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Paper Accepted*

ISSN Online 2406-0895

Original Article / Оригинални рад

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Depression and distress in couples with infertility – Who suffers more?

Депресија и стрес код парова са инфертилитетом – ко пати више?

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Received: June 1, 2023

Revised: November 10, 2023

Accepted: November 11, 2023

Online First: November 21, 2023

DOI: <https://doi.org/10.2298/SARH230601110P>

***Accepted papers** are articles in press that have gone through due peer review process and have been accepted for publication by the Editorial Board of the *Serbian Archives of Medicine*. They have not yet been copy-edited and/or formatted in the publication house style, and the text may be changed before the final publication.

Although accepted papers do not yet have all the accompanying bibliographic details available, they can already be cited using the year of online publication and the DOI, as follows: the author's last name and initial of the first name, article title, journal title, online first publication month and year, and the DOI; e.g.: Petrović P, Jovanović J. The title of the article. *Srp Arh Celok Lek*. Online First, February 2017.

When the final article is assigned to volumes/issues of the journal, the Article in Press version will be removed and the final version will appear in the associated published volumes/issues of the journal. The date the article was made available online first will be carried over.

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Depression and distress in couples with infertility – Who suffers more?

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SUMMARY

Introduction/Objective Infertility is the inability to achieve pregnancy after a year or more of unprotected sexual intercourse. It is a clinical and social issue affecting both genders. Infertility can cause anxiety, depression, and personal distress with long-lasting consequences. Men and women tend to cope with infertility in different ways and reliance on certain coping mechanisms can be harmful. The study aims to examine the correlative effects of infertility, distress and depression among couples, and investigate gender disparities in levels of suffering.

Methods The research is a cross-sectional study that included 168 participants (84 couples) divided into two groups, control and infertility group. Beck Depression Inventory Second Edition (BDI-II) and the Brief Symptom Inventory (BSI) were used to identify and assess psychological symptoms. Statistical analysis was performed using SPSS at the 0.05 level of significance.

Results The results showed that there was a significant difference in the scores on BDI and BSI scales between the infertile and fertile groups, with participants in the infertile group reporting higher levels of depression and distress ($t = -2.724$, $df = 166$, $p < 0.01$; $t = -3.609$, $df = 166$, $p < 0.01$). Women had significantly higher scores on the depression scale than men ($t = -2.079$, $df = 166$, $p < 0.05$).

Conclusion In summary, the study found that couples dealing with infertility experience higher levels of distress and depression compared to the control group. Women in these couples are particularly vulnerable to depression. The study highlights the importance of addressing the mental health needs of individuals and couples dealing with infertility, in addition to treating the underlying medical issues.

Keywords: infertility; depression; anxiety; male; female

САЖЕТАК

Увод/Циљ Инфертилитет представља немогућност остваривања трудноће након годину дана незаштићених сексуалних односа. Овај клинички и социолошки проблем погађа оба пола. Неplодност може довести до анксиозности, депресије и дистреса са дугорочним последицама. Мушкарци и жене се често другачије суочавају са овим проблемом, а ослањање на извесне механизме одбране може бити штетно. Циљ ове студије био је испитивање међузависних односа неплодности, депресије и дистреса, као и испитивање разлике међу половима у нивоу патње узроковане неплодношћу.

Методе Сprovedена је студија пресека која је укључивала 164 учесника (84 парова) подељених у две групе, контролну и групу са инфертилитетом. *Beck Depression Inventory* друго издање (*BDI-II*) и *The Brief Symptom Inventory* (*BSI*) су коришћени за детекцију и процену психолошких симптома. Статистичка анализа вршена је у статистичком софтверу *SPSS* на нивоу значајности 0,05.

Резултати Резултати су показали да постоји статистички значајна разлика у скоровима на *BDI* и *BSI* скали између две испитиване групе, где неплодни парови пријављују више нивое депресије и дистреса ($t = -2.724$, $df = 166$, $p < 0.01$; $t = -3.609$, $df = 166$, $p < 0.01$). Међу неплодним паровима, жене суи мале више нивое депресије од мушкараца ($t = -2.079$, $df = 166$, $p < 0.05$).

Закључак Студија је показала да инфертилни парови имају значајно више нивое депресије и дистреса од парова из контролне групе. Такође, женски партнери у паровима са инфертилитетом су нарочито подложне депресији. Студија показује значај процене и одржавања менталног здравља код неплодних парова у циљу лечења самог инфертилитета.

Кључне речи: инфертилитет; депресија; стрес; мушки пол; женски пол

INTRODUCTION

In the 11th revision of the International Classification of Diseases (ICD-11) infertility is defined as a disease of the male or female reproductive system defined by the inability to achieve pregnancy after 12 months or more of regular unprotected sexual intercourse [1]. So far it remains a comprehensive health issue which affects millions of childbearing aged people. Despite efforts to address this worldwide problem, infertility continues to rise in many

countries, regardless of the socio-demographic index [2]. It remains a significant personal, clinical, and social issue that affects both men and women globally.

Infertility is a complex issue with numerous factors contributing to its development. These factors can be classified into four standard categories: female factors, male factors, combined causes, and unexplained infertility. Psychological factors and fertility difficulties have reciprocal cause-effect relationships, potentially leading to devastating effects on one's mental wellbeing. In addition to being classified as a disease, infertility is often viewed as an inability to fulfill a biological and social role of producing offspring, particularly in traditional societies where it is seen as a significant responsibility for both men and women. These social expectations can be distressing and create restlessness, which can lead to various mental health issues [3]. Furthermore, infertility as a health issue, coupled with the various forms of therapy that infertile couples frequently undergo, often resulting in a series of failures, can cause couples to constantly fluctuate between confidence and hopelessness, which creates conditions for stress to develop. Higher levels of personal distress and lower quality of life that can emerge as consequence of such events represent a risk factor for posttraumatic stress disorder [4]. Approaching infertility and its treatment in an emotionally unstable state, whether it originates from before infertility awareness or from the infertility itself, can increase the likelihood of giving up, feeling defeated, and being unwilling to continue pursuing the goal of conceiving, ultimately leading to a lack of endurance in the infertility management process [5]. These findings emphasize the crucial role of mental health in individuals struggling with infertility.

Studies have demonstrated that men and women tend to cope with infertility as a life-crisis moment in different ways [6, 7]. While coping mechanisms are essential in managing stress [8] they can be inadequate and even exacerbate it. One study found that women tend to rely on escape/avoidance strategies, while men tend to prefer distancing and planful problem-solving. The study also revealed a correlation between the use of escape/avoidance as a coping mechanism and higher levels of reported stress in individuals [9]. This suggests that relying on such strategies may be potentially harmful and unhelpful in overcoming infertility-related psychological difficulties. These findings and correlations are beneficial in understanding fundamental differences between men and women in terms of approaching infertility as a disease, perceiving it as an incompetence, and acknowledging potential discrepancies in stress levels and emotional despair between genders.

Distress and emotional instability can create a vicious circle with infertility, leading to changes in reproductive function [10]. Being unable to fulfill the biological and social role of

providing a progeny despite a desire to do so can result in frustration, a life crisis, emotional disequilibrium and social stigma [11]. Although the social component is typically emphasized in conservative and developing countries, the impact of infertility on mental health is observed in developed countries as well [12]. Infertility is a multidimensional stressor that causes anxiety, depression, and personal distress, and its consequences can be long-lasting, even after achieving parenthood [13].

As mentioned earlier, psychological factors and fertility difficulties have a reciprocal cause-effect relationship, with significant effects on mental health. Therefore, the aim of this study was to examine the correlative effects of infertility, distress, and depression among couples with infertility. Moreover, given the differences in the way genders cope with this disability and overcome stress, we aim to investigate whether there is a disparity in levels of suffering between men and women.

METHODS

Participants

In order to conduct this study, we formed the sample that included 168 participants (84 couples). The participants were divided into two groups: (a) infertile group (index group, $N = 84$) and (b) fertile group (control group, $N = 84$). The infertile group comprised 42 couples, who were patients of the Clinic of Urology, University Clinical Centre of Serbia. All couples have been trying to achieve pregnancy for at least 12 months before starting their infertility related examinations. Male patients, married or in an extramarital union, came with their female partners to examine the cause of infertility. Female reasons of infertility were not yet excluded. The examination involved sperm analysis (spermogram test), which was free at the time. All infertile couples that have undergone a test during a period of time in the year 2013. were included, regardless of their fertility testing results. When it comes to the fertile group, it consisted of couples with children. They were selected randomly in the kindergarten institution. Couples from infertile and control groups were not matched according to socio-demographic characteristics.

Procedures and measures

The research was designed as a cross-sectional study. Before joining the research, all respondents were acquainted in detail with the course and significance of the research, as well

as their role, obligations and rights. In accordance with the above, the participants have signed an informed consent to participate in the research before starting the research process.

Data on the participants' age, sex and marital status were obtained through a brief structured socio-demographic questionnaire.

To identify and assess depressive symptoms, we used The Beck Depression Inventory Second Edition (BDI-II) [14]. It contains a 21-item self-report instrument that intends to assess the presence and severity of symptoms of depression as listed in the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV). Each of the 21 items, that correspond to a symptom of depression, is summed to give a single score for the BDI-II. There is a four-point scale for each item, ranging from 0 to 3. On two items (16th and 18th) there are seven options to indicate an increase or decrease of appetite and sleep. Cut score guidelines for the BDI-II are given with the recommendation that thresholds can be adjusted based on the characteristics of the sample and the purpose of the use of the BDI-II. Total score of 0-13 is considered minimal range, 14-19 mild, 20-28 moderate and 29-63 is severe.

To identify self-reported clinically relevant psychological symptoms among participants, we used The Brief Symptom Inventory (BSI) [15]. It consists of 53 items covering nine symptom dimensions: Somatization, Obsession-Compulsion, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic anxiety, Paranoid ideation and Psychoticism; and three global indices of distress: Global Severity Index, Positive Symptom Distress Index and Positive Symptom Total. The global indices measure current or past level of symptomatology, intensity of symptoms, and number of reported symptoms, respectively. Respondents rank each feeling item (e.g., "your feelings being easily hurt") on a 5-point scale ranging from 0 (not at all) to 4 (extremely). Rankings characterize the intensity of distress during the past seven days.

The research was conducted according the principles of good scientific practice with the approval of the Ethics Committee of the University Clinical Centre of Serbia (No. 1040/29) while all obtained data are kept confidential.

Statistical analysis

The obtained data was imputed into SPSS for Windows (Armonk, NY: IBM Corp.) Descriptive statistics indicators, that is, measures of central tendency (arithmetic mean - \bar{x}) and measures of variability (standard deviation – SD) were used to analyze socio-demographic

characteristics of participants. For further data processing we conducted analysis of variance, multiple regression, T test and correlations. Analysis was done on the level of significance (alpha level) 0.05.

RESULTS

The findings of the data collected from the participants can be summarized under two sections: results showing differences between the two groups – infertile and fertile (A) and results showing the gender differences (B).

Our sample included 168 participants (84 couples), adults, aged 20 to 46 years ($\bar{x} = 35.23$, $sd = 4.974$).

Results showing differences between infertile and fertile groups indicate a significant difference in the scores on BSI and BDI scales ($p < 0.05$). T test for independent samples, which tested difference between these groups, shows significant relation of BSI and BDI scores with infertile group ($t = -2.724$, $df = 166$, $p < 0.01$; $t = -3.609$, $df = 166$, $p < 0.01$). These results show that participants from the infertile group have higher levels of depression and distress compared to the control group (Figure 1, Table 1).

Results showing the gender differences indicate that women have statistically significantly higher scores on the depression scale compared to men. T test for independent samples which tested difference between genders shows higher BDI scores among females ($t = -2.079$, $df = 166$, $p < 0.05$). Our results show that females cope with depression of higher intensity, compared to the male population of our sample (Figure 2).

DISCUSSION

A cross-sectional study was conducted to investigate the prevalence of mental health issues, specifically depression and distress, among patients facing infertility. Additionally, the study aimed to explore potential gender differences in depression and distress rates. Given the growing increase in infertility, this research provided critical insights to better understand the risks and consequences associated with this condition. The results of the study revealed significantly higher levels of both depression and distress among participants in the infertile group compared to the group of fertile couples. Moreover, the results indicated higher scores on the depression scale among women in the infertile group.

Our study observed higher rates of depression and distress in individuals experiencing infertility. Such findings are well-documented and can be attributed to the significant stress associated with the inability to conceive children [16]. However, it is important to acknowledge that the psychological burden experienced by infertile individuals extends beyond just the physical aspects of their condition. Some studies showed that social stigma surrounding infertility can further exacerbate mental health issues [11] resulting in a deepening of psychological distress associated with the disease.

Depression is one of the most common mental health issues worldwide and significantly impacts an individual's everyday functioning and quality of life. Among individuals experiencing infertility, studies have reported higher depression levels, even comparable to those of patients diagnosed with cancer [17] highlighting the severity of the psychiatric consequences associated with infertility. This emphasizes the importance of prioritizing mental health when providing healthcare to individuals and couples experiencing infertility. Our findings are consistent with numerous previous studies, which have demonstrated that the inability to achieve parenthood leads to depressive symptoms [18, 19].

These findings are understandable, given the lower self-esteem, sexual performance, and confidence reported by infertile men compared to control groups [20] as well as negative effects on women's self-esteem and sexual activity [21]. In fact, a study examining communication among women with infertility revealed that many women discuss infertility only with close family and friends, and that 7% of these women were unable to discuss the issue with their spouse [22]. Moreover, infertility related stigma plays an important role in marital distress in infertile women which contributes to marital communication difficulties leading to worsening of mental health issues [23].

Most studies examining the link between mental health and infertility have focused primarily on women's health. For example, a prospective study involving 416 women with infertility revealed that the more depressed an infertile woman is, the less likely she is to begin infertility treatment, and the more likely she is to drop out after only one cycle [5]. These findings underscore the extent to which infertility and mental health are inextricably intertwined. Researchers have also demonstrated that discontinuation of treatment is most often due to psychological reasons, despite a good prognosis and adequate financial resources to pay for treatment [24]. Moreover, numerous studies have highlighted the impact of mental health on treatment outcomes, with lower pregnancy rates observed in women who are more distressed prior to and during treatment [25, 26].

Our study showed that females are more prone to depressive symptoms compared to men in infertile couples. Palomba and colleagues examined the influence of stress and quality of life on female fertility and found that distress-mediated symptoms of infertility affect more women than man, which stands in agreement with our findings. In this study findings were related to lifestyle choices, more precisely due to focusing on career, education and waiting for the right moment of motherhood [27].

Recent findings also indicate that, even though this disability affects both genders, women are more strongly affected by this disability compared to men due to higher social stigma [28, 29]. A recent review conducted by Xie et al, that included numerous studies regarding social stigma in infertility, emphasized that women are more prone to distress and psychological burden of infertility stigma compared to men [30]. Moreover, a gender difference for this variable can as well be explained by the fact that men often hide psychological problems and are reluctant to report symptoms. Namely, masculine prototype incited anger, which led to hiding all the feelings that can be declared feminized. Moreover, in many societies, regardless of infertility being caused by male factors, women are the ones that are blamed and marked in society which intensifies mental struggle and leads to worsening of distress and depressive symptoms among them.

The study has limitations concerning the relatively small sample size and single-centre experience. In addition, sociodemographic matching has not been made between participants in examined groups.

CONCLUSION

The results of this study demonstrate that couples with infertility experience significantly higher levels of distress and depression compared to the control group. Moreover, women in these couples are particularly vulnerable to depression. These findings emphasize the importance of addressing the mental health needs of individuals and couples dealing with infertility, in addition to treating the underlying medical issues. Without appropriate psychological care and counseling, individuals may be at risk of serious social and emotional consequences, and may struggle to cope with the challenges of infertility treatment. As such, a multi-disciplinary approach is necessary to help couples achieve their goal of parenthood while also addressing their mental health needs. By providing psychological support and care, healthcare providers can help to prevent long-lasting psychological disruptions and promote

better overall functioning and quality of life for individuals dealing with infertility. Ultimately, addressing mental health concerns can have a positive impact on the fertilization process and increase the likelihood of successful treatment outcomes.

Conflict of interest: None declared.

Paper accepted

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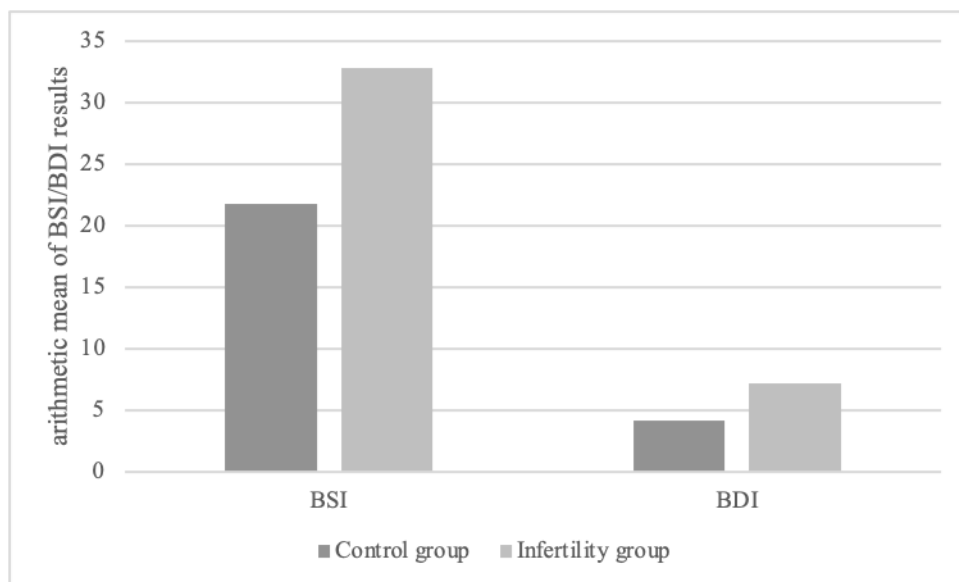


Figure 1. Graphic display of Brief Symptom Inventory (BSI) and Beck Depression Inventory (BDI) scores in the control and the infertility group

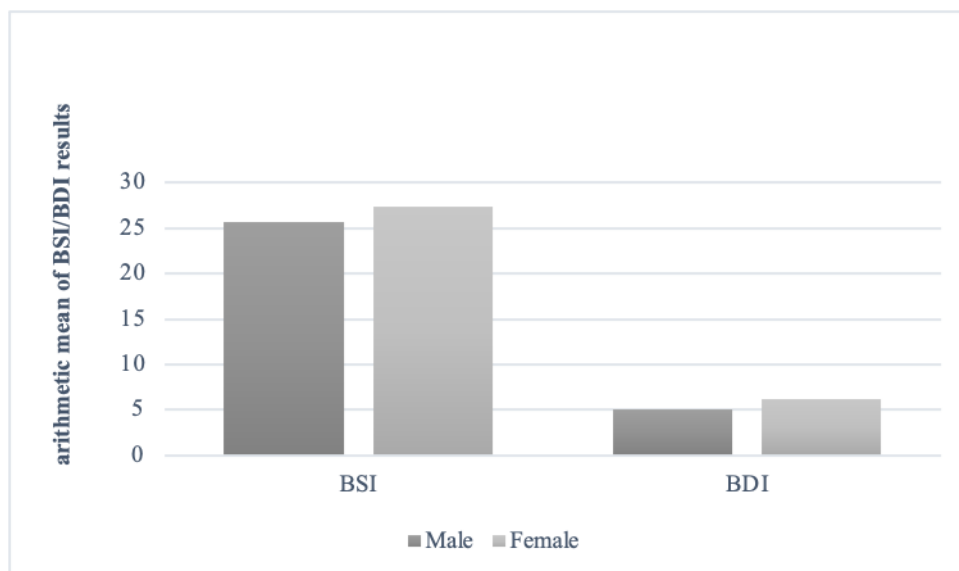


Figure 2. Graphic display of Brief Symptom Inventory (BSI) and Beck Depression Inventory (BDI) scores among males and females in the infertility group

Table 1. Descriptive statistics results for Brief Symptom Inventory (BSI) and Beck Depression Inventory (BDI) scales results

Scale	Group	N	Mean	Std. deviation	Std. error mean
BSI_total	control	84	21.7262	20.94994	2.28583
	infertility	84	32.7738	30.71178	3.35093
BDI_total	control	84	4.1548	3.88849	0.42427
	infertility	84	7.2381	6.79762	0.74168