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UTILIZATION AND EVALUATION OF SELECTIVE SEROTONIN REUPTAKE INHIBITORS(SSRI's) IN PSYCHIATRY PATIENTS OF SECONDARY CARE TEACHING HOSPITAL OF SOUTH INDIA

Pharmacy

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ABSTRACT

Selective serotonin reuptake inhibitors (SSRI's) are the most commonly prescribed antidepressants. They are mainly prescribed to treat depression. SSRI's are considered to be safer and generally cost effective when compared to some newer antidepressant classes. SSRI's acts by inhibiting the serotonin transporter (SERT) at the presynaptic axon terminal. A number of factors must be considered when evaluating SSRI's. An SSRI drug utilization study is performed for further evaluation. **Methodology:** The study was a prospective observational study on "Utilization and Evaluation of SSRI's in Psychiatry Patients", which was carried out in the 'Department of Psychiatry' in a Secondary care teaching hospital of South India. **Results:** Study the maximum number of patients was 786 and the age groups of 981 out of which maximum were of age group 46-54 and minimum were above 60, the female were more suffered in that maximum were married and the educational levels of the patients were mostly secondary, the hygienic conditions, surroundings and cleanliness were good**. Discussion:** Recent studies also found that mostly used SSRIs are Fluoxetine, Paroxetine, Citalopram and Sertraline. We found that in our hospitals the data reveals the status for some mostly used Fluoxetine as 386 (49.10%) and Paroxetine 288 (36.64%). **Conclusion:** Our study concluded that most of the patients suffered with psychological conditions and symptoms are considered. After using SSRI their overall effect in the patient health and outcome was observed with better outcome.

KEYWORDS

SSRI's: Selective Serotonin Reuptake Inhibitors, MMSE: Mini Mental Status Examination, DOCS: Dimensional Obsessive-Compulsive Scale, CTRS: Cognitive Therapy Rating Scale, DSM 5: Diagnostic and Statistical Manual of Mental Disorders, EPDS: Edinburgh Post-natal Depression Scale.

INTRODUCTION:

Selective Serotonin Reuptake Inhibitors: Selective serotonin reuptake inhibitors (SSRI's) are the most commonly prescribed antidepressants. They are mainly prescribed to treat depression, particularly persistent or severe cases, and are often used in combination with a talking therapy such as cognitive behavioural therapy (CBT).

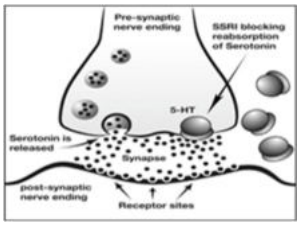
SSRI's are also used to treat a number of mental conditions including:

- Generalized Anxiety Disorder (GAD)
- Obsessive Compulsive Disorder (OCD)
- Associated disorders, Eating disorders (Bulimia)
- Post-Traumatic Stress Disorder (PTSD)

SSRI's can also be used to treat other conditions such as Premature ejaculation, Premenstrual syndrome (PMS), fibromyalgia and Irritable Bowel Syndrome (IBS). SSRI's are considered to be safer and generally cost effective when compared to some newer antidepressant classes.

Examples of SSRI's: The SSRI's approved by FDA are, Fluoxetine (Prozac), Paroxetine(Paxil, Pexeva) Sertraline (Sertraline), Fluvoxamine (Luvox, Luvox CR), Citalopram (Celexa), Escitalopram (Lexapro), Vilazodone

Mechanism of Action: Serotonin is a neurotransmitter that circulates in the brain and then absorbs into the bloodstream.



SSRI's acts by inhibiting the serotonin transporter (SERT) at the presynaptic axon terminal. Thereby SSRI's works by preventing blood from absorbing some of the serotonin from brain. This leaves a higher level of serotonin in the brain and increased serotonin can help relieve depression.

Pharmacokinetics: Administration: Co-administration with food would have an additional benefit in preventing the gastro-intestinal side effects associated with SSRI use. **Absorption:** SSRI's are rapidly metabolized by the liver. **Half-life:** The half-life of SSRI's varies across the different drug classes. Fluoxetine has the longest half-life (72-96hours).

MATERIALS AND METHODS:

Place of study: The study was carried out at a secondary care teaching hospital in south India

Study design: A Prospective observational study.

Study site: Psychiatry Hospitals include Narayana Hospital and other psychiatric hospitals.

Study population: A total number of 981 individuals was included in this study.

Study duration: One year

Study criteria: Individuals are enrolled in the study based on inclusion and exclusion criteria.

Inclusion criteria: The individuals, who are willing to give information,

- who are with age group of 27-60 and above 60,
- who are suffered with psychiatry problems and the persons,
- who are receiving treatment with selective serotonin reuptake inhibitors are includes in the study.

Exclusion criteria: Pregnant women, insane minded people, infants below 1 year, individuals who are sensitive to SSRI treatment & individuals having other comorbidities Re excluded from the study.

Sample size: 781

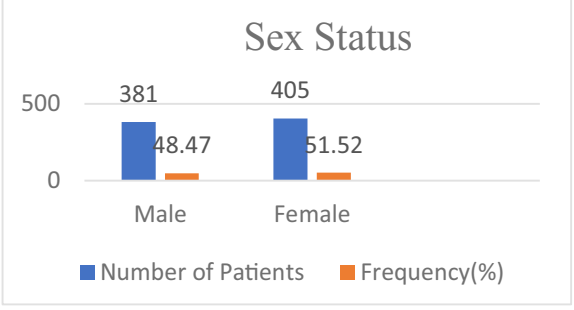
Study materials: Include questionaries from WHO, HRQL.

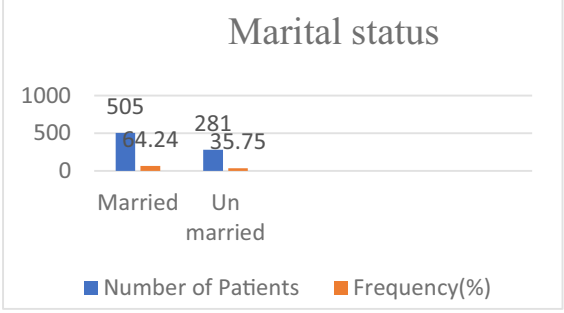
Study Methods: Include, Informed consent form of patient.

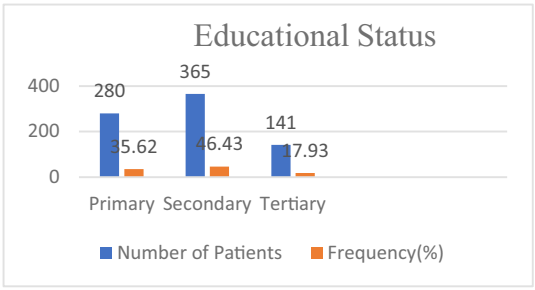
RESULTS:

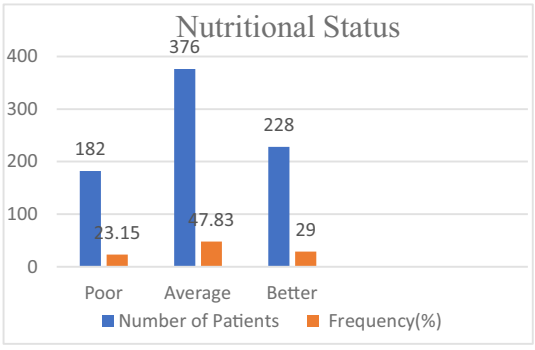
Table 1: Shows the demographic details of the patients:

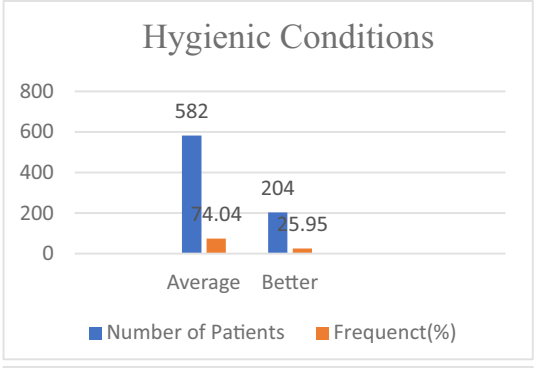
S.no	Number of Patients	Frequency (%)
Age		
27-36	171	21.75
37-45	270	34.35
46-54	306	38.93
Above 60	39	4.96
Sex		
Male	381	48.47
Female	405	51.52
Marital status		
Married	505	64.24
Un married	281	35.75
Educational Status		
Primary	280	35.62
Secondary	365	46.43
Tertiary	141	17.93
Nutritional status		
Poor	182	23.15
Average	376	47.83
Better	228	29.00
Hygienic conditions		
Average	582	74.04
Better	204	25.95
Ethnicity	786	100
Income status		
Low	431	54.83
High	355	45.16











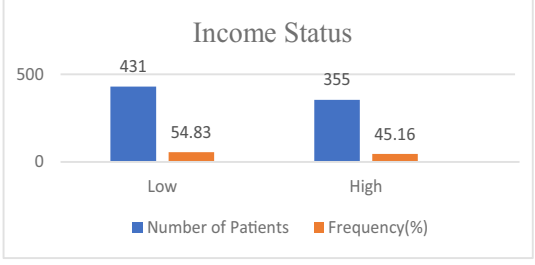


Table 2: Shows reasons for admission into Psychiatry department:

S.no	Number of Patients	Frequency (%)
Depression	248	31.55
Anxiety disorder	24	3.05
Obsessive compulsive disorder	35	4.45
Associated disorders	65	8.26
Eating disorder	73	9.28
Post-traumatic stress disorder	104	13.23
Premature ejaculation	45	5.72
Fibromyalgia	58	7.37
Premenstrual syndrome	83	10.55
Irritable Bowel Syndrome	51	6.48

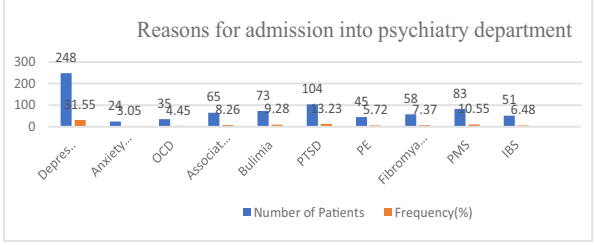


Table 3: Shows Number of Patients using SSRI:

S.no	Number of Patients	Frequency (%)
Fluoxetine (Prozac)	276	35.11
Paroxetine (Paxil, Pexeva)	68	8.65
Sertraline (Sertraline)	113	14.37
Fluvoxamine (Luvox CR)	28	3.56
Citalopram (Celexa)	74	9.41
Escitalopram (Lexapro)	138	17.55
Vilazodone	89	11.32

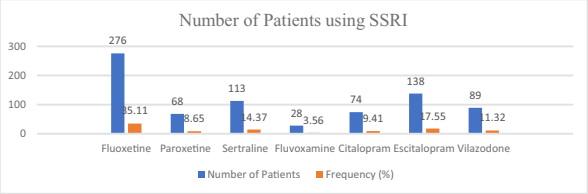


Table 4: Shows Most Frequently used drugs in SSRI:

S.no	Number of Patients	Frequency (%)
Fluoxetine	386	49.10
Paroxetine	288	36.64
Citalopram	68	8.65
Sertraline	44	5.59

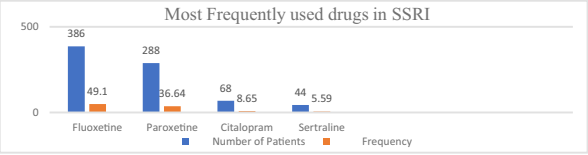


Table 5: Shows Effect of SSRI in patients:

S.no	Number of Patients	Frequency (%)
Poor	127	16.15
Average	464	59.03
Better	123	15.64
No outcome	72	9.16

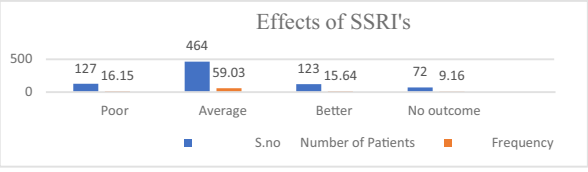


Table 6: Shows Outcomes of SSRI:

S.no	Number of Patients	Frequency (%)
Average	425	54.07
No outcome	361	45.92

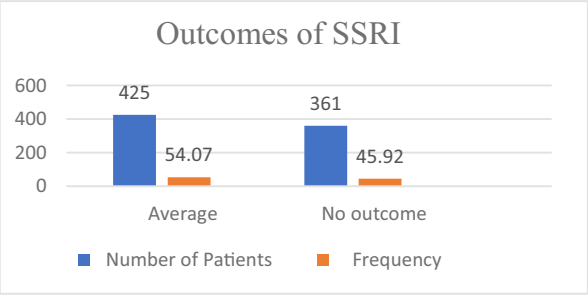


Table 7: Shows Adverse drug reactions of SSRI observed in patients:

S.no	Number of Patients	Frequency (%)
Vomiting	146	18.57
Sedation	45	5.72
Stimulation	25	3.18
Hyponatremia	61	7.76
QTc prolongation	73	9.28
Atrial fibrillation	58	7.37
Mydriasis	124	15.77
Diaphoresis	92	11.70
Somnolence	83	10.55
Gastric irritation	79	10.05

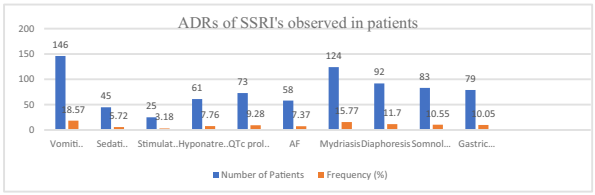


Table 8: Shows Other complications for the patients:

S.no	Number of Patients	Frequency (%)
Diabetes	164	20.86
Hypertension	125	15.90
Thyroid	66	8.39
IBD	93	11.83
Hepatitis	88	11.19
Peptic Ulcer disease	250	31.80

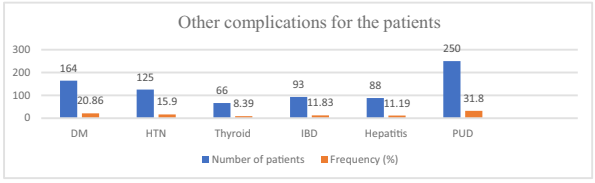


Table 9: Shows Other drugs used for different complications:

S.no	Number of Patients	Frequency (%)
Hypertension		
Telmisartan	283	36.00
Amlodipine	146	18.57
Hydrochlorothiazide	265	33.71
Atenolol	92	11.70
Diabetes		
Metformin	364	46.31
Insulin	195	24.80
Glimepiride	126	16.03
Tolbutamide	101	12.84
Thyroid		
Propylthiouracil	139	17.68
Carbimazole	92	11.70
Radioiodine	68	8.65
Thionamides	73	9.28
Inflammatory Bowel Disease		
Prednisolone	162	20.61
Budesonide	252	32.60
Sulfasalazine	186	23.66
Mesalazine	213	27.09
Azathioprine	238	30.27
Methotrexate	149	18.95

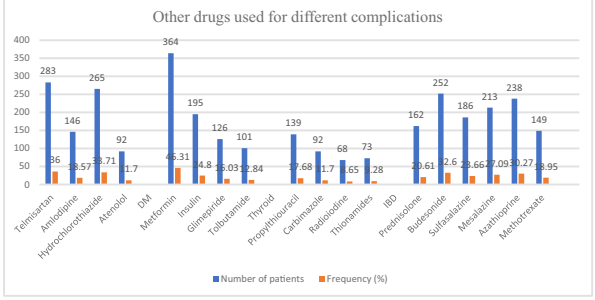


Table 10: Shows Reduction of symptoms after using SSRI:

S.no	Number of Patients	Frequency (%)
Behavioural changes	141	17.93
Mood changes	164	20.86
Depressive changes	295	37.53
Psychological changes	186	23.66

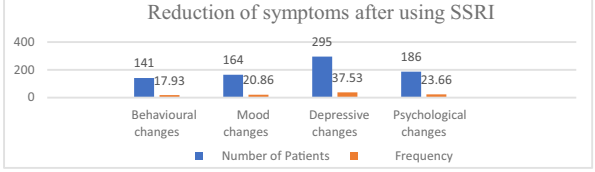


Table 11: Shows Scales for consideration of psychiatry complications:

S.no	Number of Patients	Frequency (%)
(MMSE)	193	24.55
(EPDS)	150	19.08
(DOCS)	62	7.88
(CTRS)	176	22.39
(DSM 5)	205	26.08

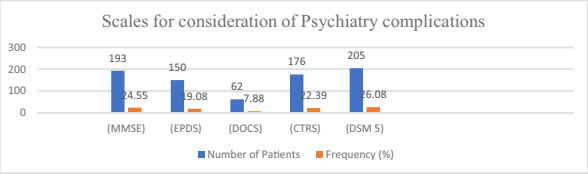
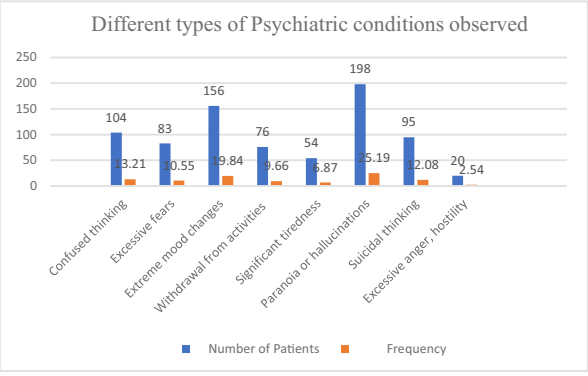


Table 12: Shows different types of psychiatry conditions observed:

S.no	Number of Patients	Frequency (%)
Confused thinking	104	13.21
Excessive fears	83	10.55
Extreme mood changes	156	19.84
Withdrawal from activities	76	9.66
Significant tiredness	54	6.87
Paranoia or hallucinations	198	25.19
Suicidal thinking	95	12.08
Excessive anger, hostility	20	2.54



DISCUSSION:

In our study we considered 981 patients are observed. Out of that only 786 are willing to provide the information, out of which of age groups between 27-60 are considered with sex of 405 females (51.52%) and 381 males (48.47%) and married were 505(64.24%) and unmarried 281(35.75%) with secondary education level are high compared to primary and tertiary with average nutritional status 376(47.83%) and average hygienic conditions 582(74.04%) and all belongs to India.

Mostly our study elucidates about the income status as low poverty 431(54.83%). The patients admitted in the hospital with different reasons mostly were due to Depression (31.55%), PTSD (13.23%) and least anxiety disorders (3.05%) are observed in our study. We also confirmed the usage of SSRIs in psychiatry department mostly used is Fluoxetine (35.11%) and Escitalopram (17.55%) and least used is Fluvoxamine (3.56%). Recent studies also found that mostly used SSRIs are Fluoxetine, Paroxetine, Citalopram and Sertraline. We found that in our hospitals the data reveals the status for some mostly used Fluoxetine as 386 (49.10%) and Paroxetine 288 (36.64%).

After using the drugs to the patients, the effects on their psychological system are also analyzed, based on the monitoring for more than 6 months and analyzed by using scales we found the effect is average 464 (59.03%) and no outcome is 72 (9.16%) out of 786 patients. Overall outcome after using SSRI was found to be average effect in 425 (54.07%) and no outcome 361(45.92%), due to the drugs the Adverse Drug Reactions are also observed in different patients with different symptoms. Mostly patients expressed Vomiting146(18.57%) and least was Stimulation 25(3.13%).

We also estimated the other complaints on this health and analyzed by them in our study with Diabetes Mellitus (20.86%), Hypertension (15.90%), Peptic Ulcer Disease (31.80%) and least was found to be Thyroid (8.39%).

Drugs used for other complications are also estimated and found that they are analyzed in our study. Overall estimation of reduction of symptoms after using SSRI's ae also in our study. The observed symptoms are Depressive changes (37.53%), Psychological changes (23.66%) and least behavioural changes (17.93%).

The study also extended the psychological condition based on the scales for evaluation. They are MMSC (24.55%), EPDS (19.08), DOCS (7.88%) CTRS (22.39) & DSM % (26.08).Based on the scales the symptoms are observed and given the treatment for that condition.

CONCLUSION:

Our study concluded that most of the patients suffered with psychological conditions and symptoms are considered. After using SSRI their overall effect in the patient health and outcome was observed with better outcome. As a clinical pharmacist we should educate the family members about the health issues and other complications observed in their daily life are estimated and evaluated. Thus, the study is required to observe further changes for long duration.

Conflict of interest: Yes

Funding: Self

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REFERENCES:

1. World Health Organization (WHO). Depression and other common mental disorders: global health estimates,http://apps.who.int/iris/bitstream/10665/254610/1/WHO-MSD-MER2017.2-eng.pdf (accessed 27 August 2017)
2. Hardeveld F, Spijker J, De Graaf R, et al. Prevalence and predictors of recurrence of major depressive disorder in the adult population. Acta Psychiatr Scand 2010; 122: 184–191.
3. Peselow ED, Tobia G, Karamians R, et al. Prophylactic efficacy of fluoxetine, escitalopram, sertraline, paroxetine, and concomitant psychotherapy in major depressive disorder: outcome after long-term follow-up. Psychiatry Res 2015; 225: 680–686.
4. Spijker J, van Straten A, Bockting CL, et al. Psychotherapy, antidepressants, and their combination for chronic major depressive disorder: a systematic review. Can J Psychiatry 2013; 58: 386–392.
5. Cipriani A, Furukawa TA, Salanti G, et al. Comparative efficacy and acceptability of 12 new generation antidepressants: a multiple-treatments meta-analysis. Lancet (London, England) 2009; 373: 746–758.
6. Pigott HE, Leventhal AM, Alter GS, et al. Efficacy and effectiveness of antidepressants: current status of research. Psychother Psychosom 2010; 79: 267–279.
7. Yang H, Chuzi S, Sinicropi-Yao L, et al. Type of residual symptom and risk of relapse during the continuation/maintenance phase treatment of major depressive disorder with the selective serotonin reuptake inhibitor fluoxetine. Eur Arch Psychiatry Clin Neurosci 2010; 260: 145–150.
8. Gunnell D, Saperia J and Ashby D. Selective serotonin reuptake inhibitors (SSRIs) and suicide in adults: meta-analysis of drug company data from placebo controlled, randomised controlled trials submitted to the MHRA's safety review. BMJ 2005; 330: 385.
9. Aberg-Wistedt A, Agren H, Ekselius L, et al. Sertraline versus paroxetine in major depression: clinical outcome after six months of continuous therapy. J Clin Psychopharmacol 2000; 20: 645–652.
10. Beekman ATF, Bremmer MA, Deeg DJH, et al: Anxiety disorders in later life: a report from the Longitudinal Aging Study Amsterdam. Int J Geriatr Psychiatry 1998; 13:717–726
11. Sheikh JI, Cassidy EL: Treatment of anxiety disorders in the elderly: issues and strategies. J Anxiety Disord 2000; 14:173–190.
12. Gray SL, Eggen AE, Blough D, et al: Benzodiazepine use in older adults enrolled in a health maintenance organization. Am J Geriatr Psychiatry 2003; 11:568–576
13. Fourrier A, Letenneur L, Dartigues JF, et al: Benzodiazepine use in an elderly community-dwelling population. Characteristics of users and factors associated with subsequent use. Eur J Clin Pharmacol 2001; 57:419–425
14. Warshaw MG, Keller MB, Stout RL: Reliability and validity of the longitudinal interval follow-up evaluation for assessing outcome of anxiety disorders. J Psychiatr Res 1994; 28:531–545
15. Juurlink DN, Mamdani MM, Kopp A, et al: The risk of suicide with selective serotonin reuptake inhibitors in the elderly. Am J Psychiatry 2006; 163:813–821
16. Baca E, Roca M, Garcia-Calvo C, et al: Venlafaxine extendedrelease in patients older than 80 years with depressive syndrome. Int J Geriatr Psychiatry 2006; 21:337–343
17. Salzman C: Late-life anxiety disorders. Psychopharmacol Bull 2004; 38:25–30.
18. Goisman RM, Rogers MP, Steketee GS, et al: Utilization of behavioral methods in a multicenter anxiety disorders study. J Clin Psychiatry 1993; 54:213–218
19. Goisman RM, Warshaw MG, Keller MB: Psychosocial treatment prescriptions for generalized anxiety disorder, panic disorder, and social phobia, 1991-1996. Am J Psychiatry 1999; 156:1819–1821
20. Reinblatt SP, Dosreis S, Walkup JT, Riddle MA. Activation of adverseevent sinduced by the selective serotoninreuptake inhibitor fluvoxamine in children and adolescents. J Child Adolesc Psychopharmacol. 2009;19(2):119–26. https:// doi.org/10.1089/cap.2008.040.
21. Locher C, Koechlin H, Zion SR, Werner C, Pine DS, Kirsch I, et al. Efficacy and safety of selective serotonin reuptake inhibitors, serotonin-norepinephrine reuptake inhibitors, and placebo for common psychiatric disorders among children and adolescents: a systematic review and metaanalysis. JAMA Psychiatry. 2017;74(10):1011–20. https://

doi.org/10.1001/jamapsychiatry.2017.2432.
22. Mochcovitch MD, Nardi AE. Selective serotoninreuptake inhibitors in the treatment of panic disorder: a systematic review of placebo-controlled studies. Expert Rev Neurother. 2010;10(8):1285–93. https://doi. org/10.1586/ern.10.110.
23. Renoir T. Selective serotonin reuptake inhibitor antidepressant treatment discontinuation syndrome: a review of the clinical evidence and the possible mechanisms involved. Front Pharmacol. 2013;4:45. https://doi.org/10.3389/fphar.2013.00045.
24. Hviid A, Melbye M, Pasternak B. Use of selective serotonin reuptake inhibitors during pregnancy and risk of autism. N Engl J Med. 2013;369(25):2406–15. https://doi.org/10.1056/NEJMoa1301449.
25. Kobayashi T, Matsuyama T, Takeuchi M, Ito S. Autism spectrum disorder and prenatal exposure to selective serotonin reuptake inhibitors: a systematic review and meta-analysis. Reprod Toxicol. 2016;65:170–8. https:// doi.org/10.1016/j.reprotox.2016.07.016.
26. Belotto-Silva C, Diniz JB, Malavazzi DM, Valério C, Fossaluza V, Borcato S, et al. Group cognitive-behavioral therapy versus selective serotonin reuptake inhibitors for obsessive-compulsive disorder: a practical clinical trial. J Anxiety Disorder 2012;26(1):25–31. https://doi. org/10.1016/j.janxdis.2011.08.008
27. Walitt B, Urrútia G, Nishishinya MB, Cantrell SE, Häuser W. Selective serotonin reuptake inhibitors for fibromyalgia syndrome. Cochr Database Syst Rev. 2015;(6): CD011735. https://doi.org/10.1002/14651858.CD011735.