REVIEW

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Regulation of Antidepressant Prescription for the Effective Treatment of Mental Disorders in Turkey: A Narrative Review

Sophia Bahar Root, Elizabeth Clarey

MSc Public Health and Health Promotion, Brunel University, London

ABSTRACT

Background: This non-systematic narrative review aims to summarize the results of clinical studies evaluating the effectiveness of antidepressants used to treat mental illnesses including major depressive disorder, obsessive-compulsive disorder, somatization disorder, and anxiety disorders in Turkey. Conclusions drawn from this article can guide ongoing efforts by Turkish health policymakers to improve public health development in the country by further regulating the prescription of antidepressants.

Methods: Relevant articles regarding the effectiveness of antidepressant use were collected in June 2021 using Cumulative Index to Nursing and Allied Health Literature (CINAHL) Plus and Academic Search Complete online databases. The collected articles were then appraised using the Critical Appraisal Skills Programme to determine the reliability and quality of each article and to assess the risk of bias in each article. The summary of key findings/evidence, Critical Appraisal Skills Programme appraisal summary results, funding, study designs applied, settings covered, period covered (years), and additional comments were extracted from each article for analysis. The inclusion criteria involved articles that recounted adverse effects and effectiveness of antidepressant use in Turkey to treat mental illnesses, including anxiety disorders, major depressive disorder, somatization disorder, and obsessive-compulsive disorder. The exclusion criteria consisted of articles that included participants who resided outside of the geographic region of Turkey, abstracts, the pharmacology of antidepressant use, antidepressant off-label use, and alternative treatments.

Results: A total of 15 articles out of the 104 derived from the databases were included in the study that fell into 1 of the following main themes, "adverse effects" and "mixed results," which accounted for 53% (8 articles) and 40% (6 articles), respectively. One outlying article was identified (7%).

Conclusions: Totally 8 out of 15 articles that recounted antidepressants prescribed for mental illnesses produced adverse effects without treatment success and 6 out of 15 articles recounted adverse effects with treatment success. One outlying article found a confound that precluded determining whether an adverse effect was caused by antidepressant use or confounded by pre-existing conditions. Given that 14 out of 15 articles recounted adverse effects associated with antidepressant use and 6 out of 15 articles recounted antidepressant treatment success, Turkish policymakers are encouraged to adopt a restrictive drug policy strategy. To sum up, antidepressant prescription and consumption should be conducted with caution to limit unnecessary risk of exposure to adverse effects associated with antidepressant use. Limitations in the research included using a non-systematic tool instead of conducting a systematic review, a limited number of articles (15 out of 104), and risk of bias was detected from appraising the articles via Critical Appraisal Skills Programme.

ARTICLE HISTORY

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INTRODUCTION

Antidepressants such as tricyclic antidepressants (TCAs), selective serotonin reuptake inhibitors (SSRIs), and serotonin–noradrenaline reuptake inhibitors (SNRIs) are prescribed to some individuals with mental illnesses, that is depression and anxiety disorders.[1] Effective antidepressants make biological alterations, improving patients' mood and alleviating symptoms of depression and anxiety.[2] For instance, antidepressant medication has proven to be an effective course of treatment for 5 of the 12 symptoms of depression, including depressed mood and anxiety.[3]

However, high mortality and morbidity rates among antidepressant consumers with mental illness are suggested to result from adverse effects, i.e., diabetes mellitus,[4,5] hypertension,[6] cardiovascular disease,[4,7] or suicide.[4,8] Yet,

Corresponding author: Sophia Bahar Root, e-mail: 2043725@alumni.brunel.ac.uk

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it is unknown whether adverse effects are a direct cause of antidepressant use or if they result from pre-existing conditions. For example, a decline in bone mineral density has been linked with SSRIs use, but the confounding variable of depression questions the robustness of this claim.[4,9] Furthermore, the side effects of antidepressants remain controversial. For instance, antidepressant use was associated with weight gain[4,5] and weight loss with acute SSRI treatment.[4]

In Turkey, the burden of disease for mental disorder, in terms of depressive and anxiety disorders, has increased by 22% from 2002 to 2019. Synchronously, antidepressant consumption has also increased in Turkey from 29 per 1000 population in 2009 to 44 per 1000 population in 2018.[10] In 2006, the Turkish Psychiatry Association pushed all physicians to have the ability to prescribe SSRIs because Turkey had a relatively low number of psychiatrists.[11] Consequently, since 2008, antidepressants have been prescribed mainly by non-mental health professionals, contesting the integrity of the prescription.[12]

In response to the risks associated with antidepressants, the Turkish Association for Psychopharmacology promotes research and the responsible use of antidepressants. However, the prescription of antidepressants by non-mental health professionals calls into question the validity of antidepressants to effectively treat mental disorders without taking unnecessary risks associated with the adverse effects of antidepressant use[12] — there remains an opportunity to further develop regulations to promote the responsible use of antidepressants, such as implementing antidepressant regulations currently used by the European Union (EU).[13]

This narrative review aims to bring clarity to the effective use of antidepressants in Turkey to treat anxiety disorders, major depressive disorder, somatization disorder, and obsessive-compulsive disorder (OCD) and to assist in the nation's health policy development.

METHODS

A total of 104 articles were collected from CINAHL Plus and Academic Search Complete databases in June 2021 using keywords relating to antidepressant use in Turkey (Table 1). Based on the exclusion–inclusion criteria adhering to the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) tool (Table 2), 89 articles (96%) were not specifically related to the effectiveness of antidepressants for treating mental disorder in the geographic region of Turkey and were excluded. Exclusion criteria included research on populations outside Turkey, off-label use of antidepressants (use for non-mental disorder purposes), alternative treatments for mental disorders, the pharmacology of antidepressants, and abstracts. Finally, 15 articles (4%) were selected for further analysis. Inclusion criteria included literature on the effectiveness and adverse effects of using antidepressants to treat mental disorders—anxiety disorders, major depressive disorder, somatization disorder, and OCD—in Turkey.[14] CINAHL Plus was utilized since it had an extensive resource of health journals, treatment options, and disease accounts that were available in full text. Academic Search Complete was utilized for its abundant resources in the full text within various subjects, including psychology and psychiatry.

Data items extracted from the articles included the summary of key findings/evidence of each article, the Critical Appraisal Skills Programme (CASP) appraisal summary results, source of funding, study design, setting, the period covered, and additional comments that included 1 of 3 identified themes: mixed results, adverse effects, and non-conclusive results.[14-17] Risk of bias was controlled by appraising the articles using the CASP checklists[16,17] and adhering to the PRISMA tool.[14] Synthesis of the data involved theme-based grouping of the literature in accordance with qualitative non-systematic review standards.[18,19]

MAIN POINTS

- Eight out of the 15 articles only articulated adverse effects. Six of the 15 articles articulated adverse effects as well as treatment success, and one outlying article had inconclusive results.
- Considering a total of 14 articles of the 15 reviewed identified antidepressant adverse effects, the distribution and consumption of antidepressants should proceed with caution.
- Having a mindful approach to antidepressant use would help reduce exposure to the drug's adverse effects unless it's use is deemed necessary since antidepressants have also witnessed treatment success.

RESULTS

A total of 15 journal articles, 5 qualitative studies (33%) and 10 cohort studies (67%) were included in the analysis (Figure 1). Qualitative and cohort studies were appraised using CASP qualitative or CASP cohort study, respectively.[16,17] The 5 qualitative studies did not meet the standards of the CASP qualitative appraisal. These articles had valuable accounts of the results, but the research methodology and ethics relevant to the study were not detailed, leaving room for bias.[17] The 10 cohort study articles met the standards of CASP cohort study for sufficient reliability and quality.[16] Fourteen out of 15 (94%) articles appeared to have no conflict of interest due to funding, 1 article (~7%) declared funding without declaring conflict of interest, 10 articles (~67%) did not specify funding, and the remaining 4 articles (~27%) declared no funding. No articles declared conflict of interest.

Of the 15 articles reviewed, 8 articles did not state the time frame during which the data were collected and 7 articles stated the data collection time period which

Table 1. Information Sources and Search Strategy[14,15]

Information Sources and Search Strategy						
#	Database	Date Last Searched	Keywords Used	Filters	Total Number of Literature Found	Total Relevant Literature Included
1	CINAHL Plus	June 21, 2021	"Turkey or Turkish" AND "anti depressants or antidepressants or anti-depressants"	Abstract, 2011-2021, Peer-reviewed, apply equivalent subjects, geography: Europe, middle east.	16	1
2	Academic Search Complete	June 21, 2021	"Turkey or Turkish" AND "anti depressants or antidepressants or anti-depressants"	Abstract or author-supplied abstract, apply equivalent subjects, scholarly (peer-reviewed) journals, 2011-2021, geography: Turkey, Istanbul (Turkey).	24	1
3	CINAHL Plus	June 22, 2021	"Turkey or Turkish" AND "disorder or illness" AND "antidepressants or antidepressant medication or ssri or selective serotonin reuptake inhibitors"	Apply equivalent subjects, 2011-2021, peer-reviewed.	1	0
4	Academic Search Complete	June 22, 2021	"Turkey or Turkish" AND "disorder or illness" AND "antidepressants or antidepressant medication or ssri or selective serotonin reuptake inhibitors"	Apply equivalent subjects, scholarly (peer-reviewed) journals, 2011-2021, geography: Turkey, Istanbul (Turkey)	28	5
5	CINAHL Plus	June 23, 2021	"Turkey or Turkish" AND "monoamine oxidase inhibitors (MAOIs) or Norepinephrine and dopamine reuptake inhibitors (NDRIs) or Selective serotonin reuptake inhibitors (SSRIs) or Serotonin and norepinephrine reuptake inhibitors (SNRIs) or Serotonin antagonist and reuptake inhibitors (SARIs) or Tricyclic antidepressants (TCAs) or tetracyclic antidepressants (TeCAs)" AND "disorder or illness or health or problem"	Apply equivalent subjects, peer-reviewed, 2011-2021	0	0
6	Academic Search Complete	June 23, 2021	"Turkey or Turkish" AND "monoamine oxidase inhibitors (MAOIs) or Norepinephrine and dopamine reuptake inhibitors (NDRIs) or Selective serotonin reuptake inhibitors (SSRIs) or Serotonin and norepinephrine reuptake inhibitors (SNRIs) or Serotonin antagonist and reuptake inhibitors (SARIs) or Tricyclic antidepressants (TCAs) or tetracyclic antidepressants (TeCAs)" AND "disorder or illness or health or problem"	Apply equivalent subjects, scholarly (Peer-reviewed) journals, 2011-2021	35	8
Total number of literature used: 15						

ranged from 2004 to 2017 (Table 3). Five articles were case studies with 1 participant, and 10 articles had a cohort size ranging from 30 to 1432 participants. The essential findings and evidence summary identified 2 main themes, "adverse effects" and "mixed results." The "adverse effects" theme was identified in 8 articles (53%) and the "mixed results" theme was identified in 6 articles (40%). One outlying article (7%) was identified.

Adverse Effects Theme

Eight articles were identified to the "adverse effects" theme because they solely recounted adverse effects associated with antidepressant use. Adverse effects with an emotional component included manic attack,[20] increased emotional exhaustion, increased depersonalization, decreased personal accomplishment,[21] and anxiety.[22] Adverse effects with a physical component included reduced bone mineral density,[23] weight gain,[22] reduced olfactory bulb volumes compromising olfactory sensitivity,[24] onset sleep bruxism, described as the clenching and grinding of teeth while asleep,[25] periorbital purpura or bleeding,[26] and menstruation disorders such as metrorrhagia, oligomenorrhea, and menorrhagia.[27]

Table 2. PRISMA 2020 Checklist[14]

Section and Topic	Item #	Checklist Item	Location Where Item Is Reported
Title			
Title	1	Identify the report as a systematic review.	Title—report identified as a narrative review.
Abstract			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	Table 4
Introduction			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Introduction
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	Introduction
Methods			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Methods
Information sources	6	Specify all databases, registers, websites, organizations, reference lists, and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	Table 1
Search strategy	7	Present the full search strategies for all databases, registers, and websites, including any filters and limits used.	Table 1
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	Methods
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	Methods
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g., for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	Methods
	10b	List and define all other variables for which data were sought (e.g., participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	Methods
Study risk of bias assessment	11	Specify the methods used to assess the risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study, and whether they worked independently, and if applicable, details of automation tools used in the process.	Methods
Effect measures	12	Specify for each outcome the effect measure(s) (e.g., risk ratio, mean difference) used in the synthesis or presentation of results.	NA
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g., tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	Methods
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling missing summary statistics or data conversions.	Methods
	13c	Describe any methods used to tabulate or visually display the results of individual studies and syntheses.	*Figure 1*
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s) and method(s) to identify the presence and extent of statistical heterogeneity and software package(s) used.	Methods
	13e	Describe any methods used to explore the possible causes of heterogeneity among study results (e.g., subgroup analysis, meta-regression).	NA
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	NA
Reporting bias assessment	14	Describe any methods used to assess the risk of bias due to missing results in a synthesis (arising from reporting biases).	NA

(*Continued*)

Table 2. PRISMA 2020 Checklist[14] (*Continued*)

Section and Topic	Item #	Checklist Item	Location Where Item Is Reported
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	NA
Results			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	*Figure 1*
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	NA
Study characteristics	17	Cite each included study and present its characteristics.	Table 3
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	Results
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g., confidence/credible interval), ideally using structured tables or plots.	A qualitative summary is available in Results.
Results of syntheses	20a	For each synthesis, briefly summarize the characteristics and risk of bias among contributing studies.	Results
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present each of the summary estimate and its precision (e.g., confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	A qualitative synthesis is available in Results.
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	NA
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	NA
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	NA
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	NA
Discussion			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	Discussion
	23b	Discuss any limitations of the evidence included in the review.	Discussion
	23c	Discuss any limitations of the review processes used.	Discussion
	23d	Discuss implications of the results for practice, policy, and future research.	Discussion
Other information			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	The review is not registered.
	24b	Indicate where the review protocol can be accessed or state that a protocol was not prepared.	Protocol not prepared.
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	NA
Support	25	Describe sources of financial or non-financial support for the review and the role of the funders or sponsors in the review.	No financial support. Non-financial support from authors' university.
Competing interests	26	Declare any competing interests of review authors.	No interests.
Availability of data, code, and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	PRISMA 2020 checklist (Page et al., 2021); CASP checklists (Critical Appraisal Skills Programme, 2018a; Critical Appraisal Skills Programme, 2018b); Guidance for conducting systematic scoping reviews (Peters et al., 2015).

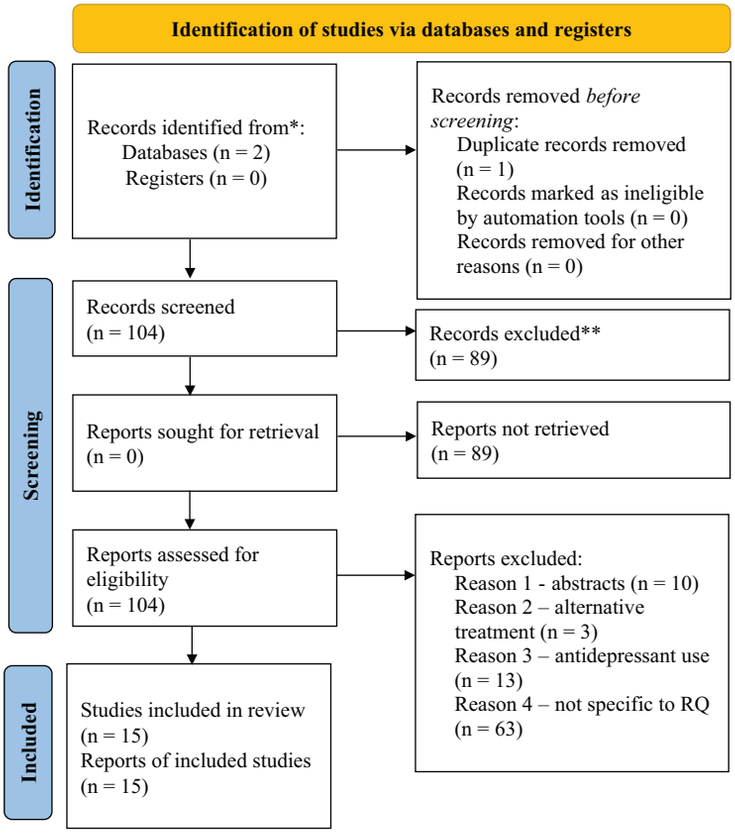

Figure 1. Identification of studies via databases and registers.[14]

Mixed Results Theme

Six articles were associated with the "mixed results" theme because of conflicting accounts of adverse effects with treatment success.[28-30] For example, Adanır et al.[30] identified 3 antidepressants, sertraline, fluoxetine (SSRIs), and clomipramine (TCA), assisted with relieving anxiety symptoms for a patient (n = 1) but caused ecchymoses, a form of bleeding. Similarly, according to the report records analyzed by Durmus et al (2013)[28], tianeptine, a selective serotonin reuptake enhancer (SSRE), was found to be an effective form of treatment for patients with mental disorders but had notable potential for abuse. Furthermore, Şahingöz and Önder Sönmez[29] indicated that a patient (n = 1) who was taking duloxetine (SNRIs) found her symptoms of depression to subside but dropped treatment due to nausea.

Second, 2 articles found specific antidepressants to cause an adverse effect, while alternative antidepressants used for the same treatment did not cause adverse effects.[29,31] For instance, Atay and Unal[31] found nocturnal enuresis or abnormality in the urinary tract to occur with the use of sertraline (SSRI) and venlafaxine (SNRI) but not with escitalopram (SSRI) in treating depression. Escitalopram was also effective in treating the patient's (n = 1) depression. Correspondingly, Şahingöz and Önder Sönmez[29] identified the adverse effect of ecchymoses to develop due to paroxetine (SSRIs) and sertraline but not with escitalopram in treating depression for a patient (n = 1).

Two studies identified mixed results in the effectiveness of antidepressants among patients.[32,33] Selvi et al[32] reported that a higher rate of patients (n = 57) receiving SSRIs for the treatment of OCD were resistant to treatment than those achieving positive results from treatment. Hanci et al[33] reported that treatment with SSRIs and SNRIs for a cohort (n = 101) of schizophrenia patients with depressive symptoms resulted in full remission rates to occur at a higher rate than terminating treatment due to adverse effects, 53.8% compared to 20.5%.

Outlying Article

One article was an outlier due to reporting non-conclusive results.[34] Tufan et al[34] found sexual dysfunction prominently among major depressive disorder patients (n = 33) regardless of taking antidepressants for treatment—SSRIs.

DISCUSSION

Turkish policy and guidelines since 2006 have been lenient toward regulating antidepressant prescription, leading to increased use of antidepressants to treat mental disorders, particularly the prescription of antidepressants by non-mental health professionals.[11,12]

Table 3. Results of the Literature[14-17]

Results of the Literature						
Summary of Key Findings/Evidence	CASP Appraisal Summary Results	Funding	Study Designs Applied	Settings Covered	Period Covered (Years)	Additional Comments
Adanir et al (2017) A 13-year-old boy who had anxiety was treated with sertraline (SSRIs) that caused the anxiety to subside, but ecchymoses developed. Fluoxetine (SSRIs) was prescribed, which also caused ecchymoses. Clomipramine (TCA) was given to the patient, which lessened the severity of ecchymoses but was still present.	Clearly stated findings, but the risk of bias due to research methodology not being made explicit.	The authors did not declare funding.	Case study	Turkey	NA	**Main theme:** mixed Results.
Akaltun and Ayaydin (2020) A 16-year-old girl who had selective mutism (an anxiety disorder) was prescribed fluoxetine. The patient developed a manic attack, which did not subside after the termination of treatment. The patient was then diagnosed with bipolar I disorder.	Clearly stated findings, but the risk of bias due to research methodology not being made explicit.	The authors declared no funding.	Case study	Turkey	NA	**Main theme:** adverse effects.
Ak et al (2015) Study on whether sertraline, paroxetine, and citalopram (SSRIs) influenced bone mineral density among the target population of postmenopausal women (n = 67) who had generalized anxiety disorder compared to the control group (n = 40). SSRI consumption was found to associate with a decreased bone mineral density. A limitation suggested that the bone mineral density could be influenced by the diagnosis of depression or treatment.	Results are valid and precise but cannot be applied locally.	The authors did not declare funding.	Quantitative	Turkey	NA	**Main theme:** adverse effects.
Atay and Unal (2015) A 21-year-old male with major depressive disorder took sertraline and then venlafaxine, which caused nocturnal enuresis to develop. Then, he was prescribed escitalopram that was successful in helping him with his depression and did not develop onset nocturnal enuresis.	Clearly stated findings, but the risk of bias due to research methodology not being made explicit.	The authors did not declare funding.	Case study	Turkey	NA	**Main theme:** mixed results.
Balikci et al (2014) This study analyzed the side effects that caused patients (n = 264) to become non-compliant from SSRIs and TCAs treatment. Patients took antidepressants for depression, anxiety, or somatization but were non-compliant. Results determined that non-compliance due to side effects occurred for 26.8% of the cohort. However, the majority (73.2%) were non-compliant due to other reasons. Patients taking antidepressants (TCAs) due to somatization disorder were more often non-compliant due to adverse effects. The most frequent reason for non-compliance was weight gain, but other side effects included anxiety, sexual problems, and nausea. TCAs caused patients to complain about sedation, constipation, and palpitations at a higher rate, and SSRIs caused patients to complain about insomnia, anxiety, and nausea at a higher rate.	Results were relatively valid, but potential bias due to validation of questionnaire not been made explicit. Results appear to help locally.	The authors did not declare funding.	Quantitative	Turkey	2004-2005	**Main theme:** adverse effects.

(*Continued*)

Table 3. Results of the Literature[14-17] (*Continued*)

Results of the Literature						
Summary of Key Findings/Evidence	CASP Appraisal Summary Results	Funding	Study Designs Applied	Settings Covered	Period Covered (Years)	Additional Comments
Bolat et al (2019) The study identified the relationship between burnout syndrome, emotional exhaustion, depersonalization, and personal accomplishment levels among the target population of Turkish urologists (n = 362). Results suggested that 21.8% of Turkish urologists in the study took antidepressants. Antidepressant use (21.9%) for a period longer than 6 months was associated with increased emotional exhaustion and increased depersonalization but decreased personal accomplishment.	Results are valid and precise and appear to help locally.	The authors declared no funding.	Quantitative	Turkey	2017	**Main theme:** adverse effects.
Durmus et al (2013) Tianeptine was described as similar to TCAs, but it is a selective serotonin reuptake enhancer, which works inversely to SSRIs. Tianeptine has shown efficacy in treating mental illnesses such as depression. However, analysis of product sales, market shares, and adverse drug reports in Turkey suggested that tianeptine had an abuse potential.	Results are valid and precise and appear to help locally.	The authors did not declare funding.	Quantitative	Turkey	2011-2012	**Main theme:** mixed results.
Gul et al (2015) The study articulated olfactory bulb volumes among a population of chronic major depression patients (n = 31) taking SSRIs compared to the control group (n = 31). Previous literature mentioned that the olfactory bulb processes information concerning odor. A negative correlation was identified between Beck Depression Inventory (BDI) depression scores and the olfactory bulb volumes. Olfactory bulb volumes were smaller among the patients with depression compared to the participants in the control group.	Results are valid and precise but cannot tell if it can help locally.	The authors did not declare funding.	Quantitative	Turkey	2013	**Main theme:** adverse effects.
Hanci et al (2015) The study described antidepressant prescription among the target population (n = 101) of individuals diagnosed with schizophrenia experiencing comorbid depression. Results suggested that within the cohort, 20.5% dropped antidepressant treatment due to side effects. About half of the cohort (53.8%) were in full remission in terms of depression. About half (50.9%) achieved full remission among participants taking SSRIs, more than half achieved remission (85.7%) among the SNRIs participants. In terms of psychotic exacerbations, while taking antidepressants, between the 12 antidepressants compared, a total of 20.2% caused psychotic exacerbations. Sertraline caused the highest rate of exacerbation (19.3%). SSRIs were used more often, but remission rates were higher among the participants taking SNRIs. Both SSRIs and SNRIs using groups experienced exacerbation.	Results are relatively valid aside from the validation of the form not having been made explicit. Results appear to help locally.	The authors declared no funding.	Quantitative	Turkey	2007-2012	**Main theme:** mixed results.

(*Continued*)

Table 3. Results of the Literature[14-17] (*Continued*)

Results of the Literature						
Summary of Key Findings/Evidence	CASP Appraisal Summary Results	Funding	Study Designs Applied	Settings Covered	Period Covered (Years)	Additional Comments
Isa Kara et al (2017) Studied whether 2 SSRIs (fluoxetine and paroxetine) influenced sleep bruxism among the target population of patients with depression or anxiety (n=30). Results indicated that sleep bruxism statistically significantly increased after 7days and 15 days of fluoxetine or paroxetine treatment. Six patients (20%) taking paroxetine reported experiencing sleep bruxism after 15 days of treatment.	Results are valid and precise and appear to help locally.	Supported by Scientific Research Projects, İzmir Katip Celebi University (Project No:2013-2-TSBP-32)	Quantitative	Turkey	NA	**Main theme:** adverse effects.
Kayhan, Eken and Uguz (2015) A 44-year-old female diagnosed with an anxiety disorder was prescribed sertraline that caused to develop onset of periorbital purpura. The patient discontinued the medication, and the periorbital purpura subsided.	Clearly stated findings, but the risk of bias due to research methodology not being made explicit.	The authors did not declare funding.	Case study	Turkey	NA	**Main theme:** adverse effects.
Şahingöz and Önder Sönmez (2015) A 35-year-old female who had depression took duloxetine that helped relieve her depressive symptoms, but she stopped taking the medication because of nausea. The patient was then given paroxetine and then sertraline that caused to develop onset of ecchymoses. She was switched to escitalopram, which did not develop onset ecchymoses.	Clearly stated findings, but the risk of bias due to research methodology not being made explicit.	The authors did not declare funding.	Case study	Turkey	NA	**Main theme:** mixed results.
Selvi et al (2011) The study articulated the efficacy of SSRIs treatment alone in relieving obsessive-compulsive disorder (OCD) symptoms among the target population of OCD patients (n=57). Results suggested that less than half (47.4%) found pharmacotherapy effective, but 52.6% were resistant to treatment. Treatment reduced OCD belief scores. A decline in obsessive beliefs also saw a decline in depressive symptoms. Patients with perfectionism and the need for certainty saw reduced efficacy in treatment.	Results are valid and precise aside from potential confounding factors but cannot be applied locally.	The authors did not declare funding.	Quantitative	Turkey	NA	**Main theme:** mixed results.
Tufan et al (2013) The study identified sexual dysfunction among the target population (n=33) of patients with major depressive disorder who were taking SSRIs treatment compared to people who were not. Results determined that between the groups of those taking antidepressants (73.7%) and those that were not (85.7%), both experienced sexual dysfunction that did not differ significantly.	Results are valid and precise, but results cannot be applied or help locally.	The authors declared no funding.	Quantitative	Turkey	2006	**Outlying article:** non-conclusive results regarding adverse effects.
Uguz et al (2012) The study articulated the relationship between menstruation disorders and antidepressants among the target population of women (n=1432; n=793 participants on antidepressants; n=639 participants in the control group). The prevalence of menstruation disorders was higher among participants taking antidepressants. The menstruation disorders due to antidepressant use that occurred most often were metrorrhagia, oligomenorrhea, and menorrhagia.	Results are valid and precise, aside from questions of the semi-structured interview not being validated. Results cannot be applied locally.	The authors did not declare funding.	Quantitative	Turkey	2010	**Main theme:** adverse effects.

Table 4. PRISMA 2020 for Abstracts Checklist[14]

Section and Topic	Item #	Checklist Item	Reported (Yes/No)
Title			
Title	1	Identify the report as a systematic review.	No, considering it is a non-systematic narrative review, it has been identified as such.
Background			
Objectives	2	Provide an explicit statement of the main objective(s) or question(s) the review addresses.	Yes
Methods			
Eligibility criteria	3	Specify the inclusion and exclusion criteria for the review.	Yes
Information sources	4	Specify the information sources (e.g., databases, registers) used to identify studies and the date when each source was last searched.	Yes
Risk of bias	5	Specify the methods used to assess the risk of bias in the included studies.	Yes
Synthesis of results	6	Specify the methods used to present and synthesize results.	Yes
Results			
Included studies	7	Give the total number of included studies and participants and summarize relevant characteristics of studies.	Yes
Synthesis of results	8	Present results for main outcomes, preferably indicating the number of included studies and participants for each. If meta-analysis was done, report the summary estimate and confidence/credible interval. If comparing groups, indicate the direction of the effect (i.e., which group is favored).	Yes
Discussion			
Limitations of evidence	9	Provide a brief summary of the limitations of the evidence included in the review (e.g., study risk of bias, inconsistency, and imprecision).	Yes
Interpretation	10	Provide a general interpretation of the results and important implications.	Yes
Other			
Funding	11	Specify the primary source of funding for the review.	Yes
Registration	12	Provide the register name and registration number.	No

A current qualitative literature synthesis and analysis of articles prevalent to antidepressant use to treat mental disorders in Turkey identified 8 of 15 articles (53%) to only recount adverse effects associated with antidepressant consumption to treat mental disorders in Turkey. Six articles (40%) reported mixed results of treatment effectiveness or ineffectiveness with or without adverse effects, and 1 article had non-conclusive results. Two articles identified that patient experience of adverse effects was dependent on the type of antidepressant used. Two other articles identified conflicting effectiveness results with antidepressant use. For instance, 1 article found positive treatment results to occur at a lower rate than treatment resistance. Conversely, another article identified remission rates occurred at a higher rate than treatment termination rates due to adverse effects.

Given the increased burden of disease for depressive and anxiety disorders, the increase in antidepressant consumption in Turkey, and since 14 out of 15 articles (93%) recounted adverse effects associated with antidepressants, public health developers, health professionals, and consumers should proceed with caution when forming policy, prescribing, or using antidepressants.[10,12,20-22,24-33] Turkey can abide by the guidelines and restrictive drug policy such as those outlined by the EU's recent drug strategy of 2021-2025 with the aim to support effective treatments of mental disorders using antidepressants while reducing unnecessary exposure to adverse effects.[13]

As a non-systematic narrative review, only a limited number of sources were included in the analysis. A systematic review with a larger sample size would provide a broader understanding of the subject.[19] The CASP qualitative checklist identified that 5 articles were at risk of bias and unethical practice because there was a lack of articulation on various aspects of the research methodology; thus, future reviews are suggested to exclude articles that have failed to meet CASP standards.[17] As a result of the study's limitations, further research is advised to include more significant sample size and a diverse population to better generalize the findings of the study.[17,19]

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