

# Diagnosis and Treatment of Generalized Anxiety Disorder in Japan: Psychiatric Specialist Survey

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**Purpose:** Generalized anxiety disorder (GAD) is a suboptimally managed chronic recurring psychiatric condition with a lifetime prevalence of 2.6% in Japan. We assessed the current status of GAD management in Japan.

**Patients and Methods:** This was an observational, cross-sectional study conducted through an anonymous web-based survey in Japan from December 12–16, 2022. Psychiatrists and psychosomatic medicine physicians who agreed to participate and saw  $\geq 10$  outpatients in the previous month were eligible. Survey questionnaire comprised 37 single/multiple choice, numerical entry, or open-ended questions in Japanese.

**Results:** Among 509 participants (493 psychiatrists and 16 psychosomatic medicine physicians), 96.9% were aware of GAD. On average, 12.4 outpatients and 1.0 inpatient were diagnosed with GAD per physician per month. Of 433 physicians having patients diagnosed with GAD, 46.9% used operational diagnostic tools; among these, DSM-5 diagnostic criteria were used by 81.5% physicians. The majority (54.7%) of participants did not use a self-administered rating scale; depression scales were used more than anxiety scales. Among these 433 physicians, 96.8% used selective serotonin reuptake inhibitors for GAD management, and 79.2% used it as the first choice; of 431 physicians who prescribed drug therapy, 54.3% gave antidepressant monotherapy as first choice. The most frequent symptom in patients diagnosed with GAD was excessive anxiety/worry (96.5%); depression was the most commonly reported comorbidity (84.3%) as per physicians aware of GAD (N=508).

**Conclusion:** This study illustrates that although GAD awareness is high among Japanese psychiatric specialists, GAD is not frequently diagnosed using operational diagnostic approaches. Due to a lack of Japanese guidelines for GAD diagnosis and treatment, diverse international guidelines are followed, with similar treatment paradigms as that of depression. This may not be an optimal approach given cultural/geographical differences. These findings highlight the need for uniform diagnosis and treatment recommendations for GAD management in Japan.

**Clinical Trial Registration:** UMIN-CTR: UMIN000049572.

**Keywords:** anxiety, GAD, psychiatrist, psychosomatic medicine physician, survey

## Introduction

Generalized anxiety disorder (GAD) is a chronic and recurring psychiatric condition characterized by at least 6 months of persistent and excessive uncontrollable anxiety and worry about multiple events, on more days than days without such anxiety or worry. Key symptoms of GAD include restlessness, irritability, difficulty concentrating, muscle tension, sleep disturbances, and fatigue combined with significant distress or impairment in social, occupational, or other areas of function.<sup>1</sup>

Globally, the lifetime prevalence of GAD, evaluated based on the DSM-5 and using data from the World Health Organization World Mental Health Survey Initiative, was 3.7% for the period between 2001 and 2012.<sup>2</sup> Based on the World Mental Health Survey data from 2002–2006, the lifetime and 12-month prevalence of GAD per DSM-5 in Japan were 2.6% and 1.2%, respectively, which are marginally lower than that reported in other developed countries.<sup>2</sup> Despite a substantial prevalence, GAD remains insufficiently managed in Japan. Approximately 70% of all patients with GAD in

Japan fail to receive any treatment, and among those who do receive treatment, up to 32.5% do not perceive their treatment to be helpful.<sup>3</sup> It is worth noting that, in Japan, a slightly lower proportion of patients with GAD perceive their treatment to be beneficial than the patients with GAD in other high-income countries.<sup>3</sup> According to study estimates, each GAD patient would require 10 professionals for a 90% probability of GAD treatment to be perceived as helpful, while only 30% of patients would persistently try to seek help in the face of repeated unhelpful treatment encounters.<sup>3</sup>

Currently, no guidelines are published by Japanese authorities for GAD diagnosis and treatment. It is also noteworthy that there are currently no specific medications indicated for GAD in Japan. However, globally, GAD is diagnosed based on the DSM-5 diagnostic criteria. The Japanese version of DSM-5 was published in 2014 and was made widely available to physicians as operational diagnostic criteria in Japan for mental health disorder diagnosis.<sup>4</sup>

While psychiatrists and psychosomatic medicine physicians are considered specialists for treating anxiety disorders including GAD, the proportion of patients with anxiety disorders including GAD who receive treatment from mental health specialists remains low in Japan.<sup>5</sup> A survey of Japanese psychiatrists and psychosomatic medicine physicians on processes followed and challenges faced in the management of GAD will help to develop a deeper understanding about gaps in the diagnosis and treatment of GAD in Japan.

The purpose of this study was to gain insights on the current status of GAD management among psychiatrists and psychosomatic medicine physicians in Japan, as well as to clarify physicians' perception of GAD and the problems they face in its treatment.

## Materials and Methods

### Study Design and Participants

This study was an observational, cross-sectional study conducted anonymously between December 12 and 16, 2022, through a web-based questionnaire targeted at psychiatrists and psychosomatic medicine physicians to gain clinical practice insights for GAD. Invitations to participate in this web-based survey were shared with a cohort of psychiatrists or psychosomatic medicine physicians as psychiatric specialists in Japan recruited from a database managed by PLAMED Inc. (Tokyo, Japan). At the time of the survey, the PLAMED database included a total of 3014 psychiatrists and 159 psychosomatic medicine physicians, which represented approximately 20% of their total population in Japan. Informed consent for participation was collected electronically before administering the survey questionnaire via a consent form explaining detailed terms and conditions for the study with the ability to withdraw from the study before data lock. Respondents were included if they agreed to participate in the study, specialized in psychiatry or psychosomatic medicine, and saw  $\geq 10$  outpatients in the previous month. Study participants were provided with an honorarium to compensate for their time. The study was approved by the Medical Corporation TOUKEIKAI Kitamachi Clinic ethics committee and followed the Declaration of Helsinki, Ethical Guidelines for Medical and Biological Research Involving Human Subjects and “*Act on the Protection of Personal Information*”. This study is registered in the University Hospital Medical Information Network Clinical Trials Registry (UMIN 000049572).

### Survey Questionnaire

Survey questions were in the Japanese language. Since there are no prior studies on the current status of diagnosis and treatment of GAD or on the attitudes of healthcare providers towards GAD, a new questionnaire was developed based on the inputs provided by medical experts in Japan. The survey questions covered the following domains: respondent demographics; awareness of GAD; diagnosis and treatment of GAD including treatment challenges; GAD awareness among physicians and general public; understanding of the DSM-5 diagnostic criteria; number of patients with GAD per the DSM-5 criteria managed by the physicians; status of collaboration with nonspecialists; and opinions of the participants on the need for educating psychiatrists, psychosomatic medicine physicians, and the general public about the disease.

The questionnaire comprised 37 single/multiple choice, numerical, or open-ended questions in Japanese, and the time expected to complete it was approximately 15 minutes. An English translation of the questionnaire is provided in [Supplementary Table 1](#). Participants received emails with the URL to access the web-based questionnaire. All responses

were recorded and collected electronically. To ensure the survey-user interface worked seamlessly as designed, dummy data were recorded and verified for accuracy in the captured database and then deleted. No identifiable information of the participants was collected.

## Statistical Analyses

A target sample size of 500 participants was pre-decided and was thought to provide a representative sample of the study population. After target responses were reached, participants with an exceptionally high number of patients treated and participants with unclear or inappropriate answers to open-ended questions were considered as outliers and removed from the analysis, as previously specified in the protocol. Data extraction and analyses were performed by 2 independent analysts and matched to verify accuracy. Only descriptive analyses were carried out and data were presented as count or percentages for categorical variables and summary statistics (mean, standard deviation, median, or range) for continuous variables. All statistical analyses were performed using ASSUM for Windows Version 5.8 (tabulation of categorical variables), R-4.2 (calculation of summary statistics for continuous variables, statistical analysis), and Microsoft Excel for Microsoft 365 MSO (output of charts and tables, layout adjustment).

## Results

### Participants

Of the 3173 psychiatric specialists (as of December 2022) from the database, 2150 (68.1%) physicians were randomly contacted to participate in the study. Survey was censored at 500 participants, with the overall response rate of the survey at 24.4% (N=525 participants). A total of 13 participants were excluded as they had reported fewer than 10 outpatients in the previous month. A further 3 participants were excluded after data cleaning. Thus, 23.7% (n=509 of 2150 physicians contacted) of participants had valid responses and were included in the analyses. Among the 509 participants, 493 (96.9%) were psychiatrists and 16 (3.1%) were psychosomatic medicine physicians. The majority of participants (55.6%) were in the age group of 30–49 years and 85.9% had  $\geq 5$  years of clinical practice as psychiatrists; furthermore, 53.6% were working at mental hospitals. The participants reported a mean of 222.6 outpatients and 23.4 inpatient consultations/month/physician. Many participants held certifications of “Physician for mental health” (74.7%) and “Japanese Society of Psychiatry and Neurology Specialist” (65.8%) and were members of the “Japanese Society of Psychiatry and Neurology” (88.8%) (Table 1).

**Table 1** Characteristics of Survey Participants

Physician Characteristics (N=509)	Number (%) or Mean
Specialty	
Psychiatry	493 (96.9)
Psychosomatic medicine	16 (3.1)
Age group, years	
20–29	29 (5.7)
30–39	135 (26.5)
40–49	148 (29.1)
50–59	123 (24.2)
60–69	68 (13.4)
$\geq 70$	6 (1.2)

(Continued)

**Table 1** (Continued).

Physician Characteristics (N=509)	Number (%) or Mean
Clinical practice experience, years	
<1	10 (2.0)
1 to <3	26 (5.1)
3 to <5	36 (7.1)
5 to <10	81 (15.9)
10 to <20	158 (31.0)
≥20	198 (38.9)
Type of medical institution	
Psychiatric hospital	273 (53.6)
Clinic	112 (22.0)
University hospital	64 (12.6)
General hospital (other than university hospitals)	59 (11.6)
Others	1 (0.2)
Number of outpatients/month, mean	222.6
Number of inpatients/month, mean	23.4
Designations held	
Physician for mental health	380 (74.7)
Japanese Society of Psychiatry and Neurology Specialist	335 (65.8)
Specialist in clinical neuropsychopharmacology	22 (4.3)
Liaison psychiatric specialist at general hospitals	22 (4.3)
Psychosomatic medicine specialist	10 (2.0)
Psychosomatic internal medicine specialist	6 (1.2)
Others	20 (3.9)
None in particular	86 (16.9)
Academic society member	
Japanese Society of Psychiatry and Neurology	452 (88.8)
Japanese Society of Clinical Neuropsychopharmacology	54 (10.6)
Japanese Society of General Hospital Psychiatry	53 (10.4)
Japanese Society of Mood Disorders	43 (8.4)
Japanese Society of Biological Psychiatry	30 (5.9)
Japanese Society of Neuropsychopharmacology	25 (4.9)
Japanese Society of Psychosomatic Medicine	21 (4.1)
Japanese Society of Psychosomatic Internal Medicine	14 (2.8)
Japanese Society of Anxiety and Related Disorders	9 (1.8)
Others	25 (4.9)
None in particular	39 (7.7)

**Notes:** Due to multiple choice questions or rounding, the percentages will not add up to 100.

## Patients Diagnosed with GAD

The proportion of physicians that were aware of GAD was high, estimated to be 96.9% (“Very familiar” [85.5%]; “Knew a little about it” [11.4%]). Most participants (91.2%) were currently seeing patients with GAD. An average of 12.4 (~1 in 18) outpatients/month and 1.0 (~1 in 23) inpatient/month were diagnosed with GAD by each physician while the median rates of diagnosis were 5 outpatients/month and 0 inpatient/month. Additionally, the mean number of patients per physician suspected of having GAD was 8.7 outpatients/month and 0.8 inpatient/month; median was 3 outpatients/month and 0 inpatient/month. Thus, each physician treated approximately >20 patients/month with GAD or suspected GAD, most of whom were outpatients. In physicians who see patients with suspected GAD (N=386), the most common reasons reported for not diagnosing GAD in patients with suspected GAD were “because diagnosing comorbidity is sufficient” (53.6%), “because it is difficult to make a definitive diagnosis” (50.0%), and “because there is no therapeutic drug with indications for GAD even if GAD is diagnosed” (14.5%).

## Patient Referral and Characteristics

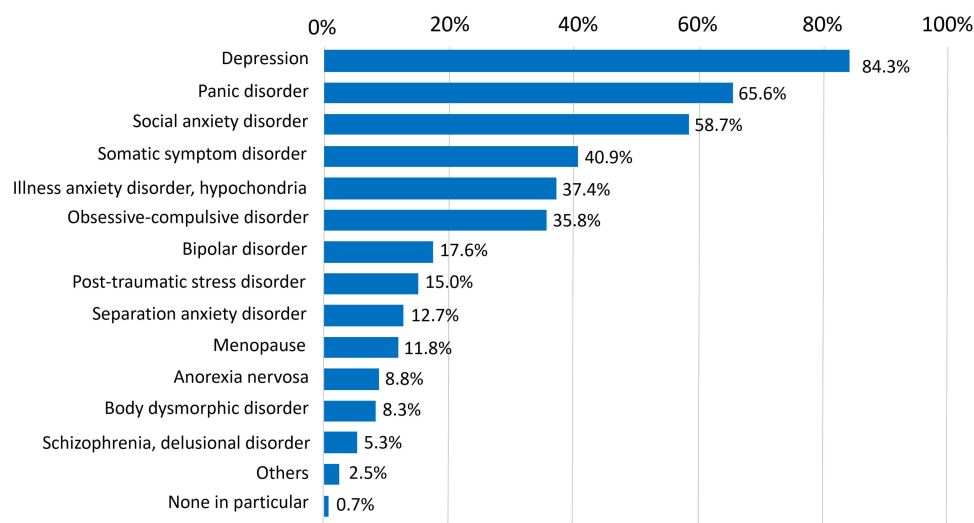
A larger proportion (52.7%) of physicians received referrals for patients with suspected GAD from nonspecialists (“often received referrals” [8.8%]; “received referrals” [43.8%]) in comparison with physicians who did not (26.3% [“did not receive referrals” {18.7%}; “did not receive referrals at all” {7.7%}]). Physicians who received suspected GAD referrals from nonspecialists (N=268) reported that in these patients, the most frequently cited chief symptomatic complaints were “excessive anxiety/worry” (93.3%), “restlessness/tension/nervousness” (58.2%), “sleep disturbances” (50.7%), and “easily fatigued” (32.8%). Key reasons for patients being referred by nonspecialists included “because the patients were judged to need specialized treatment” (70.9%), “because the physician did not know how to treat” (49.3%), “because the patients had severe symptoms” (33.2%), and “because the patients had concurrent depressive or other symptoms” (31.3%). Per physicians having patients diagnosed with GAD (N=433), the most commonly cited complaints reported by patients with GAD were “excessive anxiety/worry” (96.5%), “restlessness/tension/nervousness” (75.5%), “sleep disturbances” (60.0%), and “easily fatigued” (51.0%). The most frequently reported comorbidities were depression (84.3%), panic disorder (65.6%), and social anxiety disorder (58.7%) in GAD (Figure 1).

## Diagnosis

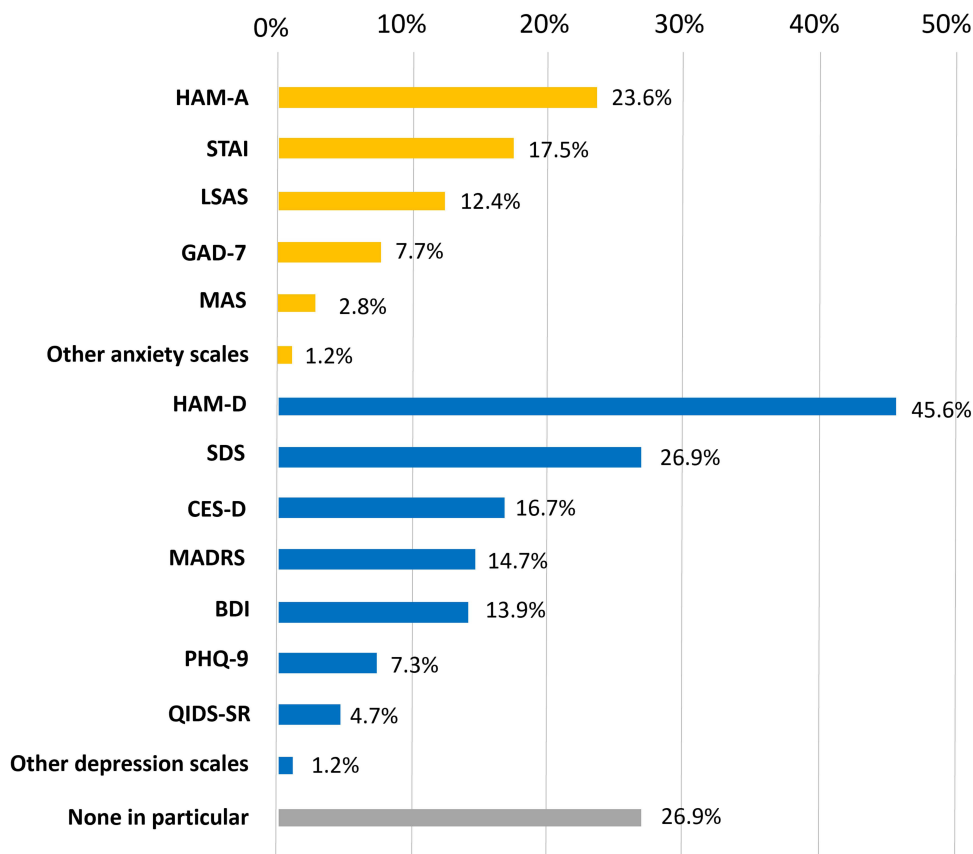
Results on the diagnostic approaches employed by the participants showed that physicians with patients with diagnosed GAD (N=433) “often” (22.9%) and “sometimes” (24.0%) used operational diagnostic approaches for GAD, and when such an approach was used by physicians (N=394), 81.5% used the DSM-5 diagnostic criteria.

Although physicians were generally aware of the diagnostic criteria for GAD in the DSM-5 (“familiar” [39.7%]; “have some knowledge” [44.4%]), over 10% of physicians did not know the details (“knew little” [7.5%]; “knew nothing” [2.9%]). After close review of the diagnosis with the DSM-5 diagnostic criteria, physicians reported a possible change or addition of a GAD diagnosis for a mean of 5.0 outpatients/month and 0.8 inpatient/month, most having current diagnoses of depression (37.4%), panic disorder (16.7%), and social anxiety disorder (15.0%).

More physicians, who had patients diagnosed with GAD (N=433), did not (“not at all” [21.9%]; “not very much” [32.8%]) refer to the self-administered rating scale for GAD diagnosis than those who did (“occasionally” [23.1%]; “quite often” [7.4%]). Of the several rating scales used in daily practice (not limited for assessment of GAD), overall, depression rating scales were used more frequently (Hamilton Depression Scale [45.6%] and Self-rating Depression Scale [26.9%]) than anxiety rating scales, and of all the anxiety rating scales, Hamilton anxiety scale was the most commonly used (23.6%) (Figure 2).



**Figure 1** Common comorbidities in patients with GAD based on responses of physicians having patients with GAD diagnosis (N=433).



**Figure 2** GAD diagnosis and rating scales used in daily practice for patients with GAD Routinely used anxiety and depression rating scales by psychiatrists and psychosomatic medicine physicians in clinical practice. The yellow histograms are related to anxiety rating scales and the blue histograms are depression rating scales. These findings are based on all participants (N=509).

**Abbreviations:** BDI, Beck Depression Inventory; CES-D, Center for Epidemiologic Studies Depression Scale; GAD, Generalized Anxiety Disorder scale; HAM-A, Hamilton Anxiety Rating Scale; HAM-D, Hamilton Depression Rating Scale; LSAS, Liebowitz Social Anxiety Scale; MADRS, Montgomery-Asberg Depression Rating Scale; MAS, Mania Scale; PHQ, Patient Health Questionnaire; QIDS-SR, Quick Inventory of Depressive Symptomatology Self-Report; SDS, Self-Rating Depression Scale; STAI, State-Trait Anxiety Inventory.

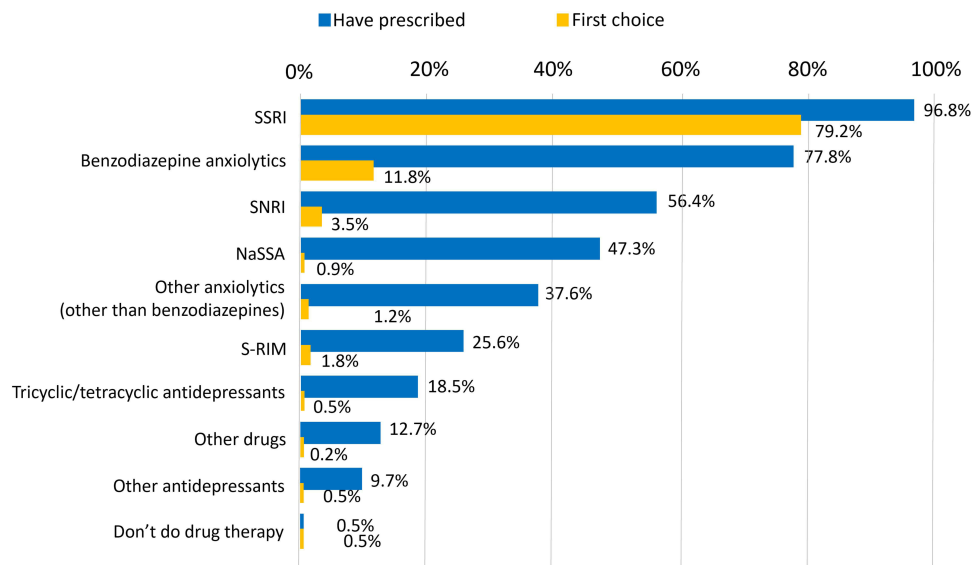
## Medical Treatment

Per physician having patients with GAD diagnosis (N=433), the most commonly prescribed medications for GAD were SSRIs (96.8%), benzodiazepine anxiolytics (77.8%), and SNRIs (56.4%), while 0.5% did not prescribe any medications (Figure 3). The most frequently chosen first-line medication for GAD were SSRIs (79.2%), benzodiazepine anxiolytics (11.8%), and SNRIs (3.5%). The main reasons for SSRIs as the first choice for GAD (N=343) were “because they are highly effective” (61.5%), “because I am familiar with its usage” (54.2%), and “because they are recommended in foreign guidelines” (40.8%).

Among physicians providing drug therapy (N=431), the most common first-line medication patterns were antidepressant monotherapy (54.3%), combination of antidepressants and anxiolytics (34.1%), and anxiolytic monotherapy (8.4%). Physicians having patients diagnosed with GAD (N=433) reported using supportive psychotherapy (77.8%), CBT (57.5%), mindfulness cognitive therapy (18.5%), and exercise therapy (16.6%), with only 3.2% not implementing a non-drug therapy.

## Current Awareness and the Need for Awareness of GAD

On the GAD awareness survey question, only 1 physician “did not know about it at all”. Of the 508 physicians with some GAD awareness, 95.5% of physicians reported that they could visualize a patient with GAD (“very well” [53.3%]; “relatively well” [42.1%]), and 91.3% of physicians reported patients with GAD exist in Japan and actually seeing them.



**Figure 3** Overall and first-line drug classes prescribed for GAD based on responses of physicians having patients with GAD diagnosis (N=433).

**Abbreviations:** NaSSA, Noradrenaline and specific serotonergic antidepressants; SNRI, Serotonin and norepinephrine reuptake inhibitors; S-RIM, Serotonin Reuptake Inhibitor and Modulator; SSRI, Selective serotonin reuptake inhibitors.

Half (53.2%) of the participants thought that psychiatric specialists in Japan were “sufficiently” (11.2%) or “somewhat” (42.0%) aware of GAD, and 54.2% of participants thought it was “somewhat necessary” or “necessary” to make them aware of GAD, while only 13.9% thought it was “somewhat unnecessary” or “unnecessary”.

In terms of effective methods for educating psychiatrists and psychosomatic medicine physicians about GAD, the most common responses were “development of Japanese guidelines” (71.0%), “symposiums at academic conference” (50.4%), “provision of information by pharmaceutical companies” (42.4%), “development of drugs indicated for GAD” (42.0%), and “training sessions and workshops” (41.7%).

Most physicians (68.2%) reported that GAD was “not at all” or “not so well” recognized among the general public in Japan, and 49.9% of physicians answered it was “somewhat necessary” or “necessary” to make them aware of GAD, while only 14.9% answered “somewhat unnecessary” or “unnecessary”. Most common responses for effective ways to create GAD awareness among the Japanese public were websites (49.6%), television commercials (43.7%), public lectures (42.9%), video distribution such as YouTube (41.7%), newspaper/magazine advertisements (41.3%), and web/internet advertisements (39.8%).

## Unmet Needs

Most (85%) participants thought it was “meaningful” (66.3%) and “somewhat meaningful” (18.7%) to treat GAD. Of the 433 physicians having patients diagnosed with GAD, 44.6% responded that “following the DSM-5 criteria would result in overdiagnosis”, though most participants (46.4%) reported “no particular difficulty” in diagnosing GAD. An additional 8.3% and 5.1% of participants indicated that they were “unable to diagnose GAD” and “unable to characterize the patient profile”, respectively. Of the above 433 physicians, 79.9% faced some difficulty in treating GAD; the most common responses were “lack of drug efficacy” (44.3%), “lack of therapeutic agents indicated for GAD” (24.2%), “patients lack support from people around the patient” (21.0%), “patients are less aware of their illness” (18.9%), and “patients have less knowledge about GAD” (18.7%).

## Discussion

This web-based, cross-sectional survey of 509 representative Japanese psychiatric specialists showed that despite 96.9% of participants reporting being aware of GAD, only 53.2% of participants felt that their peers (other psychiatric specialists) were sufficiently or somewhat aware of GAD. The results indicated that despite 81.9% of participants

being aware of the DSM-5 criteria for GAD, less than 50% used any operational diagnostic approach. Although most physicians were familiar with GAD and reported that they already had GAD patients in their practice, a median of 5 outpatients/month/physician could receive an additional diagnosis of GAD or a change in diagnosis from other diseases to GAD when the diagnosis was reviewed according to the DSM-5 diagnostic criteria. While overdiagnosis by the DSM-5 is feared, it is suggested that a certain number of patients may be diagnosed with GAD if the diagnosis is reviewed by operational diagnostic criteria such as the DSM-5.

These results showed that GAD was highly comorbid with and inappropriately diagnosed as depression, social anxiety disorder, and panic disorder. This is in line with prior reports, suggesting that GAD is diagnosed and treated only for comorbid disorders in a certain number of patients in the present study.<sup>2,3</sup> In this survey the most common complaint of patients with GAD was “anxiety/worry”, the core symptom of GAD. However, this symptom is not disease-specific and substantially overlaps with other anxiety and mood disorders.<sup>6</sup> This awareness may aid in the diagnosis of other coexisting disorders among patients with GAD and also missing specific diagnoses which may be mislabeled as GAD (as a “wastebasket” term). Thus, awareness would improve diagnosis and management of psychiatric conditions in clinical practice.

While choosing GAD medication paradigm, physicians referred to the non-Japanese guidelines in addition to the efficacy results of and their previous experience with the drugs. In light of varying treatment guidelines by country, there may be a discrepancy in the way patients with GAD are treated.<sup>7,8</sup> Once Japanese guidelines with therapeutic recommendations for GAD become available, the prescription trends may change to reflect a more country-specific approach to the management of patients with GAD. While the Canadian/German guidelines recommend SSRIs/SNRIs as common first-line treatment, our results in Japan largely reflected this pattern.<sup>7,8</sup> While monotherapy is preferred before prescribing combinations both in Canada and Germany, our results suggested that 54.3% participants prescribed antidepressant monotherapy as first line, which is in line with guidelines in other countries. The findings on the first-line treatment preference are also aligned with the results of similarly conducted surveys among psychiatrists from Europe and Australia.<sup>9,10</sup>

Many physicians use pharmacotherapy as well as non-pharmacotherapy, such as psychotherapy, for treating GAD. Psychotherapy is used in the form of CBT, mindfulness, and psychodynamic psychotherapy. Most physicians use supportive psychotherapy as a non-pharmacological treatment. In line with Japanese real-world practice, supportive psychotherapy is often preferred to CBT or systematized psychotherapy due to the limited number of facilities available for CBT and the increased cost of medical care. Previous studies have assessed clinical outcomes of psychotherapy in the management of GAD, and other studies have shown clinical benefits related to the implementation of psychotherapy; some findings suggest that the long-term success of psychotherapy may be impeded by high dropout rates.<sup>11–14</sup> However, because GAD is a multidimensional disease, a personalized treatment approach that includes not only pharmacotherapy but also non-pharmacological therapies such as psychotherapy is likely to improve therapeutic outcomes.

Although psychiatric specialists themselves had high disease awareness, they felt that disease awareness among their own clinical specialty was low, and more than half felt a need to increase awareness about diagnosis and management of GAD. The development of Japanese national guidelines is most needed to enhance awareness among specialists. The development and dissemination of Japanese national guidelines may make the appropriate diagnosis of GAD in Japan and contribute towards the timely long-term treatment of patients with GAD who may be receiving inappropriate drug therapy due to an incorrect diagnosis. Compared to the depression rating scales, the anxiety rating scale was less commonly used, potentially leading to the underdiagnosis of anxiety disorders. Promoting the use of anxiety rating scales, including self-administered scales such as the GAD-7,<sup>15,16</sup> which is also valuable as a screening tool, may be an effective way to uncover potential GAD patients.

## Strengths and Limitations

As per our selection criteria, the present study included physicians treating sufficient outpatients to adequately capture real-world physician experience and challenges among those expected to have a good understanding of GAD in their clinical practice, providing in-depth understanding of the gaps in the diagnosis and treatment of GAD in Japan.



Our study has several limitations typical of survey design including selection bias as views are reflective of only those physicians in Japan familiar with the internet and computers, interested in responding to the survey, and participants during the survey period. The survey was closed as the target number of 500 participants was achieved. We believe the survey sample of 500 psychiatrist and psychosomatic medicine physicians specializing in treating GAD was sufficient for the current exploratory study.

Diagnoses and medications were self-reported by participants, and are therefore, subject to recall bias. Nevertheless, the survey was designed to capture responses over the previous month to minimize recall bias. Our finding of gaps in the diagnosis and management of GAD among psychiatrists and psychosomatic medicine physicians are alarming and call for an action. This survey was conducted with specialists (psychiatrists and psychosomatic medicine physicians); however, the gaps in clinical practice may be wider as diagnosed and undiagnosed GAD patients may be managed by general practitioners or physicians with different clinical specialties in the real-world scenario with lower levels of awareness regarding GAD. Since physicians are aware that they are being evaluated when responding to survey questions on GAD clinical practice, social desirability bias may play a role and their responses may differ from real-life responses to patients. As the survey comprised Japanese physicians, caution should be exercised when generalizing the results to physicians in other countries with differing healthcare systems.

Future real-world registry- or claims database-based observational studies are needed to develop a deeper understanding of prescription patterns and GAD management in clinical practice.

## Conclusion

Our study revealed the current clinical practice and perception of Japanese psychiatric specialists on disease awareness and unmet needs in GAD management. The survey results indicate a requirement for Japanese clinical guidelines on GAD diagnosis and treatment along with the need for creating GAD awareness among physicians and the general public in Japan.

## Abbreviations

CBT, cognitive behavioral therapy; DSM-5, Diagnostic and Statistical Manual of Mental Disorders, fifth edition; GAD, generalized anxiety disorder; SNRI, serotonin and norepinephrine reuptake inhibitor; SSRI, selective serotonin reuptake inhibitor; URL, uniform resource locator.

## Data Sharing Statement

The data that support the findings of this study are available from Viatris Inc. but restrictions apply to the availability of these data, and so are not publicly available. Data are however available from the authors upon reasonable request and with permission of Viatris Inc.

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## Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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## Disclosure

Keisuke Nomoto, Satoshi Matsuyama, and Shingo Higa are full-time employees of Viatrix Pharmaceuticals Japan Inc. Osamu Takashio reported honoraria from lectures from Viatrix Pharmaceuticals Japan Inc., Meiji Seika Pharma, Takeda Pharmaceutical, Sumitomo Pharma, and Otsuka Pharmaceutical. Tempei Otsubo has received lecture fees from Viatrix Pharmaceuticals Japan Inc., Takeda Pharmaceutical, Otsuka Pharmaceutical, Sumitomo Pharma, Yoshitomi Yakuhin, Mochida, Meiji Seika Pharma, Kyowa Pharmaceutical, Lundbeck Japan, and IQVIA.

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