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SEXUAL DYSFUNCTION IN CROATIAN PATIENTS WITH OBESITY

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SUMMARY

Background: *Patients with obesity may have symptoms of sexual dysfunction (SD). Little is known about these symptoms in obese patients in Croatia and the aim of this study was to explore them.*

Subjects and methods: *This was a cross-sectional study carried out in tertiary healthcare centre at the Croatian Obesity Treatment Referral Center in University Hospital Center of Zagreb. 103 patients (72 female, 31 male, mean age 48.7±11.87 years, mean BMI 40.42) were included. SD symptoms were assessed using the internationally acclaimed questionnaire Arizona Sexual Experience Scale (ASEX), that was recently validated for Croatian language. Patients were also administered a questionnaire, prepared for this purpose, that enquired about their previous known chronic disorders. Statistical analyses included t-test, chi-squared test and bivariate Pearson's correlations.*

Results: *Average total response on the questionnaire was 12.4 (women 13.2, range 3-30; men 10.6, range from 5-19). A total score of 19 or more was present in 5 (4.8 %, range from 19-30, average 22.4; 1 man, 4 women), at least one question with a score 5 or greater on any item was found in 36 (34.9 %, 5 men, 31 women), while a score of 4 or more on three items was found in 20 patients (19.4 %, 2 men, 18 women). Overall median response was 3 (range 1-6). Women were found to have more pronounced symptoms of SD ($p<0.05$). The overall results on ASEX were found to be in significant correlation with regard to depression ($r=0.22$, $p=0.03$), as well as anxiety ($r=0.2$, $p=0.04$). Significant correlations were also found with regard to age ($r=0.31$), mobility ($r=0.25$), and pain/uneasiness ($r=0.22$) ($p<0.05$).*

Conclusions: *This study brings valuable observations on the presence of SD symptoms in obese patients in Croatia. SD symptoms were found to be present in up to one-third of our patients, more pronounced in women, and in significant correlation with depression and anxiety. However, median response on ASEX suggests that overall SD symptoms in our group of patients are not that expressed.*

Key words: *obesity - sexual dysfunction - Arizona Sexual Experiences Scale - ASEX - Croatia*

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INTRODUCTION

Over 4 million people were reported to die each year as a result of being overweight or obese in 2017 according to the global burden of disease (WHO 2021). The issue has grown to epidemic proportions, and, similarly the prevalence of overweight and obese increased during recent years in Croatia, with more than half of both men and women being overweight (Dzakula et al. 2014, Fister et al. 2009).

Numerous factors were found to contribute to obesity and different studies tried to address this, and well as treatment options (Gallo & Cheskin 2021, Hurtado & Acosta 2021). The Croatian Obesity Treatment Referral Center at Division of Endocrinology in University Hospital Center Zagreb since 2016 offers 5-day multidisciplinary structured outpatient weight loss program for obese people. Different domains are assessed through a multidisciplinary approach, including sexual dysfunction. This problem was highlighted in the published literature before (Fuchs et al. 2020, Faubion et al. 2020), and it is known that patients with obesity may have dyadic consensus problems with their partners. Their excessive weight may cause distress and difficulty in expressing their feelings and results in marital problems and depression and decrease quality of life (Sarwer et al. 2012, McGahuey 2000).

The objective of this study was to assess the presence and patterns of SD in our group of obese patients.

SUBJECTS AND METHODS

This cross-sectional study was carried out in a tertiary healthcare centre at the Croatian Obesity Treatment Referral Center at Division of Endocrinology in University Hospital Center Zagreb. The study was approved by the Ethics Committee of our institution. All of the participants signed an informed consent form.

Patients' weight (kg) and height (m), waist and hip circumference (cm) were measured and body mass

index (BMI) (weight/height^2) was calculated. To assess gender-specific BMI Welch t-test was used. Inclusion criterion was BMI ≥30 kg/m^2. Exclusion criteria were patients with pituitary and/or adrenal disease and untreated thyroid disease.

SD symptoms were assessed using the internationally acclaimed questionnaire Arizona Sexual Experience Scale (ASEX), that was previously translated and validated for Croatian language with permission. This questionnaire enquires about the overall level of SD during the previous week, including the day of completing the questionnaire. There are 5 questions, each response is scored from '1 (e.g. extremely strong)' to '6 (e.g. no sex drive)', with total score from 5 to 30, and higher score representing more pronounced symptoms of SD. SD is defined, as suggested by the authors of this questionnaire, as a total score of 19 or more, or 5 or more on any item, or 4 or more on three items (Arizona Board of Regents, University of Arizona 1997, McGahuey et al. 2000, Simple and Practical Mental Health 2021).

Patients were also administered a questionnaire, prepared for this purpose, that enquired about their previous known chronic disorders including those diagnosed with MDD and self-reported depression and anxiety.

Statistical Analysis

Statistical analysis was performed in the R program (version 3.6.1). Analysis included t-test, chi-squared test and bivariate Pearson's correlations with $p<0.05$ considered to be significant.

RESULTS

103 patients (72 female, 31 male, mean age 48.7±11.87 years, mean BMI 40.42 kg/m^2) were included. Overall mean BMI was 40.42 (range 30.1-68.20) kg/m^2), median was 38.84, and mode was 34.

14 patients reported depression and/or anxiety when asked about their chronic illnesses. According to the analysis of psychopharmacotherapy that they reported taking 10 of them are taking therapy for the treatment of depression (antidepressants), while 4 of them are only on anti-anxiety therapy (precisely, they have only benzodiazepines in their therapy). Average total response on the questionnaire was 12.4 (women 13.2, range 3-30; men 10.6, range from 5-19). Median response was 3 (range 1-6)

A total score of 19 or more was present in 5 (4.8%, range from 19-30, average 22.4; 1 man, 4 women), at least one question with a score 5 or greater on any item was found in 36 (34.9%. 5 men, 31 women), while a score of 4 or more on three items was found in 20 patients (19.4%, 2 men, 18 women).

20 patients (20.42%, 2 men (6.45%), 18 (25%) women) were found to have a higher overall score than average response of 3.8 on ASEX. 49 were not sexually active during the previous week, 53 were, one patient didn't provide the information.

Among the items on ASEX, majority of patients reported issues (score 5 or more on the questionnaire) with sex drive (N=26, 3 men, 23 women), followed by issues with sexual arousal (N=17, no men, 17 women), and women reporting inadequate lubrication or wetness (N=9)

Women were found to have more pronounced symptoms of SD, and this finding was present both in the group that was, as well as in the group that was not sexually active in the previous week ($p<0.05$). Women were found to have significantly higher mean results than men (3.46 vs. 2.81): $t(91.098)=3.53$, $p<0.001$, and a percentage obtaining a score higher than average response of 3.8 on ASEX was found to be significantly higher (25% women vs. 6.45% men): $\chi^2(1)=4.76$, $p=0.03$.

The overall results on ASEX were found to be in significant correlation with regard to depression ($r=0.22$), and anxiety ($r=0.2$), and significant correlations were also found with regard to age ($r=0.31$), mobility ($r=0.25$), and pain/uneasiness ($r=0.22$) ($p<0.05$).

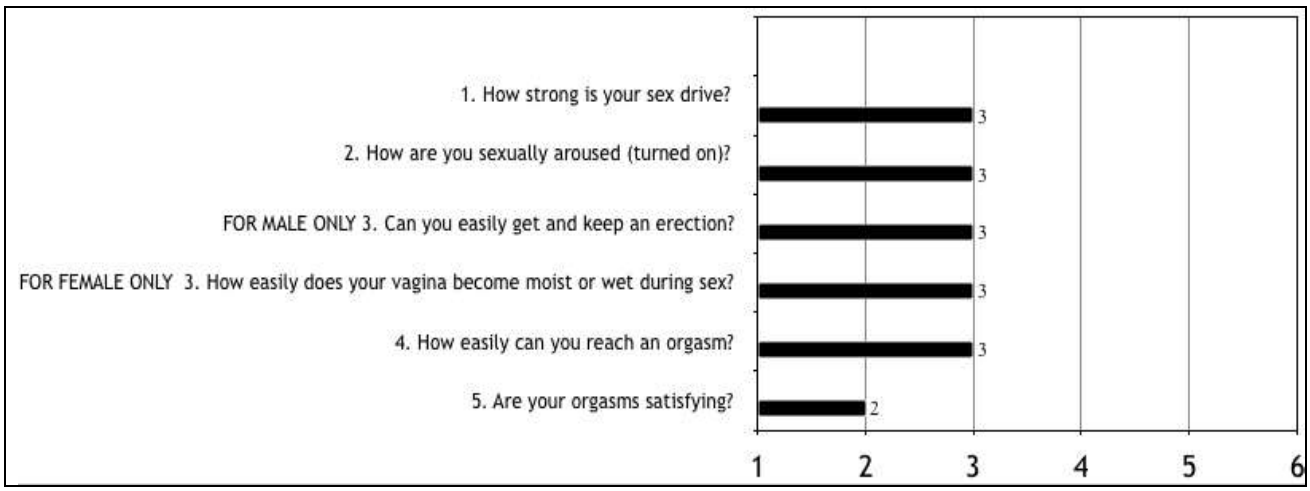

Figure 1. Median responses on ASEX

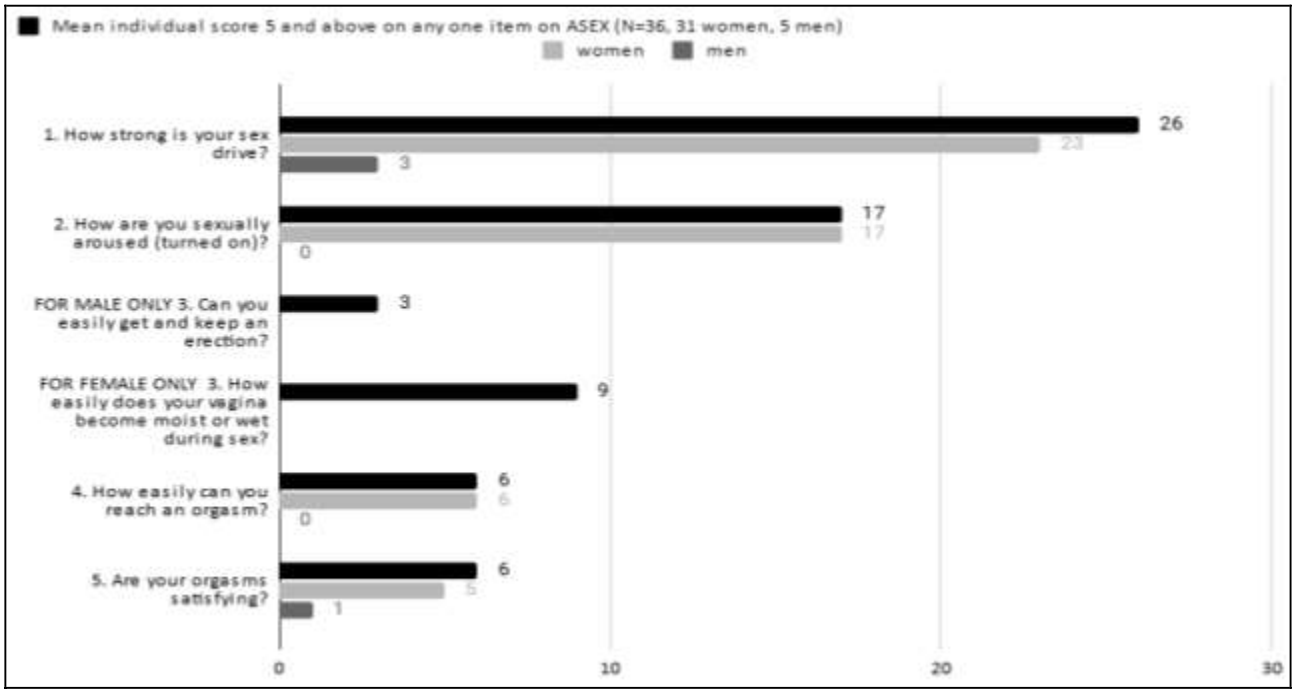

Figure 2. Mean individual score 5 and above on any one item on ASEX

Similarly, overall score above 3.8 was found to significantly correlate with depression (r=0.27), and anxiety (r=0.21) as well as age (r=0.27), mobility (r=0.24), pain/uneasiness (r=0.23), and spine disorders (r=0.23) ($p<0.05$) but there was no significant correlation with body mass index (r=0.08, p=0.37).

It was also found that response on at least one question with a score 5 or greater on any item on ASEX significantly correlate with depression (r=0.31, $p<0.05$).

DISCUSSION

This study aimed to assess the presence and patterns of SD in our group of obese patients. We aimed to introduce the topic by administering the questionnaire through the 5-day educational multidisciplinary weight loss program for obese patients in our daily hospital at Division of endocrinology, and if needed to later on open discussion during the consultation hours.

SD symptoms were found to be present in up to one-third of our patients, more pronounced in women, and in significant correlation with depression and anxiety.

A few studies have evaluated the association of sexual difficulties with obesity in Croatia. Low satisfaction with one's body was previously found to correlate with inhibited arousal and sexual pain disorders among women (Stulhofer et al. 2005). Published literature suggests increased prevalence of erectile dysfunction (ED) among obese patients compared with men of normal body weight (Zabelina et al. 2009). Being overweight or obese was found to be associated with rapid ejaculation (Stulhofer & Bajic 2006) by an earlier study investigating prevalence of erectile and ejaculatory difficulties among men in Croatia, among other factors e.g. education, alcohol consumption, stress and anxiety, holding traditional attitudes and moderate physical activity. Obese men were over 4 times more likely to have erectile difficulties than men with normal BMI. Three (9.6%) male patients from our group indicated that they experience issues with ED having answered with 5 or more on ASEX. However, ASEX doesn't cover the domain of ejaculation and possibly asking this question separately would've provided some more data.

Median response on ASEX suggests that overall SD symptoms in our group of patients are not that expressed. Previous study investigating SD in obese male patients using ASEX found mean score to be 15.87±7.29 (range 5.00-28.00) (Öncel et al. 2020) (which is above our findings in male patients 10.6 (range from 5-19), but also above our overall result of 12.4, and finding in women 13.2 (range 3-30). Among women, one patient, while having answered the first question on sex drive with very strong, and the second question on sexual arousal with extremely easily, did not fill the rest of the questionnaire, and her total response was 3. We wanted to mention this exception, since possible total score ranges from 5 to 30 as suggested by authors (Arizona Board of Regents, University of Arizona 1997, McGahuey et al. 2000).

A group of authors found also significantly higher scores on ASEX in morbidly obese female than control group but there was not found significant correlation in between morbidly obese female SD and BMI (Gonenir-Erbay et al. 2017). Our findings could be explained that our sample group consisted only of obese patients with a mean BMI of 40.42kg/m^2 similar to the previous mentioned paper (Gonenir-Erbay et al. 2017).

We found that overall results on ASEX were in significant correlation with depression which is consistent of bidirectional association between depression and SD in previous literature (Atlantis & Sullivan 2012).

Previously we reported that lower urinary tract symptoms (LUTS) is significant higher among obese women (Matovinović et al. 2020) which could have also negative impact on SD. In previous research we revealed that mild levels of depression and hopelessness on the DASS-21 and BHS scale in people with obesity was not statistically significant correlation with weight change (Vuksan-Ćusa et al. 2020). In the future investigation of our obese people we will see the impact of losing weight on total score of ASEX.

We showed significant correlation between results on ASEX with depression, mobility and pain/uneasiness what is at least partly consistent with recently published data about association between sexual function scores of females and many comorbidities (Polland et al. 2019). Also, great importance should be given to further detection and treatment of obesity itself in the context of mental health disorders because the very desire for higher caloric intake, which is usually the basis of obesity itself should be detected and treated as a mental health disorder (Dimitrijevic et al. 2015).

The ASEX seems to be a reliable and simple test for identifying and quantifying sexual dysfunction in Croatian populations of obese women and male.

The limitation of this study was that there was no control group (Stulhofer et al. 2005, Stulhofer & Bajic 2006). Previous published literature on this matter suggest that the findings in our group of obese patients are similar to the prevalence of SD noted in community samples. Another limitation is that our sample consisted mainly of women, which could be explained by the fact that obesity was found to be more prevalent among women (WHO 2020) in the world, although almost similar prevalence of obesity regardless of gender was previously recorded in Croatia (Fister et al. 2009). Also, ASEX doesn't cover the domain of ejaculation and possibly asking this question separately would've provided some more data.

CONCLUSIONS

This study brings valuable observations on the presence of SD symptoms in obese patients in Croatia. SD symptoms were found to be present in up to one-third of our patients, more pronounced in women, and in significant correlation with depression and anxiety. However, median response on ASEX suggests that overall SD symptoms in our group of patients are not that expressed. Future research will focus on looking into the relationship between losing weight and minimizing symptoms of SD.

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Conflict of interest: None to declare.

Contribution of individual authors:

Martina Matovinović - conceived and designed the study, collected the data and contributed data or analysis tools, first draft, interpretation of the results, approval of the final version.

Katarina Ivana Tudor - helped design the study, collected the data and contributed data or analysis tools, first draft, interpretation of the results, approval of the final version.

Filip Mustač - collected the data and contributed data or analysis tool, first draft, interpretation of the results, approval of the final version.

Dujam Mario Tudor & Andrej Kovačević - collected the data and contributed data or analysis tool.

Ervina Bilić -interpretation of the results, approval of the final version.

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