

1 Introduction

Pregnancy, delivery and the first weeks after childbirth are still the most wonderful, intensive and fascinating events we know. Particularly in the civilised countries, where most existential or even life-threatening events in which we would face our physical and psychological limits are experienced only rarely or avoided altogether, pregnancy and delivery are still such exceptional events. During pregnancy, delivery and the weeks and months after childbirth, great efforts of physical and psychological adaptation are demanded of a woman. The biological processes are closely connected to the psychological processes taking place during this time. Considering these great changes in the physical and psychological state of women and in the normal routine of her life, the highly emotional character of the event and its demands in terms of coping and assimilative processes, pregnancy, delivery and childbed can be regarded as a critical life event or normative developmental crisis. Such life events, even though in the case of pregnancy and childbirth they are often wished or even longed for, are always potential destabilizing factors with the corresponding consequences for the somatic and psychological health of the mother. Problems can arise during all phases of pregnancy, delivery and during the postpartum time. Until the three last decades, the problems were seen mainly in terms of somatic problems of the mother and the child. Psychological problems or psychiatric disorders - except for psychoses - of the mother pre-, peri- or postpartum were not given a great deal of attention. Although in the last few years, the knowledge about these problems has grown, some aspects are still not well studied or documented. One aspect is that childbirth can be experienced as traumatic by some women, who can develop posttraumatic stress symptoms as a consequence. Another aspect refers to the possibility that women may develop more than one psychiatric disorder after childbirth. Furthermore, the subjective quality of life, whether a woman is satisfied with her life or to what extent she desires changes in certain parts of her life, has been investigated only rarely during pregnancy and postpartum.

The present work consists of three parts: The first part is a literature review about pregnancy, delivery and childbed from three selected perspectives. The first perspective is a medical and biological one, providing some basic information on biological processes and medical aspects. The second perspective is a developmental psychological view on the transition to motherhood. It refers mainly to the psychological research of critical life events, with a transfer of the results to childbirth

as a life event and an examination of the meaning of childbirth for subjective quality of life. Following this information on medical and psychological aspects about the general course of pregnancy, delivery and the first weeks postpartum, the third perspective explored is a clinical psychological one, which focuses on psychological problems and psychiatric disorders during pregnancy and after childbirth such as prepartum psychiatric disorders, postpartum blues, postpartum depression, posttraumatic stress disorder and postpartum psychoses. For each of the psychiatric disorders, a literature review about diagnosis, epidemiology, etiology and therapy is given. As the empirical part of the present work focuses mainly on psychological and psychiatric problems after childbirth, this third perspective is the core part of the theoretical work. The theoretical part finishes with a summary and conclusions combining the three perspectives and formulating a basis for the empirical work. The second part of the work contains the descriptions of the two empirical studies including introduction, methods, data analysis, results and discussion. The first empirical work is titled: "Depressive symptoms and symptoms of posttraumatic stress disorder in women after childbirth". The second study is about the "subjective quality of life of women during late pregnancy and 6 months after childbirth". The final section includes a summary of the empirical studies and a discussion of the approach and the methods used in the empirical studies. Finally, clinical implications of the findings and directions for future research are discussed.

2 Theoretical and empirical background

2.1 Medical aspects of pregnancy, delivery and childbed

In this chapter, a short overview of biological and medical aspects of pregnancy, delivery and childbed is given. Although the main focus of this work is a psychological and especially clinical psychological one, the biological and medical aspects cannot be disregarded. The psychological processes are very closely related to the biological mechanisms and changes of a woman's body during pregnancy, childbirth and postpartum. If no literature references are made, the content of the following chapters is taken from Diedrich (2000).

2.1.1 Pregnancy

The duration of pregnancy after conception is 267 days, or 38 weeks or 9 1/2 lunar months (à 28 days) with a fluctuation of +/- 7.6 days. As most women do not know the day of conception, the state of gestation and the expected day of delivery is calculated from the first day of the last menses. Provided that the menstrual cycle is 28 days, the duration of pregnancy is 281 days, 40 weeks or 10 lunar months with a fluctuation of 12.7 days. It is also customary to divide the pregnancy into three periods: the first trimester (1st - 13th week of gestation), the second trimester (14th - 26th week of gestation) and the third trimester (27th - 39th week of gestation).

After the fertilization of the ovum by a spermium, the germ cell roams through the oviduct. The blastocyst reaches the endometrium, the nidation takes place and the placenta formation starts. The placenta is mature after the third month of gestation. The placenta serves purposes of nutrition and oxygen supply of the foetus, and the transport of the foetal metabolism products and hormone production. During the formation of the placenta, the most important organ systems of the embryo are established. After the beginning of the ninth week of gestation until the birth, the growing organism is called a foetus. The foetus is surrounded by three foetal membranes, the amnion, the chorion and the dezidua. These three membranes are connected with each other and together build the bag of waters that encloses the amniotic fluid and the foetus.

These processes and the optimal provision of the developing embryo and the growing foetus require a great deal of physiological processes of adaptation of the maternal body. Some important changes are, for example, an increase in ventilation, an

increase in the cardiac output per minute, changes of blood pressure, of the renal blood flow, an increase in the plasma volume, a change of the maternal metabolism, an increase in the entire body fluid, in the entire vascular resistance and the osmolality. Closely related to these changes are the changes in the hormone concentrations. During the first weeks of pregnancy, the corpus luteum of the maternal ovary produces progesterone and estradiol in order to preserve the pregnancy. Its activity decreases during pregnancy and ends around the 20th week of gestation. The foetal and the maternal adrenal cortex produce DHEA (dehydroepiandrosterone). The production of DHEA as well as the activity of the corpus luteum is controlled by the hormone HCG (human chorionic gonadotropin), which is produced by the placenta in high quantity with the peak about the 8th week of pregnancy. In later pregnancy, the placenta produces estradiol and progesterone with rising concentrations during the course of pregnancy.

In order to minimize risks for the pregnant woman and the foetus by detecting deviations of the foetal development or disorders in the woman, preventive examinations are usually carried out. The recommended intervals of prenatal care are as follows: during the first 4 months every 4 weeks, in the following 3 months every 3 weeks, during the following two months every two weeks and during the last month of gestation every week. The preventive examinations involve the examination of pressure, increase in weight, edema and varicosis, midstream urine (proteins, glucose, leucocytes, nitrite, ketone, and bacteriological examination) and a blood count (haemoglobin, thrombocytes). An examination of antibodies should take place in women who are not immune to rubella, in rhesus-negative pregnant women and in women at risk with regard to the hepatitis B surface antigen. Further examinations are diabetes screening, ultra sound, vaginal examination, control of foetal vitality and foetal movement by antepartual cardiotocography and other methods depending on specific indications.

Maternal risks and diseases during pregnancy are, for example, maternal age over 35 with an increased risk of foetal chromosomal disorders and maternal age under 16 years with higher psychosocial problems. Typical pregnancy-related problems are nausea and emesis, with hyperemesis gravidarum being a psychosomatic disease that often requires medical and psychological intervention. Endocrinological maternal diseases that need to be treated are gestational diabetes, diseases of the thyroid, of the adrenal cortex and of the hypophysis. Other diseases are immunological diseases, cardiovascular diseases, and hypertensive diseases, as well as diseases of the urinary tract, gastrointestinal diseases, diseases of the pancreas, malign diseases and

dermatological diseases. The main medical problem of early pregnancy is abortion and gravidity outside the uterus. The main medical problems of late pregnancy are preterm delivery and babies who are “small for date” because of intrauterine malnutrition, babies with low weight, intrauterine death of the foetus and prolonged gestation.

2.1.2 Delivery

The birth of a child can be described as a process that lasts for several hours. Through regular labour, the cervical tissue opens and the child leaves the uterus and the birth canal. The delivery is concluded by the detachment of the placenta. The course of the delivery is dependent on several variables: The form and width of the birth canal, the size and width of the infant’s head, and the labour.

The *birth canal*, which has to be passed by the child during birth, is formed by the bony pelvis and the terminal portion of the birth canal. The form and width of the maternal pelvis can be different; the optimum form for delivery is called the gynaecoid pelvis, with an almost round pelvis inlet and a wide pelvis outlet. The line connecting all straight diameters of the pelvis is called the axis of the birth canal and describes the path the infant’s head has to take from the pelvic inlet to the pelvic outlet.

The size and the width of the *infant’s head* is a very important variable, because it is the part of the child with the biggest size and the least capacity to shape. Most children are delivered in cephalic presentation, with the head first. With regard to the course of delivery, it is important that the head of the child can adapt to the form of the maternal pelvis by changes of posture and rotations.

The contractions of the uterus musculature are called *labour*. These contractions are responsible for the opening of the cervical tissue, the child’s passage through the birth canal and the detachment of the placenta. Different types of contractions can be distinguished: The contractions during pregnancy, called *Braxton-Hicks contractions*, increase the blood circulation of the placenta. At the end of the pregnancy, *premonitory pains* have the task of preparing the cervix for the delivery, and *false pains* lead the infant’s head deeper into the maternal pelvis. The *first stage pains* start the delivery. They are triggered by several variables: hormonal foetal and maternal factors (oxytocin, prostaglandine, oestrogen, and progesterone), adrenalin and noradrenalin, as well as mechanical factors. The first stage pains lead to a further dilatation of the cervix. The frequency of these pains is about 5 to 20 contractions per hour, with a length of 30 - 60

seconds. When the cervical tissue is opened completely, the contractions become more frequent and stronger and with the front part of the child reaching the cervical tissue, *the expulsive pains* start. These contractions, with the help of the mother who presses the child below after a deep breath with her abdominal musculature and the pelvic floor cause the child to leave the birth canal. After the birth of the child, the *postpartum contractions* start and cause the detachment of the placenta. The *after pains* during the first 2 to 3 days postpartum are contractions that support the involution of the uterus and prevent the loss of too much blood by compressing the blood vessels. Corresponding to the different forms of labour pains, the course of delivery is divided into three periods: *the period of dilatation, the expulsion period and the afterbirth.*

In the case of danger for the mother or the child during the birth, it might be necessary to finish the delivery as quickly as possible. Depending on the situation, different forms of operative interventions are available. The *vaginal operative methods*: vacuum extraction and forceps extraction and the *abdominal operative* form of delivery: caesarean section.

Vaginal operative methods can be used in dangerous situations during delivery under the condition that the cervix tissue is opened completely, that the child is already deeply in the maternal pelvis and that there is no disproportion between the infant's head and the mother's pelvis. The *vacuum extraction* is recommended if the expulsion period needs to be accelerated but there is no acute emergency situation. First, the vacuum extractor is induced and placed on the infant's head. With the electric vacuum pump, a hypotension is produced and slowly increased and then the head of the child can be extracted in synchrony with the maternal uterus contractions. The delivery is finished manually. The *forceps extraction* has the same indications and conditions as the vacuum extraction, with the difference that forceps needs less time but more experience on the part of the operator and is possible to use if the child is lying with its face upwards. There are several forceps models, but all consist of two spoons and a lock that brings together the two forceps spoons. The spoons are introduced into the vagina in succession and laid on the infant's head. The forceps are then locked and the child can be extracted.

According to the point of time of the operation, a distinction can be made between the *primary caesarean section* or elective caesarean section before or directly after the beginning of contractions and the *secondary caesarean section* during the course of delivery (sub partu). Indications for the primary caesarean section are, for example,

preterm delivery, breech presentation, foetal malformation, disproportion between the infant's head and the mother's pelvis, multiple operations of the uterus, and maternal diseases. Indications for the secondary section are foetal distress, vaginal bleeding, premature detachment of the placenta, infection, and standstill of the delivery. The caesarean section consists of several phases: the opening of the abdominal wall, the extraction of the child, the detachment of the placenta and the closing of the abdominal wall. The frequency of the section has increased steadily up to 15 - 17% in Germany, and up to 25% in the USA. However, despite better techniques, the caesarean section still is a serious operative intervention with the possibility of complications especially for the mother and should only be carried out after strong indication.

2.1.3 Childbed

The childbed of a woman starts after childbirth and ends 6 to 8 weeks postpartum. This time is characterized by several involution processes, endocrinological changes and adjustment of the cardiovascular system.

The involution processes firstly entail the involution of the uterus. The contractions of the myometrium after the delivery lead to a decreasing of the uterus and prevent the loss of too much blood by compressing the blood vessels. During the first week postpartum, the uterus decreases to 50%. After 6 weeks, it has reached the size before the pregnancy. The lochia consist mainly of blood, especially during the first week, and further of leftovers of the foetal membranes, leukocytes, lymph, cervical mucus, and bacteria. Other involution processes concern the cervix, the vagina and the pelvic floor. If there have been no further complications or injuries during delivery, the involution processes are finished 6 to 10 weeks after delivery.

The endocrinological changes take place very quickly after the delivery. Once the placenta is detached, the levels of the placenta hormones HCG, estradiol and progesterone decline rapidly. This decline stimulates the start of lactation. When the child begins sucking at the maternal breast, the hormones prolactin and oxytocin are produced and set free. Both of these hormones are responsible for the lactation working and adapting to the needs of the baby. The milk during the first 3 days is called colostrum and contains proteins, fat, vitamin C, leukocytes and isoantibodies. After the third or fourth day postpartum, the definitive milk production starts.

2.2 Psychological aspects of pregnancy, delivery and childbed: Transition to parenthood as a critical life event

After the biological and medical aspects of pregnancy, childbirth and childbed, a psychological, mainly developmental psychological view will be taken on the transition to motherhood. Naturally, there are several other perspectives and theories about pregnancy, delivery and early motherhood such as the psychoanalytic theories, ethologic, systemic and family-psychological theories and others. For this mainly clinical psychological work, a theoretical framework with a developmental psychological perspective, within the concept of critical life events, has been chosen. This approach seems to be helpful for gaining a more extensive picture of the transition to motherhood and to integrate and gain a better understanding of the results of clinical psychological research.

The following chapter includes an introduction to the life event research, the transfer of this perspective to the birth of a child as a critical life event with an overview of research results in this area and a summary of a specific developmental psychological concept for the transition to parenthood. Finally, an examination of the concept of quality of life will be carried out with particular regard to young motherhood.

2.2.1 Life event research

The concept of critical life events is based on the observation that specific events in a person's life can disrupt the normal routine of life, can demand greater efforts of adaptation and have a major influence on a person's future life. There are several different approaches within the life event research. According to Filipp (1995), a consensus within the literature is the definition that life events are real life experiences with a special affective response, which the person experiences as a cut in normal routine life and are very often retrospectively viewed as disruptions or transitions in one's life course. Examples of critical life events are marriage, divorce, birth of a child, death of a spouse, natural disasters, disease or becoming unemployed.

Being confronted with a life event can change the situation of a person's life deeply for a longer period of time, but it does not necessarily have a pathogenic effect on the person's life and health. From a developmental psychological perspective, important

life events can have a destabilizing effect on the fit of person and environment - an imbalance between the demands of the environment and the possibilities and capabilities of adapting to a person's new situation. The situation is experienced as a crisis, with a highly affective importance to the afflicted person. On the other hand, life events can be seen and experienced as an opportunity for development if the person is able to reach an even better person-environment fit than before or increase her capabilities and possibilities.

A life event per se is of small predictive value in terms of a person's reaction. Different authors have emphasized that many variables influence the consequences of a critical life event. Analysing critical life events is possible, for example, with the help of a process model by Filipp (1995), which systematically categorises different important variables. Important interacting variables in this model are (1) *advancing conditions* (e.g. anticipating socialisation, prior experiences with critical life events and prior coping experiences), (2) *concurrent conditions* (characteristics of the person, i.e. aims, health, age, knowledge, self-confidence, cognitions and the situation such as political and economic conditions, social network, family), (3) *life event* (objective and subjective characteristics of the life event, i.e. duration, controllability, degree of stress), (4) *processes of treatment and coping* (i.e. instrumental and cognitive activities, inhibition of activity) and (5) *effects of treatment and coping* (effects on the person with regard to health, self-confidence, behaviour, attitudes, aims, effects on the interaction of the person and the environment and effects on the person's context such as income, contact with other people).

As it can be seen in this model, and as described in most of the general literature on critical life events, there is some evidence that the critical potential of an event is reflected not only in the objective changes but also primarily in the subjective evaluations and explanations of these changes. According to the cognitive emotion theory, the emotional responses after a critical life event follow specific appraisals, cognitive evaluations and explanations (e.g. Lazarus, 1981; Lazarus & Folkman, 1984). In his transactional stress concept, Lazarus emphasizes the importance of cognitive appraisals. He distinguishes between three different processes of appraisal. First, the person judges a situation according to its meaning and importance for their own well-being as irrelevant, positive or threatening. If a person judges a situation as threatening, Lazarus proposes another subdivision of the appraisal into the components threat, damage and loss or provocation. This process is called *primary appraisal*. The second