

Impact of attributes of people with mental disorders on barriers to access to care: a web-based survey

Masaki Tamura

Chiba University: Chiba Daigaku <https://orcid.org/0000-0002-8360-3047>

Fumiyo Oshima (✉ c21ujsw35117c@faculty.gs.chiba-u.jp)

Minako Hongo

Chiba University: Chiba Daigaku

Emiko Oshita

Chiba University: Chiba Daigaku

Eiji Shimizu

Chiba University: Chiba Daigaku

Research

Keywords: Barriers to access to care, Treatment stigma, Patient's attributes, Web-based survey

Posted Date: July 22nd, 2022

DOI: <https://doi.org/10.21203/rs.3.rs-1853509/v1>

License:   This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Abstract

Background: Despite the availability of evidence-based treatments and support measures for mental disorders, very few people with mental disorders seek treatment and use mental health services. Previous studies have shown that barriers to access to care, such as the treatment stigma experienced by patients, practical issues such as financial deprivation, and problems related to patients' attitudes toward receiving care, cause delay in using medical services. However, there is insufficient knowledge regarding patient attributes which increases the likelihood of people with mental disorders to experience substantial barriers to access to care.

This study aimed to investigate how patients' attributes such as gender, age, history of hospitalisation for treatment of mental disorder, and psychiatric diagnosis affect barriers to access to care for people with mental disorders.

Methods: This study is a secondary analysis of a web-based survey conducted by Hongo et al. on standardising the Barriers to Access to Care Evaluation scale version3-Japanese version (BACEv3-J). Hongo et al. selected 268 adults diagnosed with mental disorders who had received mental health services within the past 12 months. Participants responded online using the BACEv3-J. Then, we quantitatively examined the effects of their attributes on the total BACEv3-J score and subscale (treatment stigma and non-stigma) scores.

Results: Compared with men, women experienced more substantial barriers to access to care, particularly non-stigma-related barriers. Age and treatment stigma had a significant negative correlation, whereas age and non-stigma-related barriers had no significant correlation. History of hospitalisation for treatment of mental disorders and the difference in psychiatric diagnosis did not affect barriers to access to care.

Conclusion: This study showed that patients' attributes such as gender and age affect barriers to access to care. Further, to encourage people with mental disorders to receive care, their characteristics need to be considered during these interventions.

Background

Mental disorders severely impair patients' social functioning and significantly influence their social environment. A 2018 study found that if mental disorders are not addressed, the global economy could lose up to 16 trillion US dollars between 2010 and 2030 [1].

Despite the availability of evidence-based treatments and support measures for mental disorders, very few people with mental disorders seek treatment and use mental health services, posing a serious problem. A previous study conducted in Japan showed that only about 20% of people with mental disorders, including depression, utilise psychiatric institutions [2]. Another study reported that when a psychiatrist was recommended to cancer-bearing patients who exceeded the cut-off in screening for

depression, more than 70% of them refused to comply [3]. This suggests that barriers prevent people with mental disorders from receiving care.

Some studies have suggested that the most significant barrier is stigma [4, 5]. Stigma refers to negative attitudes towards characteristics that do not conform to culturally established norms [6]. Socially stigmatised people gradually internalise stigma and develop negative beliefs about themselves, such as 'I am an unacceptable and embarrassing person to the society' [7]. Research shows that people who reinforce these negative beliefs (self-stigma) tend to stop taking action to seek help [8]. People with mental disorders also avoid visiting medical institutions or using welfare services because of increased self-stigma, such as 'receiving psychiatric treatment is socially undesirable'. Vogel et al. termed these negative beliefs as 'treatment stigma', which prevents people with mental disorders from receiving care [9].

In addition to stigma-related issues, practical issues such as financial deprivation, and patients' attitudinal issues such as preference for alternative therapies over medical interventions, also prevent access to care.

Clement et al. attempted to create a scale that comprehensively assesses barriers owing to treatment stigma (stigma-related barriers) and other factors (non-stigma-related barriers). They created the Barriers to Access to Care Evaluation scale version3 (BACEv3), a 30-item self-administered scale that assesses both stigma-related- and non-stigma-related barriers [10]. BACEv3 has been standardised in many countries such as India, Italy, Colombia, and China. In Japan, our research group standardised a Japanese version in 2021 [11].

To remove barriers to care-seeking, it is essential to examine which attributes of people with mental disorders reinforce these barriers. However, to the best of our knowledge, no study in Japan has investigated this using BACEv3. We decided to use the Japanese version of BACEv3 to examine the impact of the attributes of Japanese people with mental disorders on barriers to care-seeking.

Methods

Participants and procedures

This study was based on secondary use of data collected by Hongo et al. to standardise the Japanese version of BACEv3 [11]. The participants were adult men and women aged between 20 and 65 years, had previously been diagnosed with mental disorders, and had received treatment at a mental health service or psychiatric institution within the last 12 months. Participants were also required to have access to the Internet, as the survey was to be completed online. Participants were excluded if they had been diagnosed with intellectual disability, dementia, positive symptoms of schizophrenia, and imminent risk of suicide, or if they were deemed unfit for participation by a researcher. Hongo et al. selected participants through a private investigation company. Based on prior information provided, the investigation company selected those who met the inclusion criteria and sent an email to them. Those who wished to participate

accessed the research website and answered the online questionnaire. Selection and data collection was conducted from late November to mid-December 2018.

Materials

Demographic Data

Demographic data collected from the participants included gender, current age, whether they had been hospitalised for treatment of mental disorders, primary psychiatric diagnosis, and length of time since receiving mental health services or psychiatric treatment for the first time. Thereafter, participants were asked to complete the survey questionnaire.

Barriers to Access to Care Evaluation scale version3-Japanese version

The Barriers to Access to Care Evaluation scale version3-Japanese version (BACEv3-J) is a Japanese translation and standardisation of the BACEv3 by Hongo et al. The original version of the BACEv3 is a self-administered scale comprising 30 items about barriers to access to care. Respondents answer each item on a 3-point Likert scale from 0 (not at all) to 3 (a lot). The overall score is the average of the scores on each item. Higher scores indicate a more robust barrier to care-seeking. BACEv3 consists of a treatment stigma subscale (e.g., 'Concern that I might be seen as weak for having a mental health problem') that assesses stigma-related barriers, and a non-stigma subscale (e.g., 'Being unsure where to go to get professional care') that assesses non-stigma-related barriers.

Hongo et al. deleted 11 items in the Japanese adaptation. The factor structure of the BACEv3-J is the same as that in the original version. Hongo et al. instructed 220 participants to complete the BACEv3-J again two weeks after the initial assessment to check test-retest reliability. Still, only data from the first assessment were used in this study. The Cronbach's alpha for each subscale in this study was 0.90 for the treatment stigma subscale and 0.83 for the non-stigma subscale, indicating good internal consistency.

Statistical analysis

This is a cross-sectional observational study. It examined the effects of gender, age, primary psychiatric diagnosis, and history of hospitalisation for treatment of mental disorders on barriers to access to care. First, to examine the effects of gender and the history of hospitalisation, participants were divided into two groups: male and female, with or without a history of hospitalisation. Two-sample t-tests were used to compare the total BACEv3-J and the subscales scores (treatment stigma subscale and non-stigma subscale) between the two groups.

We used two methods to examine the effect of age. First, we used correlation analysis to test the correlation between age and the BACEv3-J total and subscale scores. We divided participants into two

groups by median age (44 years) and compared each score between the two groups of younger (< 44 years) and older (\geq 44 years) participants. Two-sample t-tests were used for comparison. Second, to test the effect of primary psychiatric diagnoses, we categorised participants into five groups: psychosis (primary diagnosis: schizophrenia and schizoaffective disorder), mood disorders (primary diagnosis: major depression and bipolar disorder), anxiety disorders (primary diagnosis: social anxiety disorder, panic disorder, obsessive-compulsive disorder, and generalised anxiety disorder), personality disorders (primary diagnosis: borderline personality disorder and other personality disorders), and developmental disorders (primary diagnosis: autism spectrum disorder, attention deficit hyperactivity disorder, and other developmental disorders). The BACEv3-J total and subscale scores of each group were compared using a one-way ANOVA. Bonferroni method was used as a post-hoc test when the differences were significant.

The kurtosis and skewness of all variables used in this study were between - 2 and 2 and were normally distributed [12–14]. In addition, Levene test results showed that the variances of all variables were equal. No outliers could affect the statistical analysis. In addition, there were no missing values.

The significance level for each test was 5% two-sided, and 95% confidence intervals were calculated. The sample size required to perform a one-way ANOVA (effect size 0.25, power 0.80), as calculated by Gpower, was 200. All statistical analyses of the study were conducted using SPSS Statistics Version 28.0.

Results

Participants

Participants included 268 adults, of which 130 (48.5%) were men and 138 (51.5%) women. The mean age of the participants was 43.7 years with a standard deviation (SD) of 11.3 years. The mean time since the participants first received treatment was 12.2 years (SD 8.4 years). Other demographic data of the participants are presented in Table 1.

Table 1
Participant sociodemographic and clinical characteristics

Variable		N	%
Gender (n = 268)	Male	130	48.5
	Female	138	51.5
Educational background (n = 268)	Higher education	122	45.5
	High school	101	37.7
	Junior high school	19	7.1
	Other	26	9.7
Employment status (n = 268)	Work full-time	72	26.9
	Work part-time	51	19.0
	Housewife/househusband	41	15.3
	Student	3	1.1
	Not working	92	34.3
	Other	9	3.4
Relation status (n = 268)	Single	153	57.1
	Married	83	31.0
	Divorced, separated, or widowed	32	11.9
Any children (n = 268)	Yes	77	28.7
	No	191	71.3
Primary diagnosis (n = 268)	Psychosis	60	22.4
	Mood disorders	79	29.5
	Anxiety disorders	78	29.1
	Personality disorders	6	2.2
	Developmental disorders	45	16.8
Ever admitted to hospital for psychiatric treatment (n = 268)	Yes	83	31.0
	No	185	69.0

The mean and SD of the BACEv3-J total score for all participants was 1.18 (SD 0.56). The mean and SD of the treatment stigma subscale score was 1.31 (SD 0.73) and that of the non-stigma subscale score was 1.10 (SD 0.54).

Gender and barriers to access to care

The mean and SD of the BACEv3-J total score for men (n = 130) was 1.11 (SD 0.56); the same for the treatment stigma and the non-stigma subscales were 0.52 (SD 0.31) and 0.59 (SD 0.32), respectively. The mean and SD of the BACEv3-J total score for women (n = 138) was 1.25 (SD 0.54); the same for the treatment stigma and non-stigma subscales were 0.58 (SD 0.31) and 0.67 (SD 0.31), respectively. The BACEv3-J total and non-stigma subscale scores between men and women differed significantly; however, no significant difference in the treatment stigma subscale score was noted (Table 2.1).

Table 2.1
Differences between male versus female on the BACEv3-J total and subscale scores

	t-value	df	p	Mean difference	SE difference	95% confidence interval		
						Lower	Upper	Cohen's d
Total	-2.08	266	0.039	-0.140	0.067	-0.273	-0.007	0.55
Treatment stigma	-1.69	266	0.092	-0.063	0.037	-0.137	0.011	0.31
Non-stigma	-1.90	266	0.047	-0.077	0.038	-0.152	-0.001	0.31
df: Degrees of freedom, SE: Standard error								

History of hospitalisation and barriers to access to care

The mean and SD of the BACEv3-J total score for the group with hospitalisation history (n = 83) was 1.17 (SD 0.58). The mean and standard deviation of the treatment stigma subscale was 0.52 (SD 0.32), and that of the non-stigma subscale was 0.65 (SD 0.33). In contrast, the mean and SD of the BACEv3-J total score for the group without history of hospitalisation (n = 185) was 1.19 (SD 0.55). The mean and SD of the treatment stigma and non-stigma subscales were 0.56 (SD 0.30) and 0.63 (SD 0.31), respectively. The BACEv3-J total and both subscale scores did not differ significantly between the two groups (Table 2.2).

Table 2.2

Differences in BACEv3-J total and subscale scores with versus without a history of hospitalization

						95% confidence interval		
	t-value	df	p	Mean difference	SE difference	Lower	Upper	Cohen's d
Total	-0.30	266	0.764	-0.022	0.073	-0.167	0.123	0.56
Treatment stigma	-0.99	266	0.324	-0.040	0.041	-0.121	0.040	0.31
Non-stigma	0.44	266	0.663	0.018	0.042	-0.064	0.100	0.32
df: Degrees of freedom, SE: Standard error								

Age and barriers to access to care

The mean and SD of the BACEv3-J total score for the younger age group (n = 127) was 1.22 (SD 0.55). The mean and SD of the treatment stigma subscale was 0.57 (SD 0.31), and that of the non-stigma subscale was 0.66 (SD 0.31). The mean and SD of the BACEv3-J total score for the older age group (n = 141) was 1.15 (SD 0.56). The mean and SD of the treatment stigma and non-stigma subscales were 0.54 (SD 0.30) and 0.61 (SD 0.32), respectively. A two-sample t-test was applied, and the results showed no significant differences in the total and subscale scores between the younger and older age groups (Table 2.3).

Table 2.3

Differences between younger age group versus older age group on BACEv3-J total and subscale scores

						95% confidence interval		
	t-value	df	p	Mean difference	SE difference	Lower	Upper	Cohen's d
Total	1.15	266	0.250	0.078	0.068	-0.055	0.212	0.55
Treatment stigma	0.83	266	0.409	0.031	0.038	-0.043	0.106	0.31
Non-stigma	1.22	266	0.224	0.047	0.039	-0.029	0.123	0.32
df: Degrees of freedom, SE: Standard error								

However, the correlation analysis showed significant negative correlations between age and the BACEv3-J total and treatment stigma subscale scores. There was no significant correlation between age and non-stigma subscale scores (Table 2.4).

Table 2.4
Correlation between variables included in the study

	Total	Treatment stigma	Non-stigma
Age	-0.15*	-0.15*	-0.12
Total		0.89**	0.89**
Treatment Stigma			0.58**
**p < 0.01, *p < 0.05, two-tailed.			

Psychiatric diagnoses and barriers to access to care

The number of samples in each group (psychosis, mood disorders, anxiety disorders, personality disorders, and developmental disorders), the mean and SD of BACEv3-J total score, and each subscale scores are shown in Table 2.5. A one-way ANOVA revealed no significant differences in the BACEv3-J total and scores on each subscale between the groups (Table 2.6).

Table 2.5
Mean and standard deviation of the BACEv3-J total and subscale scores of each psychiatric diagnosis

	Psychosis (N = 60)	Mood disorders (N = 79)	Anxiety disorders (N = 78)	Personality disorders (N = 6)	Developmental disorders (N = 45)
Mean(SD)					
Total	1.13(0.54)	1.29(0.51)	1.13(0.59)	1.25(0.23)	1.15(0.62)
Treatment stigma	0.55(0.31)	0.60(0.27)	0.52(0.33)	0.48(0.25)	0.51(0.33)
Non-stigma	0.58(0.30)	0.69(0.30)	0.61(0.32)	0.77(0.33)	0.63(0.32)
SD: Standard deviation					

Table 2.6
Differences in the BACEv3-J total and subscales scores by psychiatric diagnosis

	Type III sum of squares	df	Mean square	F	P
Total	1.401	4	0.350	1.14	0.339
Treatment stigma	0.378	4	0.095	0.99	0.411
Non-stigma	0.579	4	0.145	1.46	0.214
df: degrees of freedom					

Discussion

This study quantitatively examined the impact that the attributes held by people with mental disorders have on barriers to access to care. Our findings showed that women seem to experience more substantial barriers to care-seeking for their mental health problems than men do, particularly non-stigma-related barriers. Further, it appears that younger patients had experienced more significant treatment stigma. However, no association was found between age and non-stigma-related barriers. In addition, history of hospitalisation for the treatment of mental disorders and primary psychiatric diagnosis did not influence barriers to care-seeking.

Several studies have investigated the impact of gender differences on psychological help-seeking attitudes, suggesting that, compared with men, women's attitudes towards help-seeking are more positive [15–17]. This study's results were not consistent with those of previous studies.

Conversely, several studies conducted in Japan showed that, compared to women, men's attitude towards help-seeking is more positive. For example, in an interview study conducted by Kido et al. involving 1,359 Japanese participants, men were less opposed to treatment and more likely to consult professionals about mental health problems compared with women [18]. A study by Sakamoto et al. also showed that compared with older women, older men were more likely to consult specialists for problems regarding suicidal ideation [19]. Therefore, the influence of gender differences on barriers to care-seeking may differ between Japan and other countries.

One possible reason for this is the difference in the environment in which women survive. According to a study conducted in Japan by Tsukazaki et al., women who lived with three or more other people or were working (including full-time homemakers) had lower rates of receiving medical treatment for mental disorders. The rates of receiving medical treatment were also lower among working men. However, there was no relationship between the number of people living together and the rates of receiving care [20]. This finding suggests that the burden of housework, childcare, and nursing care on Japanese women may inhibit their help-seeking behaviours. According to cross-country data compiled by the Organisation for Economic Co-operation and Development for 2020, Japanese men and women spent 41 and 224 minutes a day, respectively, on housework and childcare (unpaid work), indicating a difference of 5.5

times. This difference in minutes is higher than that in the USA (1.6 times) and the UK (1.8 times) [21]. The considerable barriers to care-seeking that Japanese women face may be attributed to the difficulty in finding time to access care. Further, gender differences were observed only in the case of non-stigma-related barriers, thereby supporting this speculation.

Selection bias is another possible reason for the inconsistency between the finding of this study and those in previous studies from other countries. This study included people with mental disorders who had used mental health services or visited a psychiatric institution within 12 months. Therefore, people with mental disorders who did not seek help and had not yet received treatment were not included in the study. The exclusion of men facing considerable barriers to care-seeking and had not yet received care may have led to the differences in the results. The impact of gender differences on barriers to care-seeking should be investigated in greater detail in the future.

The study also showed that, compared with younger participants, older participants had weaker treatment stigma. Previous studies have shown that older adults are less likely to receive psychological care, mainly because of stigma [22, 23]. However, recent studies suggest that, compared with younger people, older people may show a more positive attitude towards seeking help [24–26], which is consistent with the findings of this study. These findings suggest that the primary reason for older people not receiving psychological care may be non-stigma-related barriers, such as the lack of knowledge about treatment services and financial affordability, rather than stigma issues.

The reason for older people's treatment stigma being weaker than that of younger people remains unclear. Mackenzie et al. suggested that this may be because older people are less likely to endorse social roles that emphasise strength and independence or because their life experiences have shown them the value of seeking help [24].

This study also showed that a history of hospitalisation to treat mental disorders did not affect barriers to care-seeking, which indicates that the hospitalisation experience does not reinforce (but also does not reduce) barriers to access to care for patients with mental disorders. Still, previous research has shown that forced hospitalisation in psychiatric institutions can contribute to the stigma experienced by patients [27]. Therefore, although no significant differences were found in this study, forced admission of patients to hospitals should be avoided as far as possible. Further, treatment during hospitalisation should be performed to reduce patients' treatment stigma.

Finally, this study showed that differences in primary psychiatric diagnosis do not affect barriers to care-seeking. To the best of our knowledge, no study examines the impact of differences in psychiatric diagnoses on stigma-related barriers. Hirai et al. noted that help-seeking behaviour was more likely to be delayed in patients with depressive symptoms, high fatigue, and decreased activity [28]. Moreover, Mojtabai et al. found that patients with suicidal ideation were more likely to recognise the need to receive treatment [29]. In considering barriers to care-seeking for people with mental disorders, it may be necessary to consider clinical symptoms and the severity of psychiatric symptoms, rather than psychiatric diagnoses.

This study has several limitations. First, because this was a web-based survey study, we could not confirm participants' psychiatric diagnoses or severity of functional impairment. We should also note that the questionnaire was self-administered, and participants could not be assessed through structured interviews.

Second, this study may have selection bias. All participants in this study had received treatment for mental disorders within 12 months. Thus, patients who had never been treated for mental disorders were omitted. However, it was difficult to determine whether patients who had not yet received treatment had mental disorders, and this study could not resolve this limitation. In addition, because all participants in this study were willing and could complete the questionnaire via the Internet, there may be differences in the severity of mental symptoms and functional impairment compared with the overall population with mental disorders.

Third, this study did not assess the participants' economic status and could not evaluate the impact of their economic situations on stigma-related and non-stigma-related barriers. Previous studies on Filipinos and Chinese Americans have shown that tight economic conditions significantly prevent people with mental disorders from seeking treatment [30, 31]. Further investigation is needed to examine whether similar results can be obtained for Japan, where the medical insurance and social security systems are different.

Furthermore, this study's sample size was relatively small, albeit with sufficient power for statistical analysis. Replication studies with a larger sample size are needed to confirm this study's results.

Conclusion

This study revealed that the extent to which people with mental disorders experience barriers to care-seeking is related to their attributes, such as gender and age. Younger people may be more likely to have strong treatment stigma. Further, women may be more likely to experience barriers to care-seeking that are not related to stigma. The social issue regarding people with untreated mental disorders, or who delay to seek treatment, is important worldwide. It is necessary to intervene in the social environment to resolve issues such as difficulties owing to gender roles to remove barriers to care-seeking for patients with mental disorders.

Abbreviations

BACEv3-J: Barriers to Access to Care Evaluation scale version3-Japanese version

BACEv3: Barriers to Access to Care Evaluation scale version3

ANOVA: Analysis of variance

SD: Standard Deviation

Declarations

Ethics approval and consent to participate

The present study was approved by the Ethics Review Committee of the Graduate School of Medicine, Chiba University (No. M10319). This study made secondary use of data by Hongo et al., which was also approved by the committee (No.3199). Hongo et al. informed all participants of the research purpose and that their data could be used for secondary purposes by writing on the web and obtaining informed consent. All the methods were carried out in accordance to the guidelines of the university and the ethics committee.

Consent for publication

Not applicable.

Availability of data and materials

The datasets generated and analysed during the current study are available with the corresponding author.

Competing interests

The authors declare that they have no competing interests.

Funding

The present study was supported by JSPS KAKENHI Grant Number JP 18K03089 for Fumiyo Oshima. The study by Hongo et al., for which the present study made secondary use of data, was partially supported by the Mental Health Okamoto Memorial Foundation. The funding source had no role in the design of the study and collection, analysis, or interpretation of data or in writing the manuscript.

Author's contributions

MT and FO developed the study design. MH collected the data and provided critical advice on statistical analysis. MT performed the statistical analysis and wrote the manuscript as a whole. ES, FO and EO made essential revisions to the manuscript. All authors have read and approved the final manuscript.

Acknowledgements

We would like to thank Editage (www.editage.com) for English language editing.

References

1. Patel V, Saxena S, Lund C, Thornicroft G, Baingana F, Bolton P, et al. The Lancet Commission on global mental health and sustainable development. *Lancet*. 2018;392:1553–98. doi:10.1016/S0140-

6736(18)31612-X.

2. Kawakami N. Report of second World Mental Health Japan Survey. 2016. <http://wmhj2.jp/WMHJ2-2016R.pdf>. Accessed;16/04:2022.
3. Shimizu K, Akechi T, Okamura M, Oba A, Fujimori M, Akizuki N, et al. Usefulness of the nurse-assisted screening and psychiatric referral program. *Cancer*. 2005;103:1949–56. doi:10.1002/cncr.20992.
4. Clement S, Schauman O, Graham T, Maggioni F, Evans-Lacko S, Bezborodovs N, et al. What is the impact of mental health-related stigma on help-seeking? A systematic review of quantitative and qualitative studies. *Psychol Med*. 2015;45:11–27. doi:10.1017/S0033291714000129.
5. Gulliver A, Griffiths KM, Christensen H. Perceived barriers and facilitators to mental health help-seeking in young people: a systematic review. *BMC Psychiatry*. 2010;10:113. doi:10.1186/1471-244X-10-113.
6. Goffman E. *Stigma: notes on the management of spoiled identity*. Englewood Cliffs: Prentice-Hall; 1963.
7. Corrigan PW, Watson AC. The paradox of self-stigma and mental illness. *Clin Psychol Sci Pract*. 2002;9:35–53. doi:10.1093/clipsy.9.1.35.
8. Corrigan P. How stigma interferes with mental health care. *Am Psychol*. 2004;59:614–25. doi:10.1037/0003-066X.59.7.614.
9. Vogel DL, Wade NG, Haake S. Measuring the self-stigma associated with seeking psychological help. *J Couns Psychol*. 2006;53:325–37. doi:10.1037/0022-0167.53.3.325.
10. Clement S, Brohan E, Jeffery D, Henderson C, Hatch SL, Thornicroft G. Development and psychometric properties the Barriers to Access to Care Evaluation scale (BACE) related to people with mental ill health. *BMC Psychiatry*. 2012;12:36. doi:10.1186/1471-244X-12-36.
11. Hongo M, Oshima F, Nishinaka H, Seto M, Ohtani T, Shimizu E. Reliability and Validity of the Japanese Version of the Barriers to Access to Care Evaluation Scale Version 3 for People With Mental Disorders: an Online Survey Study. *Front Psychol* version 3. 2021;12:760184 doi:10.3389/fpsyg.2021.760184.
12. Byrne BM. *Structural Equation Modeling With AMOS*. 2013 doi:10.4324/9780203805534.
13. George D, Mallery P. *SPSS for Windows step by step: a simple guide and reference, 17.0 update*. 10th ed. Boston: Allyn & Bacon; 2010.
14. Hair JFBWCBBJARE. *Multivariate Data Anal*. 2019.
15. Judd F, Komiti A, Jackson H. How does being female assist help-seeking for mental health problems? *Aust N Z J Psychiatry*. 2008;42:24–9. doi:10.1080/00048670701732681.
16. Wang PS, Aguilar-Gaxiola S, Alonso J, Angermeyer MC, Borges G, Bromet EJ, et al. Use of mental health services for anxiety, mood, and substance disorders in 17 countries in the WHO world mental health surveys. *Lancet*. 2007;370:841–50. doi:10.1016/S0140-6736(07)61414-7.
17. Wendt D, Shafer K. Gender and attitudes about mental health help seeking: results from national data. *Health Social Work*. 2016;41:e20–8. doi:10.1093/hsw/hlv089.

18. Kido Y, Kawakami N, WHO World Mental Health Japan Survey Group. Sociodemographic determinants of attitudinal barriers in the use of mental health services in Japan: findings from the World Mental Health Japan survey 2002–2006. *Psychiatry Clin Neurosci*. 2013;67:101–9. doi:10.1111/pcn.12008.
19. Sakamoto S, Tanaka E, Neichi K, Ono Y. Where is help sought for depression or suicidal ideation in an elderly population living in a rural area of Japan? *Psychiatry Clin Neurosci*. 2004;58:522–30. doi:10.1111/j.1440-1819.2004.01295.x.
20. Tsukazaki E, Iwagami M, Sato M, Tamiya N. Factors related to mental health service utilization among individuals with mental distress in the general population. *Nihon Koshu Eisei Zasshi*. 2021;68:118–30. doi:10.11236/jph.20-055.
21. Organisation for Economic Co-operation and Development. Balancing paid work, unpaid work and leisure. <https://www.oecd.org/gender/balancing-paid-work-unpaid-work-and-leisure.htm>. Accessed 09/05/2022, 2022; 2020.
22. Graham N, Lindesay J, Katona C, Bertolote JM, Camus V, Copeland JR, et al. Reducing stigma and discrimination against older people with mental disorders: a technical consensus statement. *Int J Geriatr Psychiatry*. 2003;18:670–8. doi:10.1002/gps.876.
23. Katona C, Livingston G. Impact of screening old people with physical illness for depression? *Lancet*. 2000;356:91–2. doi:10.1016/S0140-6736(00)02466-1.
24. Mackenzie CS, Gekoski WL, Knox VJ. Age, gender, and the underutilization of mental health services: the influence of help-seeking attitudes. *Aging Ment Health*. 2006;10:574–82. doi:10.1080/13607860600641200.
25. Mackenzie CS, Heath PJ, Vogel DL, Chekay R. Age differences in public stigma, self-stigma, and attitudes toward seeking help: A moderated mediation model. *J Clin Psychol*. 2019;75:2259–72. doi:10.1002/jclp.22845.
26. Werner P, Aviv A, Barak Y. Self-stigma, self-esteem and age in persons with schizophrenia. *Int Psychogeriatr*. 2008;20:174–87. doi:10.1017/S1041610207005340.
27. Rüsç N, Müller M, Lay B, Corrigan PW, Zahn R, Schönenberger T, et al. Emotional reactions to involuntary psychiatric hospitalization and stigma-related stress among people with mental illness. *Eur Arch Psychiatry Clin Neurosci*. 2014;264:35–43. doi:10.1007/s00406-013-0412-5.
28. Hirai K, Tanimukai H, Nakamura N, Yamamura A, Sasaki J, Adachi H. Developing core-concepts and materials for mental health care literacy to facilitating adaptive illness behaviors. *JJ pshicho*. 2019;advpub doi;90:63–71: doi:10.4992/jjpsy.90.17239.
29. Mojtabai R, Olfson M, Mechanic D. Perceived need and help-seeking in adults With mood, anxiety, or substance use disorders. *Arch Gen Psychiatry*. 2002;59:77–84. doi:10.1001/archpsyc.59.1.77.
30. Kung WW. Cultural and practical barriers to seeking mental health treatment for Chinese Americans. *J Community Psychol*. 2004;32:27–43. doi:10.1002/jcop.10077.
31. Martinez AB, Co M, Lau J, Brown JSL. Filipino help-seeking for mental health problems and associated barriers and facilitators: a systematic review. *Soc Psychiatry Psychiatr Epidemiol*.

