Coping styles of pregnant women after prenatal ultrasound screening for fetal malformation

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Abstract

Objective: Ultrasound is a widespread noninvasive method of prenatal diagnosis. The detection of fetal abnormalities can provoke anxiety, which needs coping. The coping process of pregnant women with different risk conditions for fetal abnormality were studied in a longitudinal design and compared with a nonrisk control group of women with healthy uncomplicated pregnancies. **Methods:** The coping strategies of women ($n = 664$) during the second trimester were assessed with a questionnaire [Heim E, Augustiny KF, Blaser A, Schaffner L. Berner Bewältigungsformen (BEFO) Handbuch. Bern: Huber, 1991]. Data were collected at three points in time: immediately before the ultrasound scanning for fetal malformation, at 5–6 and 10–12 weeks after the prenatal ultrasound examination. Questionnaires were also used to collect information about sociodemographic data, anxiety, pregnancy data and personality. **Results:** The analysis of the coping strategies of women with high-risk pregnancies ($n = 497$) and as well of these with no-risk conditions in the control group ($n = 167$) revealed three different factors of coping: Factor I: positive emotional attitude/distance, Factor II: negative emotional attitude/disapproval and Factor III: active coping. At all three points in time, Factor I correlated significantly with anxiety decrease, Factor II with increase and Factor III did not correlate with anxiety at all. **Conclusions:** Women with risk-pregnancies used coping strategies similar to those women in the control-group. Different spectrums of coping strategies corresponded significantly to increasing or decreasing anxiety. These women with high levels of anxiety, especially, should be offered sensitive care or psychotherapeutic counseling, as their coping processes did not lead to successful coping in the form of a reduction in anxiety.
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Introduction

Ultrasound scanning is a very safe and increasingly routine method of diagnosis in prenatal care. In Germany, one of these scans is carried out during the 18th–22nd week of gestation, especially for the detection of any fetal abnormalities [2], because all anatomical structures of the fetus, the placenta and the uterus can be scanned. In pregnancies where there is a risk of fetal abnormality, the pregnant woman is transferred to a center with the highest diagnostic standards especially for prenatal diagnosis of fetal malformation [2,3].

In psychosomatic literature, one can find clinical reports and some warnings that pregnant women subjected to ultrasound scanning experience stress and anxiety, especially if there is a detection of abnormality [4] (p. 1047). The view has been put forward that the visualisation of the fetus during routine scanning with normal results might have a positive influence on the development of maternal–fetal attachment. But Baillie and Hewison [5] showed in their review that most of these results are not very well documented by longitudinal research data that are based on empirical research. From our clinical experiences with psychotherapeutic intervention and particularly crisis intervention in the Department of Prenatal Diagnosis and

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Sonography in Gynecology, we know that many pregnant women are very anxious while waiting for ultrasound scanning especially if a risk factor has been diagnosed before [6].

Results of previous research

Lumley [7] and Michelacci et al. [8] were able to show that anxiety in pregnant women was high just before ultrasound scanning, but levels were reduced, if there was a positive feedback that the development of the fetus was normal. If by ultrasound a fetal abnormality was confirmed, anxiety levels of pregnant women were found to be high from the time of the detection until postpartum and were not reduced before the malformation (e.g., an urogenital abnormality) could be corrected by surgery [9]. Altogether, these few studies dealing with the psychological impact of the detection of fetal abnormalities by ultrasound scanning give very limited information about the psychological situation of pregnant women. Many studies were retrospective, sample sizes were small and no control group of women with healthy pregnancies was included. Prospective longitudinal studies with different high-risk groups of suspected or confirmed fetal malformation are not available. While anxiety in the context of prenatal diagnosis seems to be the target variable the most often evaluated, coping in a longitudinal perspective has not yet been studied, although anxiety and the coping process are very closely related.

Two different hypotheses with regard to coping have been discussed [10–15].

> Hypothesis 1: The early detection of fetal abnormalities by ultrasound scanning enables pregnant women to start the coping process already during pregnancy. Thus, the early process of coping with a fetal abnormality can reduce anxiety during pregnancy and lead to less stressful months of anxiety after birth.

> Hypothesis 2: The early screening of high-risk pregnancies and even the early detection of fetal malformations might prolong the process of emotional disturbance and anxiety and can overshadow the whole process of psychological adaptation during pregnancy.

The prospective longitudinal study

The presented prospective longitudinal study on coping processes after prenatal ultrasound scanning for fetal abnormalities was a cooperative project of the Department of Psychotherapy and Psychosomatic Medicine and the Department of Prenatal Diagnosis at the Women's Hospital, University of Ulm. The objective of the study is the investigation of the coping process of women with a risk for fetal malformation detected by ultrasound scanning, but not their emotional reaction to the procedure of ultrasound scanning as

such. The results should enlarge our knowledge of how pregnant women can cope with their anxiety longitudinally.

The following questions were analysed.

What are the coping strategies of pregnant women immediately before the ultrasound scanning and do coping strategies change over time? How are they related to the development of anxiety? Does positive or negative diagnosis have an impact on the coping strategies?

Based on these questions, we hypothesized that coping strategies which lead to a working through process of the event, e.g., information seeking, expression of emotions, support seeking, would decrease anxiety and that coping strategies that lead to a constant activation of the coping system, e.g., aggravation, disapproval, resignation, dissimulation, would increase anxiety.

We had the hypothesis that a confirmed diagnosis of fetal malformation led to an intensive use of coping strategies.

Sample size

The total sample size was $n = 664$ pregnant women in the second trimester with $n = 497$ women in the high-risk group and $n = 167$ women in the no-risk control group. The women were contacted and informed about the aims of the study when they came to the Women's Hospital for prenatal ultrasound scanning because of a risk of fetal abnormality. The women of the high-risk group either had a well-known risk condition (e.g., diabetes mellitus, epilepsy, previous miscarriage) or no previous risk was known to the gynecologist who, by the first ultrasound scan, detected indices of a fetal malformation and advised the women to go to the University Center for a further examination. Thus, for the women of the high-risk group, the ultrasound scan at the University Center was not their first ultrasound examination and they were informed that they had been transferred to the University Center because of a risk-condition. There, the diagnosis was to be confirmed and specified or rejected. The women of the control group, who had no known maternal or fetal risk factors, were seen for routine ultrasound scanning at the University Hospital or at the practice of a gynecologist/obstetrician. Including a no-risk control group prevented us from confounding possible psychological distress of the women, varying according to the trimester of pregnancy, with these changes in the coping process and anxiety level that could be related to the fact of a suspected fetal malformation.

With 88.75% of the pregnant women contacted giving their informed consent, the acceptance of the study was very good. Up to the latest point in time of the follow-up, the drop out rate was only 21.6%. Women who terminated their pregnancy during the follow up time did not want to participate any longer in the study. It is unknown how many of the women in the total drop out rate did drop out because of the termination of their pregnancy. Only data from these women are presented who did not terminate their pregnancy.

The sample of the high-risk pregnancies ($n = 497$) was divided into five subgroups.

Subgroup I: "suspected fetal abnormality" (n = 90)

Pregnant women whose diagnostic signs for a suspected malformation of the fetus (e.g., hydrocephalus, omphalocele, spina bifida, gastroschisis) had already been diagnosed by an obstetrician and was the reason for the transfer to the University Center with the highest diagnostic standard.

Subgroup II: "complications in previous pregnancies" (n = 100)

Pregnant women who had suffered from complications in previous pregnancies (e.g., abortus, fetal malformations, prematurity, miscarriage, stillbirth).

Subgroup III: "maternal disease/medication" (n = 89)

Pregnant women who had had infections or chronic diseases (e.g., infections with rubiella, cytomegaly, borreliosis, epilepsy, diabetes mellitus), which brought with them a risk of fetal malformation or even miscarriage in the current pregnancy and needed continuous medication.

Subgroup IV: "advanced maternal age" (n = 72)

Pregnant women above 35 and for whom there was a risk of fetal abnormalities because of their advanced age and who did not accept amniocentesis or chorion villus sampling.

Subgroup V: "endocrine testing" (n = 82)

Pregnant women who had had an endocrine diagnostic screening during the current pregnancy (e.g., α-fetoprotein-screening) and showed pathological blood levels resulting in a significantly increased risk of fetal malformations. Pathological endocrine blood levels of special proteins can be associated, for example, with a risk of the Down syndrome or defects in the development of the neural cord. Therefore, further diagnostic procedures, such as ultrasound scanning, were recommended in order to arrive at a more definite diagnosis. With this method, there was a risk of falsely positive or falsely negative results.

Subgroup VI: "multiple risks" (n = 64)

Pregnant women who had a combination of more than one of the above-mentioned risk factors.

Design of the study

All women were seen during their waiting period immediately before ultrasound scanning was performed (T0). The questionnaires were repeated again after 4–5 weeks (T1) and again after 8–10 weeks (T2) after T0. In this study, only women were included who were exclusively examined by ultrasound scanning and not by amniocentesis during the course of their pregnancy. This meant that women in our study refused amniocentesis although it might have been recommended to them in some cases. This design prevented us from confounding the psychological process related to ultrasound scanning with that related to amniocentesis. The study was aiming at longitudinal data about the development of coping processes especially related to the possible detection of fetal malformations only by ultrasound scanning and not by other procedures, e.g., amniocentesis. During the follow-up period, it was possible that some pregnant women had several ultrasound scans to confirm a definite diagnosis or to get a clear picture of the further development of the fetus. Sometimes a diagnosis was not confirmed until 5–10 weeks after the first data sampling point at the earliest. This meant that some women had to cope with a longer period of uncertainty as they did not have a precise diagnosis until 8–10 weeks post-T0.

Methods

After informed consent, the pregnant women were asked to fill in the German version of a questionnaire on coping processes [1]. This questionnaire is composed of 30 coping strategies that are grouped under the categories of emotion-, cognition- and action-oriented coping. This Bernese Coping Instrument is based on a biosocial model of stress and coping. It integrates behavioral and psychodynamic concepts with the idea of coping that ranges from more unconscious ("defence concept") to more conscious mechanisms of coping [16,17].

Anxiety was measured using a German version of a questionnaire on state and trait anxiety (State-Trait Anxiety Inventory — STAI) [18,19]. "State-anxiety" is defined as relating to more situational and context-related anxiety that varies depending on the event and the situation, whereas "trait-anxiety" is defined rather as a personality trait reflecting more an anxious character of an individual. Further questionnaires were concerned with sociodemographic data, family and life situation, critical life-events [20], social support [21] and with personality [22]. A diagnosis of fetal malformation by ultrasound scan was recorded in order to see, if there was a difference in anxiety levels and coping styles following positive findings. At T1 (4–6 weeks post-T0) and at T2 (8–10 weeks post-T0), the pregnant women were again asked to fill in the same questionnaires on coping and anxiety.

Statistical analysis

Statistical analyses were derived with the software package SPSS 10.0 for Windows. Depending on the

variable, we used chi-square test for discrete variables and, depending on the distribution of the data, we applied independent samples T-test and Mann–Whitney U-test, ANOVA, Kruskal–Wallis H-test for several independent samples and Wilcoxon-two related samples tests to compare the results in the different groups. For comparisons of results of different points in time, we used the procedure General Linear Model (GLM) with repeated measures as from SPSS Version 7 the procedure MANOVA has been replaced by GLM.

Results

Description of the sample

In the sociodemographic data, the high-risk group and the no-risk control group did not show significant differences in most of the variables. An exception was the age distribution with significantly ($P = .000$) more older women in the high-risk group (mean age: 32.3 years, S.D.: 3.2, range: 20–30 vs. 30.7 years, S.D.: 4.7, range: 20–37 in the control group), which was due to the subgroup with the "advanced maternal age risk factor" in the high risk sample. Furthermore, women in the control group showed a significantly more advanced school education than those in the high-risk groups ($P = .012$). The women of the high-risk groups had significantly more pregnancies before this risk-pregnancy ($P = .005$), they had their ultrasound scanning

Table 1
Description of pregnancy data

Variable	Control group, $n = 167$	High risk groups, $n = 497$	Test
Number of pregnancies (before actual pregnancy)	mean = 0.97 (S.D. = 1.10, range = 0–5)	mean = 1.28 (S.D. = 1.26, range = 0–7)	$Z = -2.813$, $P = .005$**
Weeks of gestation at T0	mean = 20.5 (S.D. = 1.54, range = 16–27)	mean = 19.7 (S.D. = 2.68, range = 10–27)	$Z = -2.899$, $P = .004$**
Complications in previous pregnancies			
Stillbirth	0.6%	4.1%	$Z = -2.153$, $P = .031$*
Miscarriage	11.7%	19.7%	$Z = -2.357$, $P = .018$*
Preterm delivery	4.3%	5.4%	ns
Induced abortion	4.9%	8.2%	ns
Other complications	5.5%	9.9%	ns
Ambivalence about pregnancy	51.3%	64.7%	$\chi^2 = 8.547$ ($df = 1$) $P = .003$**
Acceptance of pregnancy	37.6%	25.5%	$\chi^2 = 7.856$ ($df = 1$) $P = .005$**

χ^2 = Pearson chi-square test, Z = Mann–Whitney U-test.
* $P < .05$.
** $P < .01$.

Table 2
Coping strategies of a three factor solution of coping

	Factor I: "positive emotional attitude/ distance"	Factor II: "negative emotional attitude/ disapproval"	Factor III: "active coping"
K*12 valorisation	0.720	−0.237	0.093
K6 humor	0.656	0.250	0.068
K4 dissimulation	0.609	−0.377	0.002
E**4 optimism	0.586	−0.175	0.177
K1 distraction	0.577	0.08	−0.09
K3 acceptance, stoicism	0.493	−0.228	0.118
E5 passive cooperation	0.436	−0.04	0.113
E7 self-blame	−0.146	0.638	0.06
K5 maintain composure	0.05	0.624	0.153
K10 rumination	−0.467	0.537	0.08
H***7 retreat	−0.239	0.466	0.09
E2 emotional relief	−0.09	0.440	0.290
E1 quarreling with one's fate	−0.294	0.434	0.111
K2 aggravation	−0.195	0.416	0.223
E6 resignation, fatalism	−0.003	0.402	−0.09
H2 altruism	0.221	0.376	0.365
E8 blaming others	−0.236	0.342	0.05
E3 isolation, suppression of feelings	0.166	0.337	−0.122
H1 distracting activity	0.209	0.270	0.191
K7 analysis of problem	0.09	0.260	0.180
H3 active avoidance	−0.08	0.118	−0.027
H8 linking with others in similar situation	−0.253	0.013	0.603
K9 religiosity	0.042	−0.224	0.574
H10 emotional support	−0.063	0.039	0.569
K11 attribution of sense	0.121	0.055	0.544
H4 compensation	0.096	0.234	0.525
H9 active intervention	−0.008	0.031	0.512
H5 constructive activity	0.163	0.165	0.509
K8 maintaining a sense of proportion	0.154	0.095	0.503
H6 concentration, relaxation	0.043	0.028	0.382

Factor loadings of the three factors in the high-risk subgroups at T0.
Extraction Method: principal component analysis, rotation method: varimax with Kaiser normalization.
Rotation converged in six iterations. Total variance explained: 32.19%.
* K = cognitive-oriented coping, ** E = emotion-oriented coping, *** H = action-oriented coping.

for the specific examination of fetal malformation earlier ($P = .004$) and they had a significantly greater number of stillbirths ($P = .031$) and miscarriages ($P = .018$). They were also different in their attitude towards their pregnancy: women with risk-pregnancies expressed more ambivalence ($P = .003$) and less acceptance about their pregnancy ($P = .005$). All other variables of pregnancy did not differ significantly (Table 1).

Women in the high-risk subgroups had significantly ($P = .05$) more persons at home to care for (12.3% vs. 6.6%), but were not different in the number of other critical life-events.

The number of fetal malformations detected was quite different in the high-risk subgroups. The lowest incidence of
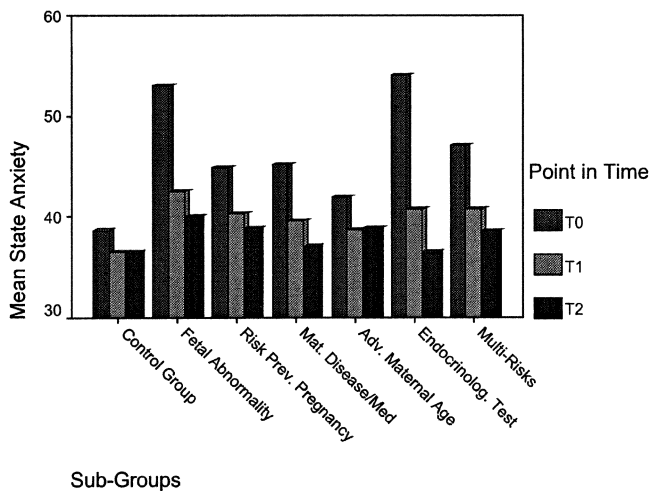
Fig. 1. State anxiety of subgroups.

pathological findings (2.4%) was found in the control group of the pregnant women with normal pregnancies. The highest rate of fetal malformations (58.9%) was detected in the high-risk subgroup that had already been transferred to the center because of suspected fetal abnormalities. The diagnosis of malformation ranged from unimportant to very severe abnormalities, e.g., heart failure.

Coping styles

The findings of a factor analysis of the coping questionnaire BEFO [1] of the whole study group ($n = 674$) revealed three similar factors in the control group and in the high-risk subgroups, when calculated separately for both groups. For the high-risk subgroups, these three factors were interpreted and labelled on the basis of their item contents: Factor I: "positive emotional attitude/distance," Factor II: "negative emotional attitude/disapproval," Factor III: "active coping" (Table 2).

A re-analysis for reliability of these factors in the study group showed inter-item correlation at a medium level ($r = .13 - .20$) and a sufficient reliability (Crohnbach's α range: .69−.72). The loadings of the factors and the item components did not change significantly at T1 and T2, and were comparable when factor analysis was repeated for these points in time.

Table 4
Factors of coping and decrease of state anxiety at T0, T1 and T2

Coping strategies T0	Difference of state anxiety from T0 to T1	Difference of state anxiety from T1 to T2
Factor I coping	0.353**	0.333**
Factor II coping	− 0.208**	− 0.248**
Factor III coping	0.022	0.102

$n = 504$, Spearman rank correlations.
   * Level of significance = .05 (two-sided).
   ** Level of significance = .01 (two-sided).

Coping and anxiety

If the process of coping with the emotional stress that a risk of fetal malformation causes was successful, the anxiety of the pregnant women should have decreased over time.

The different levels of anxiety showed that state anxiety decreased from T0 to T2 in almost all of the high-risk subgroups. Only in the high-risk subgroup with suspected fetal malformation the level of anxiety, although decreasing over a period of time, still remained higher at T2 than in the control group (Fig. 1).

The strongest correlations between coping and anxiety levels were found at T0. Weaker, but still significant, correlations were revealed at T1 and T2, although anxiety had decreased significantly from T0 to T1 and T2. The mean values of state anxiety in the high-risk subgroups correlated significantly at the different points in time. From the three factor solution, Factor I correlated negatively at all three points in time, and this indicated a significant correspondence with a decrease in anxiety, whereas Factor II correlated positively indicating a correspondence with increase in anxiety. Factor III revealed weak, but not significant, correlations with the level of anxiety (Table 3).

A comparable result was found for the correlation with the mean difference of decrease in anxiety from T0 to T1 and from T1 to T2: the greater the difference was in the decrease of state anxiety from T0 to T1 or from T0 to T2, the stronger was the correlation with items loading on Factor I. The same, but with a negative correlation, was true for the items of Factor II, and Factor III did not correlate at all with the mean difference of anxiety decrease over a period of time (see Table 4).

Table 3
Factors of coping and state anxiety at T0, T1 and T2

Variables	State anxiety at T0	State anxiety at T1	State anxiety at T2
Factor I coping	− 0.567**	− 0.432**	− 0.313**
Factor II coping	0.486**	0.433**	0.302**
Factor III coping	− 0.013	0.069	0.110

Spearman rank correlations.
   ** Level of significance = .01 (two-sided).

Table 5
Anxiety levels and pathological findings of fetal malformation[a]

	Malformation	n	Mean	S.D.	S.E.M.
State anxiety T0	No	572	44.50	13.77	0.57
	Yes	96	54.08***	13.12	1.33
State anxiety T1	No	468	38.76	10.26	0.47
	Yes	76	43.76***	10.83	1.24
State anxiety T2	No	463	37.17	11.07	0.51
	Yes	70	41.74**	11.81	1.41

   [a] T-test.
   ** P < .01.
   *** P < .001.

Table 6
Coping strategies and confirmed pathological findings of fetal malformation[a]

	Malformation	n	Mean rank	Sum of ranks
Factor I coping	No	530	295.58	156,655.00
	Yes	87	390.78***	33,998.00
	Total	617		
Factor II coping	No	530	311.19	164,930.00
	Yes	87	295.67	25,723.00
	Total	617		
Factor III coping	No	530	317.05	168,035.00
	Yes	87	259.97**	22,618.00
	Total	617		

[a] Mann–Whitney U-test.
** $P < .00$.
*** $P < .000$.

However, the severity of the malformation did not correspond significantly with the level of anxiety and the coping styles.

Coping and fetal malformation

At all three points in time, pregnant women with a confirmed diagnosis of fetal malformation revealed significantly ($P = .000$) higher anxiety levels in comparison with these women without a pathological diagnosis (see Table 5). They significantly coped more with strategies out of Factor I ("positive emotional attitude/distance") and less out of Factor III ("active coping"). Strategies out of the spectrum of coping strategies from Factor I are known to contribute to decrease in anxiety, but those from Factor III do not (see Table 6).

Discussion

We studied the coping process of pregnant women with different risk conditions for fetal abnormality diagnosed by ultrasound scanning compared with a nonrisk control group of women with healthy uncomplicated pregnancies.

If the coping process is triggered by anxiety caused by a risk of fetal malformation revealed by ultrasound, it is very important for pregnant women in this situation to find and use coping strategies that lead to a reduction in anxiety, thus, helping them to cope with this stressful situation and reduce the emotional disturbance.

Factor analysis of the coping questionnaire revealed three factors labelled as Factor I "positive emotional attitude/distance," Factor II: "negative emotional attitude/disapproval" and Factor III "activity." At all three points of measurement, coping strategies from Factor I seemed to be important in that situation as they correlated significantly with a decrease in anxiety, whereas the coping strategies of Factor II correlated more probably with an increase, and those of Factor III correlated neither positively nor negatively with the development of anxiety. The same was true for the dynamic development of a reduction of anxiety over

a period of time. The more strategies of Factor I coping were applied, the greater was the difference in anxiety reduction from T0 to T1 and to T2. The opposite result was found for the intensity of the increase of anxiety and the use of Factor II coping strategies.

Thus, the use of a special pattern of coping strategies was significantly related with the development of the level of anxiety, this indicating a dynamic correlation: the higher the intensity of the use of special coping strategies, the greater was the mean difference in decrease vs. increase of anxiety over a period of time.

This finding could be the basis for a screening instrument: if women fill in the coping questionnaire as a screening instrument before ultrasound scanning for fetal malformation, one would easily be able to identify the women who could be expected to do well in their coping process, because they use coping strategies from the Factor I coping spectrum.

On the other hand, the women using strategies from Factor II coping would be at risk as their coping strategies would not be capable of reducing anxiety sufficiently, but would rather lead to an increase. High levels of anxiety could be the source of an additional risk, as anxiety is not only a question of the emotional well being of the pregnant women, but could also have an adverse influence on the development and growth of the fetus. There were very interesting results from a study of Teixeira [23], which showed that anxiety in pregnant women can lead to higher blood vessel resistance and inhibition of blood circulation in the placenta. The interpretation of this finding is that anxiety, by excitation of central nervous processes, can influence the level of catecholamines responsible for the regulation of blood vessel resistance. Reduced blood flow by high blood vessel resistance can lead to a fetal growth retardation and influence the healthy development of the fetus. Especially the developing central nervous system could be very sensitive to the reduction in blood flow. This could be diagnosed by ultrasound scanning leading to a further increase in maternal anxiety, resulting in a vicious circle.

Coping and pathological findings

Pregnant women with suspected and these with confirmed pathological findings seemed to be a target group for psychological intervention, as they had high levels of anxiety (see Fig. 1 and Table 5). It is possible that a very high level of anxiety and arousal could have a blocking effect on coping by hindering and limiting the ability to activate more intensively helpful coping strategies from Factor I coping that correlated with a decrease in anxiety. Or the anxiety and level of arousal could block and hinder successful coping, once the level has gone beyond a particular critical limit. It seems as if being suspected of having a pathological finding is sufficient to trigger this process, independent from the definite conformation of the diagnosis.

Conclusions

Prenatal early ultrasound screening can be a useful examination for the detection of fetal anomalies during early pregnancy. Many women with high-risk factors for fetal malformation showed high levels of anxiety immediately before the ultrasound scanning, but decreasing levels longitudinally over the period of the follow-up. One question to be answered was to what extent individual ability to activate coping strategies and the development of anxiety would be correlated, as one would expect that successful coping would result in a decrease in anxiety.

By factor analysis, it was possible to identify three different spectrums of coping strategies that correlated with a decrease or an increase in anxiety longitudinally. The course of anxiety and the use of coping strategies was, furthermore, correlating with pathological findings of fetal malformation.

The results indicate that there is a possibility of screening for coping strategies that could help to decrease anxiety in this special situation. The women who used coping strategies, that were more correlated with an increase in anxiety, could be offered a special psychological intervention with the aim of widening the range of their coping strategies by adding those special strategies that were correlated with anxiety reduction. This would be very important as successful coping resulting in a decrease in anxiety could not only help these women to feel better emotionally, but could also be of benefit for the fetus, as Teixeira [23] was able to demonstrate the correspondence between maternal anxiety and blood circulation in the placenta.

Whether a short-term psychological intervention or only supportive sensitive care can be successful, or if the individual spectrum of coping strategies is based on personality features and therefore not so easily prone to change, will be the aim of a further study.

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