

THE CORRELATIONS BETWEEN EATING DISORDERS AND PREGNANCY

PhD thesis

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Introduction

Disorders related to nutritional (eating) behaviour have become more and more common since the second half of the last century. The spectrum of eating disorders has widened, new pathologies are constantly emerging and dissatisfaction with the body has greatly increased. These chronic psychosomatic diseases are often associated with other disorders and have a high mortality rate (Arcelus et al., 2011). Known types are anorexia nervosa, bulimia nervosa and binge eating disorder. In relation to eating disorders, taking into account the spread of obesity, we can already talk about its importance on the public health scale (Túry et al., 2013; Martos and Bakacs, 2017).

The prevalence of clinical eating disorders among young women is 1-4%, but the prevalence of subclinical forms in some groups (e.g. athletes, university students) can reach up to one third of the population (van Eeden et al., 2021; Sumska et al., 2008). Eating disorders basically develop in adolescence or young adulthood, a critical stage of becoming a woman and/or mother. Anorexia nervosa often occurs in even younger children, delaying their sexual development. Eating disorders affect sexual maturation, the reproductive function, pregnancy and the unborn foetus through nutritional factors and associated psychological disorders. In the last three decades, reports and research results on the correlation between eating disorders and pregnancy have appeared in the international literature in increasing numbers. Overall, the majority of experiences have shown that the risk of menstrual and fertility disorders, pregnancy-related and obstetric complications increases in the case of women with eating disorders. Both too low and too high body weight and rapid weight fluctuations carry an increased risk.

Pregnancy itself can have a beneficial effect on eating disorders, but there is an increased risk of relapse in the postpartum period. Pregnant women's eating disorders affecting the foetus may even have long-term effects on adult health, as well as the possibility of transmitting these disorders. In Hungary, this area is still unexplored. However, most women with eating disorders also become mothers over time. It is therefore particularly important in gynaecological practice to reveal this often hidden underlying disorder, as well as to know its characteristics, consequences and treatment options.

Objectives

The main objectives set out in the thesis were the following:

1. To find a valid measuring tool with which eating disorders can be identified and screened in this specific population. Despite extensive international literature on the subject, a measuring tool validated for a pregnant population has not previously been known.
2. To find a combination of items to best differentiate between ORTO items that place healthy eating in the center in terms of eating disorders.
3. To identify eating disorders in the sample of pregnant women tested. By making a simulated diagnosis, the separation of a group whose members carry somatic and psychological symptoms of disturbed eating behaviors within the test sample.
4. To compare reproductive function and the progress of pregnancy in groups defined as “having eating disorders” and “not having eating disorders”.
5. To compare lifestyle and certain attitudes towards pregnancy in groups defined as "having eating disorders" and "not having eating disorders".

Methods

Between May 2012 and April 2013, I conducted a cross-sectional, questionnaire survey at Semmelweis University's No. 1 Obstetrics and Gynecology Clinic involving 1,300 mothers who gave birth after the 37th week (the answer rate was 88%)¹.

In addition to assessing socio-demographic characteristics, the research questionnaire asks about anthropometric data, changes, satisfaction and attitudes related to body weight and body shape, and then collects information about previous and current pregnancy, its formation, course, related diseases, childbirth and the newborn. It also covers the respondent's lifestyle, sports, habits of smoking and alcohol consumption. Finally, to determine the affectedness by eating disorders, it uses the Severity Scale of Eating Disorder Symptoms (Yager et al., 1987), three diagnostic subscales of the Eating Disorder Questionnaire (EDI): the *Drive for thinness*, *Bulimia* and *Body dissatisfaction* subscale (Garner, 1983; Hungarian adaptation: Túry et al., 1997), also the SCOFF test (Morgan et al., 1999b; Hungarian adaptation: Dukay-Szabó et al., 2016a), and the method of self-reporting to detect the possible occurrence of eating disorders. It also assesses certain items of ORTO (Donini et al., 2005; Hungarian adaptation: Varga et al., 2014).

¹ I have an ethical license from the Regional, Institutional Scientific and Research Ethics Committee of Semmelweis University (Nr 12631/2012/EKU. [212/PI/12.]), and the research was conducted in accordance with the principles of the Helsinki Declaration of the World Federation of Physicians.

The collected data was analyzed using SPSS statistical suites 22 and 23. In the course of the analysis, I used descriptive statistics, as well as multivariate analysis techniques, linear or logistic regression. I checked the internal consistency of the items in the Eating Disorder Questionnaire by item-total correlation and Cronbach's alpha calculation, its factorial validity by confirming factor analysis, and its discriminant validity by Mann-Whitney U, given the small number of elements and the abnormal distribution of the subscales.

Results

The average age of the respondents is 32.1 years (standard deviation: 5.16; range: 18-47 years), half are residents of the capital and half of the countryside. In the sample, graduates and intellectual professionals are overrepresented. The average body mass index (BMI) and the distribution of categories of respondents do not differ from the BMI² data of Hungarian women of the same age, i.e. from the point of view of BMI, the sample is a good representation of the Hungarian female population of reproductive age.

The applicability of eating disorder tests

The validation test of the Eating Disorder Questionnaire consisted of three consecutive steps: checking the reliability of the measuring tool, examining factorial validity and checking discriminant validity. First, I checked the reaching of the thresholds set by Garner (1983), namely whether Cronbach alpha is above 0.8 on the subscales of EDI in the subgroup defined as affected by eating disorders, and whether the item-total correlation (ITC) was above 0.4 for each item. As a reference point, I considered the group self-reported "currently" affected by eating disorders, i.e. a group of respondents considered to be having eating disorders even during pregnancy (n=26), while the other respondents served as a control group. In order for the measurement to be sensitive enough in a test, the test must be consistent for respondents with eating disorders, and to be specific enough for the results, it has to be consistent for the whole sample. I decided to keep or discard each item on the basis of these two aspects.

On the *Drive for thinness* subscale, I abandoned the "I eat sweets and carbohydrate without feeling nervous," "I'm thinking about dieting," and "I exaggerate or overstate the importance of body weight" items, so this subscale was eventually reduced to four items. On the *Bulimia* subscale, the "I think I should try to vomit to lose weight" item was inconsistent on the entire sample of new mothers, leaving the *Bulimia* subscale reduced to six items. On

² Compared to Hungarostudy 2013 data with the consent of the Institute of Behavioural Sciences, Semmelweis University

the *Body dissatisfaction* subscale, I omitted the "I think my stomach is too big" item for the same reason.

I checked the factorial validity of the measuring tool with a confirmative factor analysis: the three-factor factor analysis carried out without the five items abandoned in the internal consistency test showed a suitable fit.

Abandoning items also entailed changes to the critical ranges for the subscales. Based on the previous item numbers and point limits, I determined the lowest value of the critical point limit for the newly formed subscales by proportionality as follows: 8 points on the *Drive for thinness* subscale, 12 points on the *Bulimia* and 19 points on the *Body dissatisfaction* subscale.

With the new version of EDI validated for new mothers a significant difference can be revealed on all three subscales between the averages on the EDI subscales of respondents who currently claim to have eating disorders and those who do not have eating disorders, which confirms the discriminant validity of the modified version. The specificity of EDI for the *Drive for thinness* subscale was 97.95% (95% CI 96.88-98.73), that of the *Bulimia* subscale was 99.81% (95% CI 99.31-99.97) and for the *Body dissatisfaction* subscale 96.9% (95% CI 95.65-97.87), i.e. the test, correctly, did not categorize cases without eating disorders as cases with eating disorders.

Among SCOFF's statements regarding physical symptoms, in the case of the self-vomiting item there is no significant difference between the responses of those who claim to be having eating disorders and those of others, and the question of weight loss simply cannot be interpreted in the studied population of new mothers. All this can be traced back to the fact that these factors are strongly influenced by pregnancy. However, when it comes to cognitive differences (anxiety about losing of control over eating, dominance of food over life, and that more people consider themselves fat than others think them to be), there is a clear difference between the responses of mothers who are currently affected by eating disorders and who are not. In the case of the item reduced from five to three, the critical limit defined as two out of five "yes" responses cannot be applied. However, a simple average of positive responses to questions suggests that SCOFF captures cognitive dysfunctions associated with eating disorders well.

In the case of three of the examined ORTO items, a significant difference was found between those who currently identify themselves as having eating disorders and the other respondents. The item about worries related to eating: "Do thoughts about food worry you

for more than three hours a day?" showed the biggest difference ($p < 0.001$). "Has anxiety about your health become a prerequisite for your choice of food?" and "Do you think that the belief that eating only healthy food increases your self-esteem?" items also yielded different results between those who declared themselves to have eating disorders and those who did not ($p < 0.05$ and $p < 0.01$). Most of the items examined (5) resulted in no significant difference. If we create a complex measuring tool from the significant items, it displays a significant difference between those who consider themselves to have eating disorders and those who do not.

Identifying affectedness by eating disorders

After validating the EDI, as the second step I redefined the group of "people having eating disorders". Since according to the relevant literature, certain symptoms of eating disorders or subclinical disorders can also influence women's reproductive health, besides the strict definition I also employed a broader one during the analysis.

The first group, set up on the basis of EDI validated on a pregnant population is the one where the respondents reached a critical value on any diagnostic subscale of EDI. There were 50 such respondents, whose proportion in the sample was 4.36%. In the "people having eating disorders" group understood in the broader sense, respondents were classified on the basis of the following criteria:

- 1) those who declared to have had eating disorders in the past,
- 2) those who had ever been characterized by at least three of the following symptoms occurring at least twice a week: overeating (binge eating), self-induced vomiting, using laxatives, using diuretics, dieting, excessive workout, worrying about losing control over eating, the dominance of food, constant worries about body weight, or amenorrhea for at least three months (except in pregnancy), or
- 3) those who declared themselves as currently suffering from eating disorders, or
- 4) on any of the EDI subscales reached a value above the critical threshold.

On the basis of the above listed alternatively considered criteria, in the end 170 people, 14.8% of the entire sample could be regarded as "having eating disorders". This does not signify a clinical diagnosis and cannot be considered as prevalence data; I am considering it as affectedness by eating disorders. It refers to people who have ever (either long before their pregnancy, immediately before it or during it) showed pathologic forms in their eating habits, the perception of their own body, or their attitude towards it. During the analyses in

both cases I defined as the control group those people who could not be classified as being affected by eating disorders even according to the definition in the broader sense (n=976).

The characteristics of the subsamples defined as having eating disorder

From the sociodemographic point of view, the “having eating disorders” and the “not having eating disorders” subsamples do not differ. The BMI average and the distribution of their BMI categories, however, diverge significantly ($p<0,001$). Within the circle of respondents categorized as having eating disorders there are more people with a higher BMI, that is, overweight people. The average pre-pregnancy BMI of the respondents was 23.09 in the control group ($SD=4.27$), 29.15 in the ED EDI group ($SD=5.93$; $p<0.001$), and in the total ED group it was 25.20 ($SD=6.00$; $p<0.001$).

Pregnancy-related changes in body weight and body shape, and their perception

The body weight and BMI before pregnancy in the case of people affected by eating disorders were higher than those of the people in the control group. In comparison with the control group, in the subsamples, the respondents tended to classify themselves fat on a scale of five levels (ED on EDI 4.33; ED altogether 3.69; control 3.34; both groups $p<0.001$), and were less satisfied with their body weight (ED on EDI 1.98; ED altogether 2.88; control 3.56; both groups $p<0.001$). Although less critically, they were also less satisfied with their body shape than the respondents with no eating disorders (ED on EDI 2.14; ED altogether 3.08; control 3.61; both groups $p<0.001$). The regression model combined with BMI indicates that, besides the BMI, eating disorders also significantly affect the subjective perception of body weight.

Three-tenths (31.2%) of those having ever struggled with eating disorders (n=170), and one-tenth of those not affected (11.1%) were strongly characterized by fear from obesity before their pregnancy. It can be told about half of both groups (49.4% and 49.3%) that they were somewhat preoccupied with the question, while one-fifth (21.8%) of those having eating disorders and two-fifths of the control group (41.2%) ($p<0.001$) did not care at all about the possibility of gaining weight. Worries about gaining weight during pregnancy were present in a similar manner ($p<0.001$). Among those classified as having eating disorders on the basis of EDI (n=50) these fears are even more emphatically present than prior to pregnancy ($p<0.001$) and during pregnancy ($p<0.001$). Besides, we can also see that before as well as during pregnancy, the alteration of body shape is likewise accompanied by less

fear than the change in the kilograms of body weight. The absolute majority of the respondents, 93.3%, think that a women's body weight during pregnancy rises optimally by 9-15kg.

In terms of affectedness by eating disorders, there was no difference between the knowledge about normal weight gain during pregnancy of the people belonging to the examined subsamples. Regarding the average weight gain accompanying their current pregnancy, the values of the respondents do not differ in the group with eating disorders and the control group (ED on EDI 14.5kg [SD=6.91]; ED altogether 14.4kg [SD=6.38]; control 13.5kg [SD=5.22]). According to the linear regression model controlled on body weight before pregnancy, however, there are two contradictory processes behind this result. Respondents affected by eating disorders (with the same pre-pregnancy body weight) put on more weight (ED on EDI by 2.23kg; $p<0.01$; the ED altogether by 1.27kg; $p<0.01$), while along with the rise of body weight, the weight gain accompanying pregnancy decreases by ca. 70-80g/kg (ED on EDI -76g; $p<0.001$; ED altogether 69g; $p<0.001$). Since in the groups defined as having eating disorders there are more overweight/obese people, the more weight gain connectable to eating disorders and the less weight gain connectable to overweight mostly equalize in terms of the absolute number that expresses the increased weight gain.

Comparing the average of the assessment values on the five-level scale we can see that respondents having eating disorders are more dissatisfied with the alteration of their body weight accompanying pregnancy than the members of the control group (ED on EDI 2.90; ED altogether 3.38; control 3.85; both cases $p<0.001$). The linear regression model proves that this results from the fact that in the background the two impacts add up: on the one hand, parallel to the increase in body weight compared with the weight before pregnancy (-0.01/kg of body weight; $p<0.001$) satisfaction with the change of body weight during pregnancy decreases, on the other hand, besides controlling the body weight, any eating disorder in itself has a negative effect on the opinion on weight gain connected to pregnancy (ED on EDI, $B=-0.855$; $p<0.001$; ED altogether $B=-0.419$; $p<0.001$).

In the control group (32.4%), the proportion of those who wanted to achieve a lower body weight after childbirth than before pregnancy was significantly lower than in the group of people having eating disorders (ED on EDI 76.0%, ED altogether 48.8%; in both cases $p<0.001$). From among those who had had previous pregnancies, 42.0% of the respondents said that they had excess weight connectable to the previous pregnancies. This occurs more

often in the group having eating disorders (ED on EDI 66.7%; ED altogether 53.1%) than in the control group (40.1%; ED on EDI $p<0.01$; ED altogether $p<0.05$).

On the whole, 90% of the respondents classified on the basis of EDI as having eating disorders, 51.8% of those affected by eating disorders in the broader sense, and 30.5% of the control group is worried about struggling with overweight after childbirth (both $p<0.001$).

History prior to pregnancy

Spontaneous miscarriage and induced abortion occurred in one-fifth (20.1% and 18.1%) of the control group, while in the group having eating disorders ($n=170$) these ratios were 8.1–9.0% higher, which is a statistically significant difference (in case of spontaneous miscarriage $p<0.05$; in case of abortion $p<0.01$). At the same time, in terms of the number of miscarriages and abortions, there was no significant difference between the examined groups. During previous pregnancies, preterm delivery occurred in 10.1% of the control group, in 6.7% of the group of having EDI eating disorders, and in 3.9% of the whole group of respondents defined as having eating disorders. The above difference is not statistically significant in any of the cases.

Also in connection with data referring to previous pregnancies 35.3% of the members of the control group, 44.0% of the group defined as having eating disorders in the broader sense, and 60.0% of the EDI group said that they had given birth with C-section at the end of one of their pregnancies. In the latter case, the difference between the groups is significant on a $p<0.05$ level.

One quarter (25.4%) of the control group and 28.8% of the group having eating disorders in the broader sense said that they had previously had experienced periods when they could not get pregnant for at least one year. Artificial insemination was employed in 7.3% and 7.6% of the groups, respectively. The presented differences are not statistically significant.

The characteristics of the present pregnancy

In the case of almost one-fifth of the sample, the pregnancy was not planned. This ratio neither differs substantially in the group having eating disorder (ED on EDI 12.2%; ED altogether 21.0%), nor in the control group (18.6%). Oligo- or amenorrhoea occurred more often among respondents affected by eating disorders (ED on EDI 26.5%, $p<0.01$; ED altogether 26.3%, $p<0.001$) than in the control group (11.8%). Previous gynecologic

disorders or surgery were found to be the strongest influence factor that can increase the possibility of irregular menstruation by 2.5 times (OR=2.491; 95% CI: 1.728-3.590). Affectedness by eating disorders accompanies oligo- or amenorrhea with a similar likelihood of 2.6 times (95% CI: 1.486-3.421). One unit increase in the BMI results in a 1.05 time increase in the occurrence of irregular menstrual periods.

The current pregnancy was conceived spontaneously in 93.1%, and with medical help in 6.9% of the respondents. These proportions do not differ between the group with eating disorders and the control group.

One quarter of the respondents (25.5%) had had any kind of gynecologic disorder or undergone surgery prior to the pregnancy. The most frequently occurring conditions were ovarian cysts (7.3%) and recurring infections (5.6%). 3.1% of the respondents had had endometriosis. No significant difference was observable in the frequency of occurrence of gynecologic diseases between any of the groups with eating disorders and the control group.

Diseases related to pregnancy occurred in 21.4% of the pregnant women, from among these, gestational diabetes in 10.8%, gestational hypertension in 3.9%, and toxemia in 2.1%.

Significant difference was observable between the members of the group with eating disorders and those of the control group in terms of gestational hypertension, but on the basis of the logistic regression analysis it can be stated that this is caused by the higher body weight of these people rather than the affectedness by eating disorders. Childbirth sequelae occurred in 5.1% of the whole sample. The logistic regression model applied indicates that any previous occurrence of eating disorders almost doubles (OR=1.932; 95% CI: 1.011-3.693) the risk of sequelae of childbirth.

In the case of one quarter (25.3%) of the people in the sample, the pregnancy was threatened by miscarriage or entailed complications. In the control group this ratio was 23.7%, in the group containing all affected by eating disorders (n=170) 34.1%. On the one hand, this difference is significant, ($p<0.01$), on the other hand, two effects amount to it: the pre-pregnancy BMI of the respondent, and the affectedness by eating disorders. If affected by eating disorders, the chance of the pregnancy to become endangered by threatened miscarriage or to entail complications increases by 1.5 times (OR=1.473; 95% CI: 1.026-2.116; $p<0.05$). Caesarean section was applied at almost half of the deliveries: in the control group this ratio was 44.0%, whereas in the group with eating disorders understood in the broader sense significantly higher, 53.6% ($p<0.01$). The logistic regression model shed light to that eating disorders do not directly influence the course of the childbirth.

The issues motherhood and breastfeeding

Two-thirds of the mothers (67.5%) plan to adjust the period of breastfeeding to the needs of the baby; in this issue, no difference was seen between any of the groups with eating disorders and the control group. Thinking about whether they will be able to breastfeed at all, however, mothers with eating disorders experience more anxiety than the members of the control group (ED on EDI 44.0%; ED altogether 36.3%; control group 27.5%; both $p > 0.05$).

The answers to our questions concerning the duration of earlier periods of lactation revealed that mothers breastfed their babies for the same length of time both in the group with eating disorders and the control group (ED on EDI 10.2 months; ED altogether 10.0 months; control group 10.2 months).

At the same time, considerable difference is found regarding anxiety concerning motherhood: In the groups with eating disorders, the proportion of those respondents who experience a high level of anxiety induced by the responsibility that motherhood entails is higher by 10 per cent than that of the control group (ED on EDI 28.0%, $p < 0.01$; ED in total 27.1, $p < 0.01$; control group 17.7%).

Eating habits and the underlying psychological differences

In the self-test results, 7.3% of the respondents (84 people) claimed that earlier, either immediately before the pregnancy or even during the pregnancy they (had) suffered from eating disorders. Among them, only 7 people (8.3%) had received medical treatment for their eating disorders. More than half of those considering themselves as having eating disorders (54.8%) classified themselves in the other, EDNOS category. 22.6% of those regarding themselves as affected by eating disorders gave accounts, from among the classic eating disorders, of (previous) AN, and 15.5% of BN.

Dieting is present in the history of 8.7% of the control group, whereas in the group of respondents affected by eating disorders this ratio is about five times higher (ED on EDI 44.0%; ED altogether 47.6%; in both groups $p < 0.001$).

The opposite of this behaviour, overeating or binge eating at any time before or during this pregnancy characterized 2.5% of the control group. In the case of affectedness by eating disorders, however, it occurs in 20.0-21.2% (in both groups $p < 0.001$).

The cognitive symptoms of eating disorders were present in a strikingly high proportion in the history of respondents, in the group defined on the basis of EDI as well as

in the group regarded as having eating disorders in the broader sense. Worries about losing control over eating had occurred at any time before this pregnancy in 4.3% of the control group and in about half of the respondents having eating disorders (ED on EDI 43.8%; ED altogether 50.6%, in both groups $p < 0.001$). The feeling of food having dominance over life had previously occurred in 1.2% of the control group, whereas in the group having eating disorders this ratio was almost twenty times more (ED on EDI 21.3%; ED altogether 24.8%; in both groups $p < 0.001$). Constant worries in connection with body weight and body shape had been experienced before the pregnancy by 13.9% of the control group; the same symptom occurred in the absolute majority (ED on EDI 71.4%; ED altogether 65.2%) of those having eating disorders (in both cases $p < 0.001$).

Apart from the diet connected to gestational diabetes, 6.7% of the control group followed some special diet. This ratio is higher, 13.2% ($p < 0.05$) in the total number of people affected by eating disorders ($n = 170$). BMI prior to the pregnancy also plays a role in being committed to following a diet; with the increase of one unit the chance of starting a diet becomes 1.08 times higher (OR=1.076; 95% CI: 1.029-1.125; $p < 0.01$), while affectedness by eating disorders means a 1.84-time higher risk (OR=1.839; 95% CI: 1.054-3.206; $p < 0.05$).

More conscious nutrition, eating with more attention to detail during pregnancy is a general phenomenon. No difference can be found in this respect between the respondents with disturbed nutritional habits and those without them. At the same time, the eating habits of people with a history of eating disorders ($n = 170$) became more regular than those of the control group (83.9% vs. 74.4%, $p < 0.01$). The choice of better quality food also increased in proportion among those with current or previous eating disorders (72.4% vs. 55.5%, $p < 0.001$).

Conclusions

Based on the research results it can be said that taking into account physiological changes during pregnancy – changes in weight gain, nausea, vomiting, nutrition – the determination of eating disorders should be carried out in an unusual way: a number of physical and behavioural indicators, such as significant weight loss and self-vomiting, do not serve as a basis, but cognitive differences related to eating disorders can be clearly grasped. In the population of new mothers, leaving out a total of five items on the three diagnostic subscales of EDI, with modified critical ranges (8 points for the *Drive for thinness* subscale, 12 points for *Bulimia*, and 19 points for the *Body dissatisfaction* subscale) proved to be an appropriate screening tool for eating disorders. Although some items of SCOFF capture cognitive

dysfunctions in eating disorders well, by abandoning items that become irrelevant due to pregnancy, the remaining items alone are not sufficient for screening. Among the items examined by ORTO, only emotionally charged items, such as concerns about eating and health, showed differences between the group with eating disorders and the control group. However, by making a simulated diagnosis, a group whose members carry somatic and psychological symptoms of disturbed eating behaviors became distinct within the study sample. An important data is that the study was conducted on an average pregnant sample, and the size of the group currently characterized by eating disorders according to the stricter criteria is 4.4% (n=50), while by the broader definition, the size of the group with eating disorders extended to respondents having had eating disorders in the past is 14.8% (n=170). This means that these women appear regularly in specialized care, practically on a daily basis, and professionals meet patients with current or previous problems with eating and/or body image. In this study, the majority of respondents with eating disorders were overweight. Weight, although an important indicator of eating disorders, does not in itself justify or exclude the existence of an eating disorder. Someone with a low weight, normal weight or overweight may have an eating disorder – this underscores the importance of the regular monitoring of symptoms of eating disorders in gynaecology and prenatal care, as well as the discussion of experiences.

The research results confirmed that people with eating disorders tend to be more dissatisfied with their weight and tend to think of themselves as fatter than they really are. At the same time, changes in body shape are usually surrounded by a lesser degree of fear than changes in body weight kilograms. Against the background of weight gain associated with pregnancy, body weight negatively, eating disorders positively affected weight gain; and respondents with eating disorders were more dissatisfied with the weight change associated with their pregnancy. Among respondents with eating disorders, the proportion of respondents who wished to achieve a lower body weight after childbirth than before pregnancy is significantly higher, while even in the control group the average body weight to be achieved after pregnancy is significantly lower than the weight before pregnancy. A significant proportion of multipara respondents have excess weight associated with their previous pregnancy(-ies), so pregnancy in itself carries risks, leading to excess weight, body weight dissatisfaction and activities aiming at weight loss.

Irregular menstruation, which typically accompanies eating disorders, was also more than twice as likely to occur in the current survey among those who had eating disorders in the

year prior to pregnancy as in the control group – menstrual disorders were left untreated in more than half of the cases. It seems that not only eating disorders but also menstrual problems can receive little attention (either from the doctor or the patient), which are also associated with pre- and perinatal risks. Spontaneous miscarriage and abortion were significantly more common in the history of respondents with eating disorders, threatened miscarriage was 1.5 times more likely to develop, and childbirth complications were twice as likely. However, the higher occurrence of cesarean sections is mainly associated with the threatened miscarriage and the higher body weight of those affected. However, there was no difference in the occurrence of unplanned pregnancies and pregnancies resulting from medical intervention, as well as in the willingness to breastfeed.

At the same time, anxiety about breastfeeding abilities was more pronounced among people with eating disorders. Similarly, when it comes to motherhood, whether they become good mothers, people with eating disorders experience more anxiety.

When examining women and expectant mothers, the obstetrician-gynecologist should be aware that it is important not only to map current, but also those disordered eating behaviors that occurred in the past, as they can also play a role in the development of negative obstetric and gynaecological events. We must not only think about the classic, common types of eating disorders (AN, BN), but also their subclinical forms, as well as overweight/obesity in themselves, as well as through the disturbed eating attitudes and behaviors underlying them.

List of the author's own publications

Publications related to the thesis

1. Dukay-Szabó Sz., Simon D., Varga M., Koller O., Pataki Z., Rigó J., Túry F.: The applicability of the Eating Disorder Inventory in pregnancy. *Eat Weight Disord* (2021). <https://doi.org/10.1007/s40519-021-01197-2>
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