

Depression and anxiety in patients with pelvic floor disorders

Urszula Kalata¹, Michal M. Jarkiewicz², Ewa M. Barcz³ 

¹Multidisciplinary Hospital Warsaw Miedzylesie, Warsaw, Poland

²Institute of Psychiatry and Neurology, ³rd Department of Psychiatry, Warsaw, Poland

³Chair of Gynecology and Obstetrics Faculty of Medicine, University of Cardinal Stefan Wyszyński, Warsaw, Poland

ABSTRACT

Pelvic floor disorders are very common health problems in adult women affecting their quality of life in many aspects. One of them, still poorly recognised, is depression as well as anxiety. As the main goal of treatment is achievement of improvement of life quality we have to be aware of the incidence and severity of mood disorders in urogynecological patients. It is very important to be sure whether treatment of main disease is enough to solve depression and anxiety or we have to cope with them separately. The review sums up current knowledge on that very important topic.

Keywords: depression; anxiety; stress urinary incontinence; overactive bladder syndrome; pelvic organ prolapse

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INTRODUCTION

Depression and anxiety stand for the biggest percentage of mental illness in the world, and is recognized as the rising problem in global health [1]. Very often it is connected with disturbances in social functioning, poor self-esteem and generates costs as far as micro and macroeconomics expenditure are concerned. The frequency of depressive symptoms in older population (over 65 years old) is estimated as to be over 40% [2]. There are known risk factors for developing depression, among others cardiometabolic disorders, obesity, metabolic syndrome, type 2 diabetes, and CVD (cardiovascular disease) [3–5].

Pelvic floor disorders are known as serious risk factor for lowering quality of life in many aspects, and it is postulated that they may be a cause of depression, anxiety as well as sleep disorders. The incidence of pelvic floor disorders in women population is very wide and vary from 30–50% as far as stress urinary incontinence is concerned, 30% with overactive bladder syndrome (OAB) and up to 25% with pelvic organ prolapse in women over their 50s. Therefore, the problem of mental health similarly to other aspects of lowering of quality of life, should be taken into consideration during discussion on the importance of urogynecological treatment, education and the social awareness in this field.

THE CURRENT KNOWLEDGE ON THE CONNECTION BETWEEN PELVIC FLOOR DISORDERS, ANXIETY AND DEPRESSION

The aim of the review is to summarize the current knowledge on the influence of pelvic floor disorders on mental health problems as well as to recognize whether there are evidences of influence of the urogynecological treatment on above problems.

The most commonly occurring pelvic floor disorders are: overactive bladder, stress urinary incontinence, pelvic organ prolapse and combinations of the above.

Overactive bladder syndrome (OAB) is syndrome characterized three symptoms: urgency, frequent micturition during active hours and nocturia, with or without urge incontinence. OAB symptoms increase with advancing age. The incidence of this condition is estimated in the United States at over 35% of women aged 75 or older [6]. Overactive bladder symptom influence quality of life, professional performance, family and sexual lives [7].

In systematic meta-analysis of Melotti et al. [8] the authors showed an existence of correlation between OAB symptoms psychiatric disorders such as depression and anxiety. Both sexes suffered from similar severity of depression while men were more frequently diagnosed with

Corresponding author:

Ewa M. Barcz

Chair of Gynecology and Obstetrics Faculty of Medicine, University of Cardinal Stefan Wyszyński, Bursztynowa 2 St., 04–749 Warsaw, Poland

e-mail: e.barcz@uksw.edu.pl

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OAB related anxiety. The results of above paper should get attention of medical professionalist to coexistence of those problems and be aware of potential need for psychiatric intervention.

In cross-sectional population study conducted by Coyne in UK, Sweden and USA similar results were shown. The prevalence of bothering OAB was 22.5% and 33.7% for women in the UK and Sweden, and in the same time patients with OAB were significantly more likely to seek treatment, undergo psychiatric therapy for anxiety and depression compared healthy subjects [9].

In another Melotti's et al. study [10] 274 women with confirmed diagnose of OAB underwent questionnaire survey [International Consultation on Incontinence Questionnaire-Overactive Bladder (ICIQ-OAB), the Beck Depression Inventory (BDI), and the Beck Anxiety Inventory (BAI)]. The authors showed that severe or moderate depressive symptoms were appeared in 59.8% of patients and severe or moderate anxiety was confirmed in 62.4%. High scores of depression and anxiety were correlated with OAB severity. Very important finding was that the patients with severe depression had higher nocturia score than those with mild depressive symptoms. Authors also showed that patients with urge incontinence had higher depression score as compared to those with milder leakages ($p = 0.0261$). Similar findings were described as far as anxiety was concerned. Patients diagnosed with severe anxiety had more frequent night micturitions than those without anxiety and women with moderate anxiety had higher urgency incontinence score than with minimal anxiety [10]. Above study indicated that there are two major factors that matter in depression and anxiety development in case of OAB syndrome, that is nocturia and severe and frequent leakage of urine.

In Jacomo et al. [11] study 260 women with a clinical diagnosis of OAB were examined. It was observed that 50% had mild depression. The authors divided the study group to the cases with and without history of previous gynaecological surgeries. They confirmed that women with OAB and with a history of gynaecological surgery were 1.08 times more likely to demonstrate depression symptoms as compared to women who had ever been operated for gynaecological diseases, adding therefore previous medical intervention as an additional risk factor for depression in OAB patients.

Once the connection between OAB and depression and anxiety has been confirmed the influence of the comorbidity of them on medical cost was analyzed in Shiozawa study [12]. In case-control cohort study authors compared costs, professional performance among women with depression and OAB (case) and patients with depression without OAB (control). Emergency room (ER) visits, and percentage of

using antidepressive medications were statistically higher (all $p < 0.05$) among OAB patients. Patients with co-existence of OAB and depression also generated 13% higher total costs ($p < 0.0001$) and a higher seak leave days compared to controls (21.3% vs 16.9%; $p < 0.0001$) confirming that psychiatric disorders stand for a growing costs for the system in patients with incontinence [12].

Current studies additionally focus on the influence of treatment of OAB on the improvement of *lower urinary tract symptoms* (LUTS) and depression in the same time. Kim et al. [13] performed a prospective study of patients with overactive bladder. The examined patients were divided into two groups (with and without depressive symptoms) based on the Beck Depression Inventory (BDI) questionnaire. Then, 5 mg of solifenacin was prescribed for three months. In the group with depression statistically significant decreases in the BDI score were observed in 12-week period. The authors concluded that successful treatment of OAB symptoms with anti-muscarinic drugs may improve depression and quality of life.

The study conducted by Ahn et al. [14] focused on rarely examined aspect of OAB patient's mental health. Authors showed that patients with OAB were more likely to present obsessive symptoms than controls on the Korean version of the Maudsley Obsessional-Compulsive Inventory Questionnaire total score ($p = 0.006$). They postulated therefore that obsessive-compulsive symptoms may be an co-existing clinical problem OABs patients. Moreover, the authors showed the correlation between the severity of obsessive-compulsive symptoms and the severity of overactive bladder syndrome we should to pay more attention to psychiatric status of overactive bladder syndrome patients.

As shown above the overactive bladder syndrom the association with depression and anxiety is well documented.

Nevertheless, we cannot forget that also other pelvic floor disorders may have an influence on anxiety and depressive disorders. There are quite a few reports concerning the topic as far as stress urinary incontinence and pelvic organ prolapse are concerned.

Most authors focus on the stress urinary incontinence as a risk factor for depression in postpartum period as it is frequently recognized condition in young mothers. Jurascova et al. [15] tried to find risk factors in the Czech population for incidence of stress urinary incontinence (SUI) and postnatal depression (PD). Patients completed questionnaires six weeks and six months after birth. During the first six months after birth, 17.6% developed SUI and 17.3% displayed signs of PD. Severity of stress urinary incontinence at six weeks was not very intense but correlated with onset of postnatal depression after six months. On the other hand, PD at six weeks was not correlated to the appearance of SUI at six months. The study suggests that both directions of stress

urinary incontinence and postpartum depression correlations exists but there is a need for further studies.

There are even fewer reports on above problem in elderly or middle-aged women who suffer from SUI and the strength of the associations varies widely. Norwegian authors conducted a cross-sectional population-based survey study, and analyzed questionnaire data on UI, depression and anxiety from 5,321 women between 40 and 44 years. Among women with UI, the adjusted OR for depression was 1.64 (95% CI, 1.32–2.04) and for anxiety 1.59 (95% CI, 1.36–1.86) compared with women without UI. The authors noticed that UI was associated with both anxiety and depression it was stronger associated for mixed and urgency UI than for SUI [16]. Similar results were obtained by the same research group on the basis of over 16000 patients inquire [17]. In the study collecting data from patients who turned to eHealth with incontinence problems the prevalence of anxiety and depression in women with SUI was 12.4% and 3.2% respectively as in women with MUI/UI, 13.8% had anxiety and 10.6% had depression. In multivariate analyses, the odds ratio of having depression was 4.2 (95% CI = 1.4–12.3) for women with MUI/UI compared with SUI when controlling for other risk factors [18]. On the contrary in the Siddiqui [19] study there were no correlation between the existence of urinary leakage, depression and sleep disorders but in cases with incontinence the severity of depression was correlated with the severity of incontinence.

In the Polish study, the authors also showed the correlation between stress urinary incontinence, depression and anxiety. The observations revealed that 33.3% of patients showed significant levels of depression before SUI surgery. After 12 months the symptoms of depression were present in smaller number of subjects, i.e., 11.7% and anxiety was present in 13.3% of the entire group. The results may indicate that SUI itself may be a cause of mood disorders and its successful treatment may reduce the depressive symptoms [20].

Similar results were obtained by the Japanese authors [21]. They showed that at baseline, proportions of the patients with anxiety and depression and SUI were 21.6% (22/102) and 24.5% (25/102), respectively. The median ICIQ-SF (International Consultation on Incontinence Questionnaire-Urinary Incontinence Short Form) score, HADS (Hospital Anxiety Depression Scale) — Anxiety score, and HADS-Depression score were significantly higher after 12 months after surgery as compared to pre-operative period. Improvement of ICIQ-SF and depressive symptoms score in HADS were significantly correlated after one-year observation.

Another group of researchers showed that surgery in SUI gives better results also as far as depression and anxiety is concerned than the pelvic floor training. In a prospective longitudinal study, patients with confirmed/diagnosed SUI (no 32) were examined with standardized questionnaires (sociodemographic data sheet, FACT-G [sociodemographic data

sheet, Functional Assessment of Cancer Therapy — General (FACT-G), Incontinence Quality of Life Questionnaire (I-QOL, HADS) before and two months after surgery. Women in the conservative group [21] underwent eight, once-weekly supervised pelvic floor training exercises. The authors showed that SUI surgery was more efficient as physiotherapy as far as anxiety and quality of life was concerned [22].

Another very interesting problem that has still been poorly recognized is the correlation or co-existence between pelvic organ prolapse (POP), depression and anxiety. Still there is no consensus on the relationship between those problems.

There are few studies examining co-existence depression and/or anxiety with pelvic organ prolapse evaluating impact of this comorbidity on quality of life and the outcomes in postoperative period. In one of them authors compared patients with bothering POP and healthy controls. Patients were examined with the Pelvic Floor Impact Questionnaire (PFIQ), Pelvic Floor Distress Inventory, and the Patient Health Questionnaire-9 (PHQ-9) at before and six months post-operatively. The authors showed that POP patients had depression five times more frequent than women without pelvic organ symptoms. In addition, patients with depression had higher PFIQ scores showing their worse quality of life. Surgery also improved PHQ-9 scores. The authors therefore concluded that depressive symptoms are common in women with prolapse with tendency to regression following surgical treatment. The important remark is that the patients with depression seems to assess their symptoms as more bothering than subjects without POP [23].

Pizzarro-Berdichevsky et al. [24] in order to find possible correlation divided POP patients into two groups: with and without depression. All patients underwent physical examination: POP quantification (POP-Q), pelvic ultrasound (US), voiding diaries, stress test, pad test as well as inventory questionnaires (Pelvic Floor Distress Inventory [PFDI-20], Prolapse QoL [P-QoL] and the Goldberg Health Questionnaire [GHQ-12]). GHQ-12 was positive in 47 (51.6%) patients. The authors showed that patients with POPQ have similar GHQ-12 scores as compared to healthy subjects. However, GHQ-12 was positively correlated with PFDI-20 GHQ-12 was shown as an strong risk factor for lower quality of life. Similarly, to previously cited authors they concluded that patients with depression or anxiety interpret their symptoms differently, usually as more bothering [24].

Larouche et al. in prospect cohort study, investigated the role of succesful POP surgery as a factor influencing depression and axiety in operated subjects. Patients underwent questionnaire survey before and six weeks after surgery (Beck Depression and Beck Anxiety Inventories, Pain Catastrophizing Scale, Pelvic Floor Distress Inventory, Pelvic Floor Impact Questionnaire). The first observations

showed that depression and anxiety symptoms were not severe in examined group but the final analysis confirmed that surgery caused improvement in preoperative scores for Beck Anxiety Inventory, Pelvic Floor Distress Inventory, and Pelvic Floor Impact Questionnaire [25].

In Collin's study evaluating the influence of anxiety trait on the subjective result of the POP reconstruction, patients underwent examination using the Spielberger State-Trait Anxiety Inventory and the Pelvic Floor Distress Inventory 20 before and over three months after the surgery. Authors showed that the anxiety trait was not an independent risk factor for worse subjective results of POP surgery. Unfortunately, the authors did not analyse the influence of surgery success rate with the anxiety improvement, nevertheless the result show above patients are not at risk of worsening the anxiety symptoms [26].

CONCLUSIONS

The analysis of current literature indicates the connection between pelvic floor disorder, depression and anxiety. It shows the interpenetration of symptoms, suggests the positive influence of proper treatment of urogynecological disorders on mental health, nevertheless does not show the whole picture of the problem. Therefore, there is a need for further studies and analysis as the improvement of quality of life is the major goal in pelvic floor disorders treatment.

Article information and declarations

Conflict of interest

All authors declare no conflict of interest.

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