	-0.15	0.95	-0.17	0.95	-0.16	0.84
Obliged	0.12	0.94	0.08	0.93	0.12	1.02	0.25	1.10
Relaxed	-0.23	1.16	-0.21	0.99	-0.26	1.04	-0.33*	0.96
Wish to do the act.	-0.16	1.11	-0.15	1.07	-0.07	0.95	-0.27	1.09
Stake	-0.02	0.88	-0.06	0.87	-0.15	0.82	-0.11	0.75
Goals	-0.20*	0.78	-0.05	0.48	-0.06	0.84	-0.25*	0.82
N. Observations	**70**		**87**		**53**		**51**	

Note: *=p<.05; **=p<.01; ***=p<.001

Appendix 14. Average experience in Channel 8 (Anxiety) at each time point.

Average experience in Channel 8 (Anxiety) at each time point.

	Channel 8 Anxiety							
	T1		T2		T3		T4	
	M	SD	M	SD	M	SD	M	SD
Challenges	0.88***	0.44	1.00***	0.49	0.97***	0.61	0.95***	0.50
Skills	-0.85***	0.36	-0.85***	0.45	-0.90***	0.52	-1.11***	0.59
Concentration	0.15	0.94	0.18	1.05	0.27*	0.96	0.26	0.91
In control	-0.32**	0.81	-0.07	0.97	-0.22*	0.83	0.11	0.87
Happy	-0.05	0.96	0.10	0.90	0.00	0.82	-0.05	0.84
Strong	-0.13	0.77	0.03	0.99	-0.01	0.83	0.13	0.86
Active	0.04	0.87	0.10	0.83	0.04	0.83	0.10	0.75
Involved	0.11	0.84	0.26*	0.82	0.27*	0.86	0.23	0.70
Obliged	0.10	0.93	0.10	1.05	-0.12	0.77	-0.27	0.64
Relaxed	-0.15	0.82	0.20	0.96	-0.12	0.93	0.11	0.93
Wish to do the act.	-0.01	0.85	0.08	0.80	0.29***	0.61	0.27	0.67
Stake	0.37**	0.89	0.39*	1.10	0.30*	0.92	0.28	0.93
Goals	0.30*	0.95	0.45**	1.16	0.38**	0.96	0.18	0.85
N. Observations	**62**		**52**		**58**		**34**	

Note: *=p<.05; **=p<.01; ***=p<.001