

# Postpartum Depressive Disorder – Psychosomatic Aspects

## Postpartale depressive Störung – psychosomatische Aspekte



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### ABSTRACT

Postpartum depression (PPD) is the most common mental illness in mothers following the birth of a child. Since the symptoms of PPD are similar to the normal stress of healthy women following childbirth, it is often difficult for the attending gynaecologist or midwife to diagnose this illness in a timely

manner and thus initiate adequate treatment and comprehensive support for the patient. Even if there are options for a screening using evaluated questionnaires and subsequent psychotherapy and/or drug therapy in the treatment of PPD which has proven effective, it is seen that, in most treatment approaches, little consideration is given to the affect-controlled interaction and the bonding behaviour between mother and child. This article presents diagnostic measures and current therapeutic approaches as well as their integration in practice in order to achieve awareness of this topic in everyday clinical practice and show the pathways of appropriate treatment. Specific multiprofessional treatment approaches which centre on the mother-child relationship demonstrate successes with regard to depression in the mothers and also on the development of a secure mother-child bond and are thus a protective factor in the development of the affected children. The now well-known effects of PPD on the fathers as well as the negative impacts of paternal depression on child development make it clear that the treatment should not focus solely on maternal depression, but also always on the family bond between the mother, child and father in the treatment.

### ZUSAMMENFASSUNG

Eine postpartale Depression (PPD) ist die häufigste psychische Störung von Müttern im Anschluss an die Geburt eines Kindes. Da die Symptomatik der PPD der normalen Belastung gesunder Frauen nach einer Geburt ähnlich ist, besteht hier für den behandelnden Frauenarzt oder die Hebamme oftmals die Schwierigkeit, diese Erkrankung rechtzeitig zu diagnostizieren und somit eine adäquate Behandlung und umfassende Begleitung der Patientin einzuleiten. Auch wenn die Möglichkeiten eines Screenings mittels evaluierter Fragebögen und nachgewiesen wirksamer nachfolgender Psychotherapie und/oder medikamentöser Therapie in der Behandlung der PPD gegeben sind, zeigt sich, dass die affektgesteuerte Interaktion und das Bindungsverhalten zwischen Mutter und Kind in den meisten Behandlungsansätzen wenig berücksichtigt wird. Dieser Beitrag stellt Diagnostik und aktuelle therapeutische Ansätze sowie deren Integration in die Praxis dar, um eine Sensibilisierung für diese Thematik im klinischen Alltag zu erreichen und die Pfade einer adäquaten Behandlung auf-

zuzeigen. Spezifische multiprofessionelle Behandlungsansätze, welche die Mutter-Kind-Beziehung in den Mittelpunkt stellen, zeigen Erfolge in Bezug auf die Depression der Mutter ebenso wie auf die Entwicklung einer sicheren Mutter-Kind-Bindung und sind somit ein protektiver Faktor für die Entwicklung der betroffenen Kinder. Die mittlerweile bekannten Aus-

wirkungen einer PPD auf die Väter sowie die negativen Folgen einer väterlichen Depression auf die kindliche Entwicklung machen deutlich, dass die Behandlung nicht alleine die mütterliche Depression, sondern immer auch auf die familiäre Bindung zwischen Mutter, Kind und Vater in der Behandlung fokussieren sollte.

## Introduction

A pregnancy and the birth of their child is an existential experience for the vast majority of women. This start of a new stage of life along with profound changes represents a vulnerable phase with an increased need for support for the affected women and children [1, 2]. The transition to motherhood means an adjustment in the relationship with the partner to a triad and also necessitates the development of an adaptation of one's own and the child's needs. The mother's physical and mental adaptive capacity is supported hormonally in this process, however it also takes place against the backdrop of her own affectively represented biographical influences and possibly also conflictual or stressful early childhood experiences which can be reactualised within the scope of regressive processes through childbirth and breastfeeding. The adjustment is not always successful and the risk of developing psychological disorders is higher in this phase than in other periods in a woman's life [3]. In particular, there are frequently symptoms typical of depression. This overview article summarises the most important findings on this topic. Comprehensive database research was performed for this purpose. It examined the period of 2004–2017 and the search items used included the terms "postpartum depression", "postpartal depression", "postpartale Depression" and "maternity health". The search was performed in the PubMed, PsycINFO and Google Scholar databases.

In routine clinical practice, because of the positive topic of a birth and the role of the mother and the normative expectations associated with it, the psychological stress associated with the birth is rarely discussed by the physician and mother. In women with depressive disorders, the lack of the anticipated feelings of happiness after the birth of the child frequently triggers feelings of guilt and insecurities against this backdrop. One's own early childhood biographical conflicts and stresses can be reactivated in this situation. Feelings of joylessness, significant overload and helplessness are then rarely expressed, out of shame. This makes it difficult for the attending gynaecologist to diagnose a mental illness. If the mother discusses psychoreactive impairments, it is difficult to distinguish them from PPD and they are frequently initially interpreted as normal adjustment-related stress.

Mental illnesses in the mother can influence affect perception and processing and thus also the bonding behaviour and nature of the interaction between mother and child. For this reason, they also represent a possible vulnerability factor for the child as well [1, 4–6]. The child may demonstrate social, cognitive and emotional limitations years later [1]. Due to these intergenerational effects of psychological disorders, a preferably early diagnosis and the initiation of comprehensive psychosomatic treatment for the

mother and child represent a challenge for the attending physicians.

## Epidemiology of Psychological Disorders

Psychological disorders can occur in principle in any form during pregnancy and in the postpartum period. However, these disorders are not independent conditions, rather they correspond with regard to course to those of a mental illness occurring independent of a pregnancy [3, 7, 8].

### Baby blues

Depressive disorder which occurs post partum should be differentiated from what is known as "baby blues". This latter term refers to brief psychological emotional lability in the initial days following childbirth which should not be assessed as pathological but rather as a reaction to the general and hormonal postpartum adjustment. The onset is generally between the 2nd and 5th day after delivery. This reaction can last from a few hours to several days [4, 9]. Typical symptoms are a labile, subdepressive mood, frequent crying, anxieties, exhaustion, irritability, insomnia and restlessness [10]. The prevalence of baby blues in German women is indicated as being about 55% [11]. Baby blues can also occur in patients with a history of psychological disorders, however, this does not automatically mark the start of a relapse. Yet since baby blues is a risk factor for the occurrence of postpartum depression and an anxiety disorder, further emotionally sensitive treatment of these patients and their babies should be ensured [10, 11].

### Postpartum psychosis

Postpartum psychosis (PPP), by contrast, is rare: it affects only 0.1–0.2% of all mothers [2, 3]. However, postpartum psychosis is an emergency situation. There is a danger to the mother and child! If symptoms such as delusions, paranoia, hallucinations, disorders of the self or suicidal thoughts are determined (possibly with the risk of suicide and/or infanticide), immediate treatment is necessary and psychiatric treatment is to be initiated. Typically, symptoms begin rapidly after birth (within hours to a few weeks) [2, 3, 12]. Women with prior mental illnesses such as previous postpartum psychosis or bipolar disorder are more often affected. More than 25% of women with pre-existing bipolar disorder develop postpartum psychosis [13].

### Anxiety disorders

One current review estimates the prevalence of an anxiety disorder in the postpartum period at between 3.7 and 20% [14]. Anxiety and panic attacks occur more frequently as comorbid disorders with PPD, however they can also demonstrate symptoms of

an independent anxiety disorder. Symptoms such as muscular tension and inner restlessness, nervousness, tremors and worries which affect the mother's capacity and the child's well-being are common. The treatment takes place within the scope of therapy for PPD or follows the usual psychotherapeutic procedure and, if applicable, drug therapy in the case of an anxiety disorder.

### Obsessive-compulsive disorders

Obsessive-compulsive disorders are indicated in the literature as having a prevalence rate of 2.4% [15] and up to 2.7–3.9% in older works (2006) [16]. Obsessive-compulsive symptoms can also occur within the scope of PPD. Particular attention should be paid in this case to the appearance of obsessive thoughts. 40% of women with PPD indicate automatic intruding thoughts of harming their own child [16]. In contrast to the symptoms in the case of psychosis or obsessive-compulsive disorder with comorbid severe depression, there is no danger here for the mother or child. Mothers perceive the obsessive thoughts as extremely alarming and ego-dystonic (as not belong to their "ego") and experience significant feelings of guilt. Since these thoughts are very threatening for the woman and associated with shame, they are only expressed upon active questioning. Merely mentioning the topic and explaining the frequency and the fact that these thoughts are not translated into action often provides relief to patients [7]. Treatment is then also provided within the scope of antidepressant therapy; see below.

### Postpartum depression (PPD)

Data on the prevalence of PPD vary considerably in the literature [17]: e.g. 6.5 to 12.9% (even higher rates in economically weak countries) [18] up to 13–19% [17].

PPD is not listed in the ICD-10 as an independent clinical picture. It is classified according to the leading symptoms with affective or psychotic disorders. In the DSM-5, depression which occurs during pregnancy and up to four weeks post partum is classified as its own subcategory of depressive disorder. However, the possible start of postpartum depression is indicated by many authors within a period of up to 12 months after childbirth [19].

In contrast to the baby blues, which spontaneously subsides after hours to days, PPD is a longer lasting condition which, without professional help, can have far-reaching consequences for the affected mother, her baby and her family. The assumption that the withdrawal of the hormones estradiol and progesterone, which also demonstrate central anxiety-reducing and antidepressant effects, are the cause of postpartum depression could thus not be confirmed. The drop in the sex steroid hormone level does not differ from that of healthy women, however, women with postpartum depression react more sensitively to this adjustment [20].

### Diagnosis of PPD

Possible *risk factors* of PPD are depression and anxiety disorder during pregnancy, as well as critical life events and stresses during pregnancy and the early postpartum period, little social support and previous depressive episodes [12]. Further predictors include traumatic experiences or neglect in the mother's own childhood,

undesired pregnancy, domestic violence, substance abuse, traumatic childbirth experience, socioeconomic factors such as migrant status, little or no social support, as well as low satisfaction with the relationship and relationship conflicts [4, 18, 21].

Women with untreated depression during pregnancy have a 7-times greater risk of suffering from postpartum depression [16]. Therefore the diagnosis and treatment of antenatal depression is very important in the prevention of postpartum depression [18].

*Symptoms* of postpartum depression are – just as in the case of depressive disorders in general: lack of drive, anhedonia, concentration, appetite and sleep disorders, exhaustion, anxieties, extreme irritability, sadness, frequent crying, feelings of guilt, general lack of interest, inner emptiness, psychosomatic symptoms and feeling of overload [12]. Corresponding thoughts frequently relate to the situation as a mother [7, 12]. Particular attention should be paid here to suicidal thoughts and the fear of harming the child [18, 22].

Typical depressive thoughts (self-doubt, self-accusation, feelings of guilt) after childbirth are frequently put in concrete terms thematically with situational content: not meeting standards as a perfect mother, not being able to love one's own child enough, etc. [7, 12]. With regard to the mother-child interaction, this also results in the decreased capacity for empathy and a lack of emotional availability [4] which are frequently described in the literature and which demonstrate long-term negative consequences for children (see below).

The "Edinburgh Postnatal Depression Scale/EPDS" [23] (German version: [24]) has proven itself for a *screening*. This validated questionnaire is an easy-to-use screening instrument for private-practice gynaecologists and hospital physicians as well as for general practitioners and midwives as part of examinations during pregnancy as well as the initial follow-up postpartum examination. Using self-assessment questionnaires 6 weeks before as well as 6–12 weeks after delivery, the EPDS records the mood in recent weeks using 10 questions graded between 0 and 3 (such as "I was anxious and worried unnecessarily"). The evaluation is performed by adding the points and a sum of  $\geq 13$  points describes a high likelihood of depressive symptoms. Further personal diagnostic measures should be taken here by a physician specialising in psychosomatic medicine or psychiatry. The advantage of the EPDS is the rapid identification of women who have suicidal thoughts. If the mother responds to question 10: "I occasionally had thoughts of harming myself" with a value greater than zero, further clarification is needed to determine if this concerns impulsive self-harming tendencies without suicidal intent, latent or balancing world-weariness or even acute suicidal thoughts. If the addition reveals a total value of "0", a more detailed clarification should take place with regard to "socially acceptable" responses to the questions.

As a particularly low-threshold criterion, there are even just two screening questions available (according to Whooley) according to the S3 guideline of unipolar depression:

1. "In the past month, did you frequently feel depressed, sad, gloomy or hopeless?"
2. "In the past month, did you have much less desire and joy for things which you usually enjoy?"

If these questions are answered with Yes, further diagnostic measures should be initiated [25].

Current research approaches are also looking for neurobiological predictors which could detect an increased vulnerability for postpartum psychological disorders early on. New results indicate that hypoactivity of the hypothalamic-pituitary-adrenal axis exists in women with postpartum depression. In addition, the connection between chronic stress during pregnancy and postpartum depression is presumably mediated by this hypoactivity [20]. A hair steroid analysis could function as a retrospective marker for this for the detection of postpartum depression. Here, a relative deficit in hair-bound cortisone in relation to hair cortisol correlates with the degree of postpartum depression [20].

### Differential diagnoses

The physiological emotional lability (“baby blues”) must be differentiated from PPD. In the case of a positive screening, presentation for further diagnostic measures by a physician specialising in psychosomatic medicine or psychiatry is recommended. The specialist appointment differentiates adjustment disorders, affective disorders, depressive disorders within the scope of obsessive-compulsive disorder or psychosis as well as somatogenic affective disorders (for example, due to thyroid dysfunction, anaemia).

### Effects of PPD

PPD affects mothers in many different ways. The current evidence shows that untreated maternal depression can have serious and long-lasting effects: They range from a general negative impact on the child, the partner and other family members to the danger of an increased risk of recurrence, chronification and suicidality of the mother, threat to the bonding between mother and child, as well as physical, cognitive, emotional and social developmental disorders in the children [4–6, 17, 26, 27].

### Interaction between mothers and their infants

Children and, in particular, babies are pure “emotional beings”. Successful two-way communication between the mother and infant is thus a precondition for the regulation of the child’s affective states. Since the infant him- or herself cannot regulate his or her inner states of excitation due to his or her immaturity and thus depends on an affect-resonant, sensitive regulation by the mother (and the father), affect perception distorted over time due to maternal depression can lead to decreased stress tolerance and an insecure attachment pattern of the child. The interaction in the case of healthy mothers is of course also not coordinated in an affect-synchronous and optimally regulative way at every point in time. There are always periods during which the maternal and child affect signals do not match, for example, the child demonstrates positive affect signals, yet the mother demonstrates aversive affect signals [5]. These decoupling phases briefly generate affectively aversive stress conditions in the infant which, however, are regulated through another phase of empathetic responsiveness by the mother and recurring concordance. The succession of affectively coordinated and mismatching communication and the resultant regulation experiences lead little by little to the internalised and structure-forming experience (for example, toler-

ance to frustration which grows later) in the child: aversive conditions can fundamentally be converted into positive conditions [5]. The relationship to the mother is also deepened here as a result and a secure attachment is built. In a disrupted mother-child interaction – for example, due to dissociative or depressive conditions in the mother – these regulative experiences are lacking which in turn can lead to the accumulation of negative affective states and development of depression in the infant [5].

### Effects on the mother’s behaviour

The behaviour of mothers with postpartum depression is characterised by various factors, such as a lack of willingness to react to the child’s vocal or mimic attempts at interaction, less physical contact, passive or intrusive behaviour, decreased facial expressions and increased negative emotions [6]. Because of this, there is a limitation in the mother’s ability to regulate the child’s affective states. The mothers often register their impaired parental competencies themselves and additionally suffer from this. The assessment of the self-effectiveness of depressed mothers is also more negative than that of non-depressed mothers [6]. At the same time, there are indications that depressed mothers perceive their children’s behaviour more negatively than objective observers. This can result in additional aversive effects on the mother-child interaction and the mother’s self-effectiveness experience [4, 6].

According to Brockington and Kumar, one concept of the maternal attachment disorder describes a tiered expression of indifference towards the child, from rejection, alienation and anger, to the point of rage and hatred [28–30]. If severe, disrupted maternal bonding is a risk factor for infanticide [31]. The “Parental Bonding Questionnaire BPQ” (25 questions) can be used as a screening instrument for postpartum attachment disorder [29]; German version with 16 items: [32].

### Effects on the children

This lack of maternal empathy and the reduced potential to understand the child’s emotional needs and react appropriately can lead, on the part of the child, to increased irritability, reduced ability for self-regulation, and the development of an insecure attachment and subsequently to psychological/psychosomatic disorders. In investigations, children’s behaviour demonstrated increased withdrawal, a low degree of positive emotional expression and more frequent crying, avoidance of eye contact, a low activity level as well as increased stress parameters such as heart rate and cortisol level. Turning the head away and active avoidance of eye contact with the mother can be understood as an attempt by the infant to protect him- or herself from the aversive effect of the nonresponsive maternal behaviour [4]. Such an experience for a mother who is already depressed may be guiltily processed as an agonizing experience of her own failure. In this case, empathetic support with practical and emotional relief as well as psychosomatic treatment of the mother is crucially important. In addition, investigations make it clear that aversive emotional stress experiences in early childhood shape the functional and structural development of the brain via epigenetic mechanisms [33–36].

## Effects on the fathers

Depression in the mothers is also a risk factor for the development of a depressed mood in the fathers [37] who can also suffer from antenatal and postpartum depression. The prevalence of paternal depressive states from the first trimester of pregnancy up to one year after the birth is 10.4% [38]. The lowest value (7.7%) is indicated for the time period from birth to three months later; the prevalence is the highest in the 4th–6th month after birth – 25.6% [38]. Other risk factors include a pre-existing mental illness, very high expectations before the birth and low social support by family and friends after the birth, as well as a low level of satisfaction in the couple's relationship [37–39]. The latter can also occur in particular insufficiently triangulated fathers whose subconscious interactive tendencies (characterised in childhood) in relation to the female partner are still largely based on their own needs and dyadic types of relationships. The newborn may then (re)establish a problematic exclusion experience for fathers who were accordingly predisposed in childhood, and thus such fathers cannot identify or can only with difficulty identify with the mother's and baby's mutual need for mirroring. This family situation which is conflictual and stressful for all involved can, in conjunction with maternal depression, mean a cumulative risk to the child's development of attachment [39,40]. The extent to which the experience of the birth itself by the father has an impact on the postpartum interaction structures and individual impressions of both parents and whether this can be positively influenced through an intervention in terms of antenatal classes for men only is currently being researched.

In addition, there is a connection between depression in the father in the period after birth and the increased risk in the child of developing a mental illness, fully independent of depression in the mother [41]. This suggests that fathers should also be included in the screening and treatment of the mother and paternal depression should be treated early on.

## Treatment of PPD

The treatment of postpartum depression is described in the S3 Guideline for Unipolar Depression (2015) in a separate chapter [19]. Multimodal therapy should be provided which includes psychotherapeutic, drug and also additional psychosocial support, as needed.

### Drug therapy

Although the patients themselves largely prefer psychotherapy, pharmacological treatment is used most often [17]. Pharmacotherapy during breastfeeding is always a substantiated individual risk/benefit assessment, taking risk factors and treatment alternatives into account and against the backdrop of the consequences of untreated maternal depression. If pharmacotherapy is indicated, monotherapy at the lowest possible dose should be preferred. In this case, preparations from the group of SSRIs are used, in particular sertraline, additionally fluoxetine and citalopram, which have hardly any adverse effects on the newborn [18]. Preparations from the group of SNRIs are used only if SSRIs do not work or the patient already responded well to SNRIs in the past (there are only a few studies on the safety of this class of psycho-

therapeutic drugs) [18]. To avoid high maternal serum levels, the time at which the medication is taken can be coordinated with breastfeeding (such as directly after breastfeeding, after the last evening breastfeeding session). In addition, a connection between the development of PPD and a postpartum drop in the hormone level of allopregnanolone and progesterone with reduced adaptation of the receptors is suspected [42]. The postpartum administration of the steroid hormone allopregnanolone (Brexanolone) was investigated in 2016 as another therapeutic option in a study on patients with severe postpartum depression [42]. The initial results were encouraging, however due to the small sample size, further investigations are needed.

### Psychotherapy of postpartum depression

In the few systematic psychotherapy studies on postpartum depression, significant effects have been able to be demonstrated for treatment with interpersonal psychotherapy (IPT), cognitive behavioural therapy (CBT) and psychodynamic psychotherapy [4, 7, 19, 43, 44].

The most important point of criticism in the use of IPT and CBT in the treatment of postpartum depression is the fact that the central significance of the primarily affect-controlled mother-child relationship is not adequately taken into account. Unfortunately, too little attention is still paid in conventional therapies to the disrupted mother-child interaction as a triggering and sustaining factor for postpartum depressive symptoms. Purely symptomatic treatment of maternal depression does not itself have the effect of improving parenting skills with reasonable certainty and thus any existing maternal attachment disorder would additionally be therapeutically focused on [4, 26].

### Other treatment methods

Physical training is recommended as a supplemental measure to improve typical symptoms of depression, however it is not a substitute for standard treatment. In individual studies on various additional therapeutic options, positive effects were seen, however overall the evidence is still insufficient to date. Repetitive transcranial magnetic stimulation (rTMS) may bring about a reduction in postpartum depressive symptoms. Omega-3 fatty acids, therapy with folic acid, S-adenosyl methionine, St. John's wort preparations, light therapy, training, massage and acupuncture were used in various studies. However, no clear significant effects were seen with all of the substances and methods mentioned [18]. Since the sensitivity to hormonal fluctuations is discussed as a possible cause for postpartum depression, hormonal preventive and treatment options such as transdermal oestrogen are currently being investigated [18].

## Outpatient and Inpatient Treatment Setting

Depending on the manifestation and severity of the depressive symptoms, the treatment can take place on an outpatient or inpatient basis. When there is a suspicion of antenatal depressive disorder but also with regard to a postpartum threat to the child's welfare, active "visiting" help and close monitoring in which mid-

wives or “Frühe Hilfen” [early intervention] can also be involved is necessary [45]. Consulting a physician specialising in psychosomatic medicine or psychiatry is recommended in order to decide whether outpatient help is sufficient or day-patient/inpatient treatment options are needed.

In the case of mild to moderate depressive symptoms, the mothers can often be treated on an outpatient basis. In the *outpatient* setting, psychosocial support is of particular importance: involvement and information of the family (parents, siblings) and friends, parental leave for mother and father, support by specially trained midwives (so-called family midwives), applying to the health insurance fund for domestic help, support through coordinated assistance programmes such as, for example, “Frühe Hilfen” and connecting with self-help groups contribute to stabilisation. In terms of prevention in high-risk patients, it is important and helpful to discuss these measures early on, prior to and during pregnancy. If these measures are not sufficient, promptly arranging for outpatient psychotherapy and, if applicable, the start of antidepressant drug therapy is another important step.

If *inpatient* therapy is needed in the case of severe postpartum depression (also in the case of comorbid illnesses such as psychosis, trauma or borderline disease), accommodation in a specially organised, attachment-oriented working mother-child unit (MCU) should be preferred. Continued attachment disorder due to separation or accommodation outside the family can be avoided through joint inpatient accommodation. In Germany, there is fortunately an increasing number of hospitals with special mother-child care, even if overall, the care situation for severely ill mothers is not yet sufficiently guaranteed [46, 47].

## Specific Treatment Taking the Attachment Disorder into Account

Therapy for the mother includes disorder-specific psychotherapeutic treatment in an individual and group setting. The psychotherapy is provided with a focus on the adjustment requirements occurring as a result of the birth of the child. Important objectives are protection and emotional stabilisation, identification of resources and stress reduction, examination of the mother-child relationship, transfer of developmental psychology knowledge, as well as the topic of adjustment to a triad relationship [28]. Psychodynamic concepts focus on specific unconscious conflicts or unprocessed traumas reactualised due to motherhood which contribute to the maintenance of the attachment disorder and which can be reproduced in the mother-child interaction [48, 49]. In addition to therapeutic work with the mother, the mother-child relationship is supported in various ways, such as with baby massage, special mother-child movement therapy or therapeutic support of the mother at play and in everyday situations. Video-aided sensitivity training with positive reinforcement of maternal behaviour is very helpful in postpartum affective and psychotic disorders and is a frequent component in the treatment of parents with children in an outpatient and also an inpatient therapy setting [28, 50]. Observations to date show that joint mother-child treatment leads to an improvement in the mother-child relationship [44] and

has a protective effect even after the end of therapy with regard to the mother-child relationship [28].

## Final remarks

In principle, the responsible care of the environment for the mother and her child – the “mothering of the mother” – represents an obligation of the social reference group which is justifiable on a socio-political and also on an evolutionary biological level. A depressive disorder in the postpartum period is still too often identified late or not at all – with possible far-reaching consequences for mothers, fathers, and their children. Early information during pregnancy and screening would therefore be desirable, as is implemented in, for example, the program Mind:Pregnancy [51]. This is an online-based form of assistance in which pregnant women, for example, with affective disorders, can receive comprehensive counselling. Even if the options for multimodal and interdisciplinary therapy have improved, the care of affected mothers is still lacking. Close collaboration between gynaecologists, general practitioners, paediatricians, midwives and psychiatric/psychosomatic and psychotherapeutic physicians and psychologists in the hospital and medical practice would be desirable. The further development of special outpatient consultations, the possibility of day-clinic care for mothers along with their babies, as well as the expansion of inpatient therapy in special mother-child units should be sought, in view of the far-reaching consequences. In particular, the focus of the mother-child attachment and the involvement of the father are other important components in the successful prevention of effects on childhood development.

## Conflict of Interest

The authors declare that they have no conflict of interest.

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