J Ment Health Disord. 2024;4(1):1-7.

Journal of Mental Health Disorders Research Article

Understanding Anxiety

Matthew Rensi[1,*], James Geisler[2], Justin Jacques[3], Charles Silber[4]

[1]Western Seminary, San Jose, CA 95120, USA

[2]Sacred Heart University, Fairfield, CT 06825, USA

[3]National University, USA

[4]Rutgers University, NJ, USA

[*]Correspondence should be addressed to Matthew Rensi, mrensi@westernseminary.edu

Received date: February 23, 2024, **Accepted date:** March 22, 2024

Citation: Rensi M, Geisler J, Jacques J, Silber C. Understanding Anxiety. J Ment Health Disord. 2024;4(1):1-7.

Abstract

This study is the first of its kind to diachronically analyze how the use of language surrounding anxiety has changed in each version of the *Diagnostic and Statistical Manual of Mental Disorders (DSM)*. Using corpus linguistic technology, the collocations of the word "anxiety" were analyzed and ranked using log dice to determine the strength of associations both within and across each version of this clinical guide. The results demonstrate that collocations among anxiety are changing with each published manual. In addition, specific diagnoses (i.e., generalized anxiety, separation anxiety, and panic disorder) are in flux over time. Lastly, the interpersonal language associated with anxiety is changing, leading to implications for both researchers and clinicians in the field of mental health.

Keywords: DSM, Anxiety, Corpus linguistics, Collocates

Introduction

Practitioners in the field of mental and behavioral health have become very familiar with how anxiety presents itself in the clinical space. Since the COVID-19 pandemic, the surge of anxiety throughout the lifespan has been observed extensively across disciplines. With language associated with anxiety becoming more prevalent, there is a shift in how anxiety has been defined, and thus, has influenced the way mental illness is discussed among those impacted, regardless of which side of the therapy room someone is on. Currently, clinicians grapple with understanding the way anxiety has changed over time, especially objectively, which has a bi-directional influence through using the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*).

Fortunately, there is a way to better understand the changes associated with the semantics of meaning of anxiety over time. The context and associations with anxiety can be further understood through an examination of the linguistic dimensions and features based on a technology-informed methodology. Through this approach, the field can be better informed of both the evolutionary development of the word anxiety in the most prominent text associated with its classification and diagnosis.

Rationale

Since the inception of this research, the data on anxiety and their prevalence in the United States have grown exponentially. With the *DSM* remaining the manual for diagnosing in the field of psychiatry and behavioral health, it is undeniably both influencing and influenced by culture, so much so that seven versions have been created since the publication of the original *DSM* in 1952 [1]. Only one diachronic study with a foundation in corpus linguistics has examined the language across versions of the *DSM* [2]. With anxiety being the most common mental illness in the United States, the need to understand the language surrounding its diagnostic properties is imperative, especially to fully grasp the aforementioned influence of this diagnosis in the field, the United States culture, and world.

Four topics were identified in a review of the research on anxiety and specifically how the concept of anxiety has been

defined over time: (a) the prevalence of anxiety in the United States, (b) anxiety as a diagnosis in the *DSM*, (c) the cultural influence of anxiety, and (d) the intersection of mental health and corpus linguistics.

According to the Anxiety and Depression Association of America [3], over 19% of the U.S. adult population is affected by an anxiety disorder, making it the most common mental illness in this country. Over 9% (5.8 million) of children carry a diagnosis of anxiety [4], which, when left untreated, is associated with depression, school failure, and substance use disorders [5]. Despite anxiety disorders being treatable, only about 37% of those with these diagnoses receive treatment. With the rise in mental health issues across the United States, a need exists to continue to study anxiety disorders and how the diagnoses of these disorders have evolved and will continue to evolve.

Anxiety first appeared within a diagnostic category in the *DSM-I* but within the chapter of "psychoneurotic disorders" and under the classification "anxiety reaction" [1]. It was not until the *DSM-II* [6] was released that anxiety became a characteristic of neuroses, presented under the diagnostic category "anxiety neurosis." Generalized anxiety disorder (GAD) is the most familiar and cited anxiety disorder in the United States and was recognized as a disorder in the release of the *DSM-III* [7], when the word "neuroses" was eliminated from the language in this version. Since the *DSM-III*, the manual and classification of anxiety disorders has continued to evolve, as has the collaboration with the APA in contributing to this evolution. Despite these transformations, the granular study of language as it relates to anxiety disorders remains absent.

The *DSM* is used by practitioners throughout both the United States and internationally. As it relates to the influence of culture on the *DSM*, an international review team is specifically designed to examine the implications of diagnosis and culture to incorporate findings in the section on culture-related diagnostic issues [8]. However, it is important to note that with anxiety, specifically, cross-cultural comparisons fail to disaggregate diverse cultural groups [9]. Because linguistics can be studied diachronically, new opportunities to examine the evolution of language associated with the *DSM* and anxiety can be accomplished.

Corpus linguistics is a methodology that uses computer programs to analyze large sets of data and their underlying structure, meaning, and patterns. Corpus linguistics began intersecting the field of behavioral health starting in the mid-1990's, with increasing numbers of studies over the past decade. With the issues among the mental health field being so vast, many corpus linguistic studies have analyzed anxiety through the sphere of social media [10,11] rather than professional literature. Still, studies such as these are synchronic in nature, and a diachronic approach to analyze the phenomenon of anxiety would help to understand its evolution over time.

Within corpus linguistics is the ability to study language from a variety of perspectives. One of which is through collocation network analysis. Collocations are, in essence, words that repeatedly co-occur in text [12]. Of the many benefits of studying collocations is the ability to examine the relationships of words through tables, as well as through visual summaries such as networks/graphs. Sophisticated programs such as #Lancsbox assist in converting the numerical values of collocations to more layered analyses. The rationale for using collocations analyses is the greater opportunity to examine both words in isolation as well as the habitual co-occurrence of words together and how those co-occurring words have changed over time.

The purpose of this study is to explore how language relating to the diagnosis of anxiety disorders has changed since the inception of the *DSM*. Anxiety disorders remain the most common mental illness in the *DSM*, and yet an understanding of how language is used in diagnosing since the first *DSM* has yet to be studied. Using corpus linguistics, specifically through the lens of collocations, we hope to contribute to the helping professional field and facilitate a greater understanding of how much anxiety has changed or remained static over the course of the development of the *DSM*.

Three research questions were developed to guide this study:

RQ1: What is the frequency of the word "anxiety" in comparison to total word count in each version of the *DSM*?

RQ2: What are the top 15 collocates of anxiety in each version of the *DSM*?

RQ3: How have the collocates of anxiety changed over time?

Method

Design

This study utilized a diachronic corpus linguistic design [13] specifically focusing on collocations. The variables were the node word 'anxiety', and any collocations of the node word within a five-word span to the left and right.

Corpus

Register, scope, and sources: The sources of the corpus in this study included versions of the *DSM* starting with the first edition and ending with the recently released *DSM-5-TR* [14]. Two specific manuals in this sequence were excluded: the *DSM-I Special Supplemental* [15] and the *DSM-II 6th Printing Change* [16] as the first is not a *DSM* diagnostic manual, and the second is a retroactive publication that is irrelevant to the development of linguistic features of anxiety words.

For the *DSM-I* through the *DSM-IV-TR*, PDF versions of the manual were utilized. For the *DSM-5* and *DSM-5-TR* the electronic versions through psychiatry.org were utilized. The *DSM-5-TR* was accessed in April 2022 shortly after its release.

This is significant because there have been text updates to the *DSM-5-TR* since then, but with a minimal impact on the anxiety disorder subsections.

Because classification and grouping of anxiety over time has changed, it was best to examine the specific subsections of each manual that seemed to address anxiety specifically. Thus, for the *DSM-I,* all material under "Psychoneurotic Disorders" was included since descriptions of these disorders identify anxiety as the chief symptom [1]. From the *DSM-II,* all material under the heading "Neuroses" was included due to these disorders being marked by anxiety [6]. In the *DSM-III,* there is a shift to identifying anxiety disorder as its own diagnostic category, which has continued through the *DSM-V-TR* [7,14]. Thus, for the *DSM-III*, *DSM-III-R*, *DSM-IV*, *DSM-IV-TR*. *DSM-5,* and *DSM-5-TR* the material under the diagnostic category "Anxiety Disorders" was included [7,14,17-20].

Corpus preparation: All files were converted to .txt format for compatibility with the analysis software. The .txt files were separately reviewed by each researcher to ensure there were no errors in the conversion. Another linguistic study of the *DSM* has taken a more aggressive approach to preprocessing due to the nature of their analysis [2]. However, this study focused on collocations and thus did not require the same level of preprocessing for the analysis to occur. The only preprocessing was done on the *DSM-5* and *DSM-5-TR*. Both manuals in their electronic forms include in-text citations and references in each subsection. Because the analysis software included authors' names in counts regarding collocations and because the *DSM-I* through the *DSM-IV-TR* did not include in text citations or references it was appropriate to remove in-text citations and the references section to keep anxiety collocations consistently counted across all manuals.

Measures

Query words: Query words are the specific node words used to identify collocations. Possible candidates for query words in this study being words with a high semantic or conceptual overlap with anxiety. As, the entire point of the study was to identify what the meaning of anxiety is over time; therefore, using semantically similar words would have been to put the cart before the horse. Therefore, the query term for the study was anxiety.

Log Dice: Log Dice computes the harmonic mean of two ratios that convey the tendency of two words to appear together relative to the individual frequencies of the words in the text corpus [21]. As a standardized metric it characterized the assessment and comparison of collocations extracted from corpora of varying sizes [22].

Apparatus: Two programs were utilized in this analysis: Antconc [23] and Lancsbox [24]. Antconc is a language processing program that can perform various analyses on a corpus, but for this study it was utilized in the text conversion from PDF to .txt and then used to check for errors in the conversion.

Lancsbox is a similar corpus analysis program and was used in this study to identify the specific collocates with the Log Dice.

Data analysis

In terms of RQ1, raw count frequency and the percentage of the word anxiety were calculated out of the total words or tokens reported for each of the eight *DSM* versions using #Lancsbox X.

Regarding RQs 2–3, the minimum Log Dice for inclusion was statistical cutoff value: 6.0: and minimum collocation frequency: 5 [24]. Regarding the maximum number of collocations to show from each query, the parameters or non-shared collocates per query was 30, and the shared collocates per query was also 30. The parameters for L and R span (L5–R5), minimum collocate frequency, and minimum collocation frequency were drawn from Brezina [24]. The higher the Log Dice score, the more the two words appear exclusively [21]. The top 15 words that collocated with anxiety are reported in **Table 2**. Stop words [25] were not included **Table 1**.

Table 1. Frequency of "anxiety" across all versions of *DSM*.

DSM	**Frequency**	**Tokens**	**Percentage**
I	14	971	1.44
II	5	859	0.58
III	54	5125	1.05
III R	63	7529	0.83
IV	316	23143	1.36
IV TR	343	25252	1.35
5	577	24075	2.39
5 TR	586	25460	2.30

Results

Regarding RQ1, the frequency of the node word anxiety in proportion to the total word count in the anxiety-related disorder chapter of each *DSM* can be found in **Table 1**. It is worth highlighting that the highest percentage of anxiety in proportion to the total word count was found in *DSM-I* (1.44%) until six versions later with the *DSM-5* (2.39%). While the frequency of anxiety leveled off on both versions of the *DSM-IV*, an over 1% increase was observed in the *DSM-5,* which was maintained in the text revised version that followed.

As for RQ2, the top 15 collocates of anxiety and their associated Log Dice measure can be found in **Tables 2** and **3**. The fixed maximum value of Log Dice is 14.

Table 2. Top 15 collocates of "anxiety" *DSM-I* through *DSM-III R*.

DSM I	**Log Dice**	***DSM II***	**Log Dice**	***DSM III***	**Log Dice**	***DSM III R***	**Log Dice**
reaction	12.9	neuroses	12.5	disorders	12.8	disorders	12.1
kind	12.1	repeated	12.4	generalized	12.8	generalized	12.0
disorders	12.1	circumstances	12.4	disorder	12.4	invariably	11.7
attempts	12.0	present	12.4	separation	11.5	disorder	11.6
impulse	12.0	handwashing	12.4	features	11.3	intense	11.6
felt	11.9	disturbed	12.4	panic	11.3	agoraphobic	11.4
phobic	11.8	characteristic	12.4	individual	11.3	immediate	11.2
patient	11.6	gain	12.4	anxiety	11.2	behavior	11.2
compulsive	11.1	chief	12.4	diagnosis	11.1	situations	11.1
lessen	11.1	functioning	12.4	persistent	11.0	avoidance	11.1
discharged	11.1	rituals	12.4	often	10.9	response	11.1
obsessive	11.1	under	12.4	predisposing	10.7	common	11.0
ordinarily	11.1	neurosis	12.3	factors	10.7	phobic	11.0
handle	11.1	occur	12.2	essential	10.6	anxiety	10.6
detached	11.1	secondary	12.2	depressive	10.6	symptoms	10.6

Table 3. Top 15 collocates of "anxiety" *DSM-IV* through *DSM-5 TR*.

DSM IV	**Log Dice**	***DSM IV TR***	**Log Dice**	***DSM 5***	**Log Dice**	***DSM 5 TR***	**Log Dice**
disorder	13.0	disorder	13.0	disorder	13.5	disorder	13.5
generalized	12.3	generalized	12.4	social	12.5	social	12.5
symptoms	12.0	symptoms	11.9	disorders	12.3	disorders	12.1
anxiety	11.6	anxiety	11.4	separation	11.9	separation	12.1
due	11.3	disorders	11.3	fear	11.9	fear	11.9
substance-induced	11.2	due	11.3	generalized	11.8	generalized	11.8
general	11.2	substance-induced	11.2	symptoms	11.3	anxiety	11.3
separation	11.1	general	11.2	anxiety	11.3	symptoms	11.3
disorders	10.9	worry	11.2	may	11.3	may	11.2
may	10.8	separation	11.1	medical	11.0	individuals	11.0
avoidance	10.7	may	10.9	another	11.0	medical	11.0
social	10.5	avoidance	10.7	panic	10.9	panic	10.9
excessive	10.4	social	10.6	individuals	10.9	another	10.9
condition	10.4	excessive	10.4	due	10.9	due	10.8
medical	10.3	specific	10.4	avoidance	10.8	avoidance	10.7

In response to RQ3, many of the collocates have remained consistent, but many other collocates have changed significantly. Additionally, the relative strength or weakness of the collocations have changed as well. The specific collocates can be viewed in **Tables 2** and **3**.

Discussion

The results present an initial picture of both static elements of anxiety yet also dynamic elements that are in flux. Regarding RQ1, we note that overall word count of anxiety in contrast to total word count is relatively stable with an initially high count in the *DSM-I* that drops off in the *DSM-II*, picks up in the *DSM-III*, has a slight dip in the *DSM-III-TR,* and then continues to increase generally with each new manual. One trend is that in each revised manual (*DSM-III-R*, *DSM-IV-TR,* and *DSM-5-TR*) the usage of anxiety in proportion to total word count is less than its predecessor.

Along these same lines, the total word count of the *DSM-IV-TR* and *DSM-5-TR* are relatively close, which suggests that either the concept of anxiety is reaching a limit or the appropriate bounds to what can be said about it in the context of a diagnostic manual. An alternative explanation is that the register is constricting what is being written about. Given that Rensi and Dykeman [2] noted continued increase in word count in the substance use sections, it is more likely that the first hypothesis is the case.

Regarding RQ2, the top 15 collocates in each version of the *DSM* have changed. Although the changes from new versions of the *DSM* to the text revisions appear to be less striking, each new version of the *DSM* has different collocates. This has two possible explanations. First, the concept of anxiety is actively in flux. Second, the writing style of the *DSM* is actively in flux. Between these two explanations the first appears most likely as two previous studies have found the writing style of the *DSM* to be relatively stable or at least constrained by the specific register of the *DSM* [2,26].

Regarding RQ3, there are several ways that the collocates have changed. First, the concept of anxiety as a disorder has been firmly established since the *DSM-III*. This pattern has not changed except in the fact that more and more anxiety is being linked with the concept of disorder; the log score has increased over time to the point where disorder is almost exclusively used in collocation with anxiety (13.5 log dice where the maximum is 14). Thus, the concept of anxiety as a disorder is both enduring and increasing in strength.

In contrast to the relative stability of the concept of anxiety as a disorder, the focus on specific diagnoses appears to be in flux. The term "generalized" has a high Log Dice score and relative place in the *DSM-III* through the *DSM-IV-TR* but then drops off in the *DSM-5*. The term substance-induced is present in the *DSM-IV* and *DSM-IV-TR* but then disappears from the *DSM-5*. The term "medical" is in the *DSM-IV*, missing from the *DSM-IV-TR*, and present in increased strength in the *DSM-5* and *DSM-5-TR*. The term "separation" is present in the *DSM-III*, missing from the *DSM-III-TR*, back in the *DSM-IV*, and increased in strength in the *DSM-5* and *DSM-5-TR*. The term "panic" nearly follows this course except that it does not reappear in the *DSM-IV* or *DSM-IV-TR*. However, it does show up in the *DSM-5* and *DSM-5-TR* but at a lesser strength than the *DSM-III*. Lastly, the term "social" appears first in the *DSM-IV* and increases in strength in the *DSM-5* and *DSM-5-TR*.

There are two possible explanations for this, first, it could be that the diagnoses and symptoms themselves are in flux. Alternatively, instead of the diagnoses or symptoms being in flux, the emphasis within the concept of anxiety is changing. Given that no new diagnoses have been added to the anxiety disorder section since the *DSM-IV*, this appears to be a subtle shifting of focus from one diagnosis to another. The idea is not that the diagnoses themselves have changed, but the emphasis has. Which leads to the next observation.

The concept of anxiety is increasingly becoming tied to interpersonal interactions. The term separation first appeared in the *DSM-III*, drops off in the *DSM-III-R*, returns in the *DSM-IV*, and ends in the *DSM-5-T*R at the strongest collocation strength. Along this line the term social first appeared in the *DSM-IV* and increased in strength until the *DSM-5-TR* in which it is second in collocations only to disorder. Broadly speaking, the *DSM-I* has no collocates that are tied to environmental/relational factors, where the *DSM-5-TR* has two of its top four collocates being social words, and the other two collocates are disorder and disorders. Thus, anxiety is increasingly being used in the context of human relationships or lack thereof.

The first explanation for this is that from a clinical perspective, anxiety is increasingly being viewed as more of a relational disorder rather than an individual disorder. Alternatively, this could be explained by great disconnection in the public; increased use of technology, combined with social media and the COVID-19 pandemic have impacted people's ability to interact socially, and thus anxiety is increasingly being seen in the context of social interactions. Of these two explanations, the second appears more likely due to two major factors: the first explanation simply deals with an observation of clinical response while the second explanation deals with the causes of the shift; additionally, the second explanation is in line with other research on anxiety [27].

Lastly is the shift in authorial stance, or the relative confidence/certainty or hesitancy of the authors. In corpus linguistics these two concepts are called hedges (hesitancy or lack of certainty) and boosters (certainty or confidence). In the *DSM-III-TR* we see the word "invariably," which is a booster, while it immediately drops off in the *DSM-IV*, while we see a concurrent use of the word "may," which is a hedge, from the *DSM-IV* onward. There are two explanations for this. First, the

authors of the *DSM* from the *DSM-IV* onward are signaling that they are less confident about anxiety in general. In contrast, it may be that this is simply a chance observation and would not stand up to a rigorous research examination. Given that other research has shown boosters and hedges to be relatively stable in the *DSM* [26] it is more likely that the second option is correct, but additional research would be necessary to completely confirm this theory.

Limitations

There are three limitations to this study that should be considered when interpreting the findings. First, limitations exist in the sample size, as the anxiety section from each *DSM* represents a relatively small sample size for analysis, especially within earlier additions, which could limit the statistical power and generalizability of the results. Small sample sizes result in increased variability in frequency and collocation statistics, so trend analysis across editions may be harder to detect in a significant and meaningful way.

Second, anxiety disorder compositions, categories, and names have changed across *DSM* editions. The tracking of diagnostic terms over time is complicated by these changes and affecting the ability to compare collocation frequencies and strengths across *DSM* editions, which could be less accurate without properly accounting for major taxonomy changes across editions. An example being posttraumatic stress disorder and obsessive-compulsive disorder have been added to the anxiety sections and then moved to their own sections. Other terms such as anxiety neurosis have been subtracted, and others have been renamed.

Third, not all collocates for each node word of anxiety were used across each version of the *DSM*. Our corpus included only the text for the specific description of anxiety disorder in each edition of the *DSM* (*DSM-I* through *DSM-5-TR*) and not the use of the word anxiety in the entire *DSM* text edition. This may have an impact on our findings because the word anxiety may have different collocations or accompanied words when it is used in the context of different parts of the text—for example, when used to describe a different disorder.

Implications

Based on the results there are a couple of key implications. The first implication is that the concept of anxiety is increasingly being tied to social interactions. This is significant because treatments for anxiety focus on individual therapy or treat anxiety as an individual disorder. The APA Division 12 website lists two treatments for GAD: cognitive behavioral therapy (CBT) and Mom Power [28]. CBT is an individual treatment that typically does not include interpersonal foci but rather intrapersonal processes, and Mom Power is a combined group and individual treatment for a specific population, mothers. This is an example of how the *DSM* is moving more towards a social construction, while treatments are still focused on individuals. Researchers and clinicians may want to focus on interventions that take a relational or systemic approach to treating anxiety.

The second implication is that the concept of anxiety is changing over time. This has implications for the validity of research and current therapy models. Evidence-based practices that rely on studies conducted before 1980 (when the *DSM-III* was published) should be reconsidered. The concept of anxiety before the *DSM-III* is significantly different from the current understanding of anxiety. Additionally, studies conducted under the *DSM-III* and *DSM-III-TR* conception of anxiety may be seen as less valid due to the changes in how anxiety has been conceptualized since then. For example, the meta-analyses of CBT as a treatment for GAD were all conducted in the early 2000's, almost a decade before the *DSM-5*, and they mostly review research under the *DSM-III*, *DSM-III-TR*, and *DSM-IV* [29-33]. Researchers should consider replicating previous findings around treating anxiety to determine whether previous models of treatment continue to be as efficacious.

Lastly, clinicians should be cautious in how they discuss anxiety with clients. Increasingly, anxiety is being associated with a disorder, and this may have a negative effect in two main ways. First, it may over-pathologize a common experience; this is in line with Shorter [34] echoing Chadoff's [35] fears that common human experiences would become disorders in the *DSM* as the *DSM* increases in size and scope. Second, it casts anxiety in a wholly negative light. To have no anxiety is not a helpful condition. The student who feels no anxiety about exams and thus does not study, the hiker who feels no anxiety about snakes and thus sticks their hand in every hole, and the pilot who feels no anxiety about flying and thus does not perform the checks they should are all not served well by a lack of anxiety. Having no anxiety is unhelpful; rather, anxiety needs to be proportional, yet not debilitating.

Conflicts of Interest

We have no conflicts of interest to disclose.

References

1. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. Washington, DC: American Psychiatric Association; 1952.

2. Rensi M, Dykeman C. The Diagnosis of Substance Use Disorder Over the Past Century. In: Buser TJ, Cade R, Perera D. Annual Review of Addictions and Offender Counseling, Volume V: New Directions in Research and Practice. 2022; pp. 5:117.

3. Anxiety and Depression Association of America. (n.d.). Anxiety disorders: Facts and statistics. https://adaa.org/understanding-anxiety/facts-statistics

4. Centers for Disease Control and Prevention. Anxiety and depression in children: Get the facts. 2023, October 19. https://www.cdc.gov/childrensmentalhealth/features/anxiety-depression-children.html

5. Child Mind Institute. Children's mental health report. 2018. https://childmind.org/awareness-campaigns/childrens-mental-health-report/2018-childrens-mental-health-report/

6. American Psychiatric Association. Diagnostic and statistical manual of mental disorders, 2nd Edition (DSM-II). Washington, DC: American Psychiatric Association; 1968.

7.American Psychiatric Association. Diagnostic and statistical manual of mental disorders, 3rd Edition (DSM-III). Washington, DC: American Psychiatric Association;1980.

8. American Psychiatric Association. (n.d.). Frequently asked questions. https://www.psychiatry.org/psychiatrists/practice/dsm/frequently-asked-questions

9. Kirmayer LJ, Ryder AG. Culture and psychopathology. Current Opinion in Psychology. 2016 Apr 1;8:143-8.

10. Greaves MM, Dykeman C. A corpus linguistic analysis of public Tumblr blog posts on non-suicidal self-injury. Doctoral dissertation, Oregon State University. PsyArXiv. https://doi.org/10.31234/osf.io/k4qt3.

11. Shen JH, Rudzicz F. Detecting anxiety through reddit. In: Proceedings of the Fourth Workshop on Computational Linguistics and Clinical Psychology—From Linguistic Signal to Clinical Reality. 2017; pp. 58-65.

12. Brezina V. Collocation graphs and networks: Selected applications. Lexical collocation analysis: Advances and Applications. 2018:59-83.

13. Brezina V. Statistics in corpus linguistics: A practical guide. Cambridge University Press; 2018.

14. American Psychiatric Association. The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision (DSM-5-TR). Washington, DC: American Psychiatric Association; 2022.

15. American Psychiatric Association. Diagnostic and Statistical Manual [of] Mental Disorders: With Special Supplement on Plans for Revision. Washington, DC: American Psychiatric Association; 1965.

16. American Psychiatric Association. DSM-II 6th Printing Change: Elimination of Homosexuality as a Mental Disorder and Substitution of the New Category Sexual Orientation Disturbance. Washington, DC: American Psychiatric Association; 1973.

17. American Psychiatric Association. Diagnostic and statistical manual of mental disorders, 3rd Edition, revised (DSM-III-R). Washington, DC: American Psychiatric Association;1987.

18. American Psychiatric Association. Diagnostic and statistical manual of mental disorders, 4th Edition (DSM-IV). Washington, DC: American Psychiatric Association;1994.

19. American Psychiatric Association. Diagnostic and statistical manual of mental disorders, 4th Edition, Text Revision (DSM-IV-TR). Washington, DC: American Psychiatric Association; 2000.

20. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5®). Washington, DC: American Psychiatric Publishing; 2013.

21. Gablasova D, Brezina V, McEnery T. Collocations in corpus-based language learning research: Identifying, comparing, and interpreting the evidence. Language Learning. 2017 Jun;67(S1):155-79.

22. Szudarski P. Collocations, Corpora and Language Learning. Cambridge University Press; 2023.

23. Anthony L. AntConc (Version 3.5. 8) [Computer Software]. Waseda University, 2019.

24. Brezina V, Timperley M, McEnery T. LancsBox, v. 4. x [software]. 2018.

25. Sebleier S. Multiple linear regression in R [Code snippet]. GitHub. 2013. https://gist.github.com/sebleier/554280

26. Rensi M, Dykeman C. Linguistic, Psychological and Metadiscourse Features of the Diagnostic and Statistics Manual of Mental Disorders: A Diachronic Examination of the Personality Disorders Section. PsyArXiv. https://doi.org/10.17605/OSF.IO/RTY7X.

27. Rosen LD, Whaling K, Rab S, Carrier LM, Cheever NA. Is Facebook creating "iDisorders"? The link between clinical symptoms of psychiatric disorders and technology use, attitudes and anxiety. Computers in Human Behavior. 2013 May 1;29(3):1243-54.

28. Society for Clinical Psychology. (n.d.). Psychological treatments for generalized anxiety disorders. https://div12.org/treatments/?_sfm_related_diagnosis=8147

29. Borkovec TD, Ruscio AM. Psychotherapy for generalized anxiety disorder. Journal of Clinical Psychiatry. 2001 Sep 1;62:37-45.

30. Butler AC, Chapman JE, Forman EM, Beck AT. The empirical status of cognitive-behavioral therapy: A review of meta-analyses. Clinical Psychology Review. 2006 Jan 1;26(1):17-31.

31. Gould RA, Otto MW, Pollack MH, Yap L. Cognitive behavioral and pharmacological treatment of generalized anxiety disorder: A preliminary meta-analysis. Behavior Therapy. 1997 Jan 1;28(2):285-305.

32. Gould RA, Safren SA, O'Neill Washington D, Otto MW. A meta-analytic review of cognitive-behavioral treatments. In: Heimberg RG, Turk CL, Mennin DS, (Eds.). Generalized anxiety disorder: Advances in research and practice. Guilford Press; 2004.

33. Mitte K. Meta-analysis of cognitive-behavioral treatments for generalized anxiety disorder: a comparison with pharmacotherapy. Psychological Bulletin. 2005 Sep;131(5):785-95.

34. Shorter E. The history of nosology and the rise of the Diagnostic and Statistical Manual of Mental Disorders. Dialogues in Clinical Neuroscience. 2015 Mar 31;17(1):59-67.

35. Chodoff P. Psychiatric diagnosis: a 60-year perspective. Psychiatric News. 2005 Jun 3.