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Development of the Counseling Center Assessment of Psychological Symptoms-Japanese version: Pilot study

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Abstract

There is currently no reliable and valid multidimensional instrument for measuring psychological symptoms among Japanese university students. The purpose of this pilot study was to translate the Counseling Center Assessment of Psychological Symptoms-62 (CCAPS-62) into Japanese and evaluate its validity and reliability. Following robust translation procedures, the CCAPS-Japanese was created. In the validation study, 2,758 undergraduate students from 11 universities (mean age = 19.08 ± 1.85 years) completed the CCAPS-Japanese. The results of confirmatory factor analysis supported the theoretical eight-factor structure model of the CCAPS-Japanese with the exclusion of seven items. The decision to retain/remove items was made by evaluating factor loadings and model fit indices while considering cultural equivalence and structural validity. Using the finalized 55-item CCAPS-Japanese, further analyses demonstrated that the eight subscales had acceptable to good internal consistencies (α = .61–.89). Thus, the tool's validity and reliability were established. The CCAPS-Japanese may be appropriate for assessing the psychological concerns of Japanese university students.

KEYWORDS

mental health, psychological assessment, student counselling, translation, university students

1 | INTRODUCTION

There is a growing awareness among Japanese higher education institutions that psychological services are an important part of student support. Currently, there are 782 universities (86 national, 93 local, and 603 private) and 331 junior colleges (17 local and 314 private) in Japan. After taking college/university entrance examinations, approximately 58% of high school graduates enroll in colleges or universities (Ministry of Education, Culture, Sports, Science and Technology-Japan, 2018). However, the most recent report from 77 national colleges and universities shows that 2.7% of students took a leave of absence and 1.7% withdrew in 2015 (Japanese National University Council of Health Administration Facilities [JNUCHAF], 2015). Furthermore, 10.3% of students who took a leave of absence and 5.5% of those who withdrew reported that their primary reason was mental illness. Owing to the stigmatization of mental illness, campus counselling and university health centres play a central role in supporting students who struggle with psychological issues (Kimura, 2014; Yoshitake, 2018).

Student counselling and advising services in Japan, introduced in 1951 (Tanaka & Fukumori, 2004), are based on student personnel services in American higher education. Presently, most Japanese colleges and universities have a counselling centre, defined as having counselling rooms and appointed counselors who specialize in helping students with psychological, career, academic, and other developmental concerns (Suzuki, Sugioka, Horita, Oda, & Yamauchi, 2019; Yoshitake, 2018). In contrast to the United States, where it is the students' responsibility to seek support during post-secondary

education, Japanese universities are actively involved in mental health assessment and providing psychological care (Tanaka & Fukumori, 2004). The School Health and Safety Act requires educational institutions, except online institutions, to conduct an annual health checkup for all students (Takayama, 2010). On the basis of the results, school doctors provide health education/advice and referrals to specialists, if needed. Additionally, many universities provide mental health screening tests as part of annual health evaluations. At-risk students are subsequently contacted and encouraged to receive counselling services.

According to the JNUCHAF's most recent report, common concerns among university students (n = 165,436 from 42 national universities and colleges) include career, time management, relationship, and psychological, financial, academic, physical, and family issues (JNUCHAF, 2015). The selected itemized responses include lacking clear career goals (58.8%), struggling with procrastination (56.4%), fear about getting hurt in relationships (49.5%), feeling generally anxious (43%), financial problems (28.2%), dissatisfaction with school (27.4%), feeling down (14.6%), physical concerns (12.1%), irritability (8.8%), and issues with parents (7.4%). Similarly, common concerns among Japanese students who visit counselling centres include academic and career concerns (28.4%) and mental health and adjustment issues (53.1%; Suzuki et al., 2019). Among students who were identified as "at risk" by the annual or new-student mental health screening and came for follow-up appointments (n = 1,353 from 38 national universities), 38% (n = 512) were subsequently diagnosed with a psychological condition (JNUCHAF, 2015). The most prevalent conditions were anxiety disorders (5.7%), followed by depressive disorders (5.3%), developmental disorders (5.2%), adjustment disorders (4.1%), personality disorders (3.5%), eating disorders (1.8%), psychotic disorders (1.6%), bipolar disorder (1.1%), and somatic symptoms and related disorders (1.0%). Referral sources of the students who visited university counselling centres included self (53%), faculty members (15%), individuals contacted following the mental health screening (11%), other university staff (6%), family members (4%), physicians (3%), and friends (2%).

Despite the stigma towards seeking professional psychological help, the number of students who utilize university counselling services has been increasing, almost doubling from 3.0% in 1997 to 5.4% in 2018 (Suzuki et al., 2019). University counselling centres generally have difficulty meeting the increasing demand because of a lack of counselors and related resources (Suzuki et al., 2019; Yoshitake, 2018). Thus, there is a need for a psychometrically sound assessment tool to understand mental health needs among students and provide support services (Tanaka & Fukumori, 2004).

In Japan, the *University Personality Inventory* (UPI; Hirayama & JNUCHAF, 2011), originally developed by the JNUCHAF in 1966, has been widely used among university students. The original UPI, a 60-item self-report measure, was developed as a unidimensional instrument to assess college students' mental health problems. The current UPI manual (Hirayama & JNUCHAF, 2011) identifies four subscales: psychosomatic complaints, depression, interpersonal anxiety, and paranoia and ideas of reference. However, the UPI has two major problems. First, its validity has not been sufficiently established for Japanese university students. Second, students report a wider range of psychological concerns than those assessed by the UPI.

Key Practitioner Message

- The 55-item CCAPS-Japanese has acceptable to good structural validity and reliability.
- The instrument may be used in research to assess national and global trends in university students' mental health.
- Further studies are needed to establish the clinical use of the CCAPS-Japanese as a potential screening and assessment measure for psychological symptoms among Japanese university students.

Several reliable and validated scales available in Japanese, such as the Kessler 10 (Kessler et al., 2002), General Health Questionnaire (Goldberg & Williams, 1988), and Patient Health Questionnaire (Kroenke, Spitzer, & Williams, 2001), have also been used at colleges and universities. However, these measures were designed to assess general psychiatric patients and are not specifically intended for university students. Therefore, there is currently no reliable and valid measure to assess psychological concerns among Japanese university students.

1.1 | Counseling Center Assessment of Psychological Symptoms (CCAPS)

The Counseling Center Assessment of Psychological Symptoms (CCAPS) is a multidimensional measure designed to assess psychological issues among college students (Locke et al., 2011). Developed by the staff at the University of Michigan Counseling and Psychological Services, it has been managed by the Center for Collegiate Mental Health (CCMH) at the Pennsylvania State University Counseling and Psychological Services. The measure has been used by approximately 550 American university and college counselling centres (CCMH, 2019). Current CCAPS norms (2019) are based on 448,904 students seeking counselling services at institutions across the United States between 2016 and 2018.

The CCAPS-62 (Locke et al., 2011) can be used as an assessment tool at intake, ongoing, and termination appointments at college counselling centres. Further, it can be used to assess mental health trends of general university student populations. The CCAPS-62 consists of eight subscales: depression, generalized anxiety, social anxiety, eating concerns, hostility, family distress, academic distress, and substance use. Locke et al. (2011) demonstrated the rigorous factor structure, good internal consistency, strong convergent validity, and adequate test–retest stability of the CCAPS-62. Several studies have

reported the utility of the CCAPS-62 for university students in the United States (McAleavey et al., 2012; Nordberg, Castonguay, McAleavey, Locke, & Hayes, 2016). According to MacFarlane, Henry, Nash, Kissel, and Bush's (2015) empirical study, the CCAPS-62 was more informative when forming initial diagnostic impressions than the Outcome Questionnaire-45 (Lambert et al., 1996) and College Adjustment Scale (Anton & Reed, 1991).

As the CCAPS-62 has been translated into different languages, including Chinese, Korean, Spanish, and Thai, two cross-cultural validation studies have been documented. Broglia, Millings, and Barkham (2017) demonstrated the CCAPS' utility for the UK's university student population. Ratanasiripong et al.'s (2015) Thai version of the CCAPS, using a 41-item six-factor model, was reliable and valid. Developing a Japanese version of the CCAPS-62 will enable the examination of its potential as a multidimensional assessment instrument of psychological concerns of university students in Japan. The number of Japanese students studying abroad increases annually, with American institutions being the most common destinations (N = 19, 527; Ministry of Education, Culture, Sports, Science and Technology-Japan, 2019). Answering the CCAPS in their native language will lead to more accurate evaluations of their mental state. Such an instrument would allow researchers to monitor both national (i.e., comparisons by institutions) and global (i.e., cross-cultural comparisons) trends of university students' mental health.

The aims of this study, thus, included developing the CCAPS-Japanese, which would be applicable for standard use in Japanese students and comparisons between the United States and Japan, and examining its factor structure and reliability using a national sample of university students.

2 | METHODS

2.1 | Translation process

The CCAPS-62 was translated and back translated with the CCMH's permission and following its policy. The CCMH research team was consulted to clarify the conceptual basis of the CCAPS-62's items and constructs. During forward translation, two bilingual scholars, a clinical psychologist and a psychiatrist, independently translated the CCAPS-62 into Japanese. The translation team included three professionals: a bilingual physician residing in Japan, a bilingual clinical psychologist/researcher who has resided in the United States for over 20 years, and a clinical psychologist in Japan. All five scholars hold doctoral degrees. The team discussed and resolved any discrepancies between these two Japanese translations and issues that arose during the process. Subsequently, a native English translator with no previous knowledge of the instrument translated the Japanese CCAPS-62 back into English. The translation team compared the back translation against the original CCAPS and consulted the CCMH research team for accuracy. As recommended by cross-cultural researchers (Brislin, 1970; Ratanasiripong et al., 2015; Wild et al., 2005), conceptual equivalence, instead of literal translation, was emphasized, and consensus was obtained among the members of the translation team for problematic items. Before finalizing the translated CCAPS, pretesting and cognitive interviewing (Castillo-Díaz & Padilla, 2013; Willis, 2005), in which a small group of college students completed the translated CCAPS, were conducted to address ambiguous items. Thus, the final CCAPS-Japanese was created and used for the validation study.

2.2 | Participants

Participants were recruited from 11 Japanese universities: three national universities (including one women's college) and eight private universities (including one women's college, one junior college, and one women's junior college). An in-class survey was distributed to undergraduates during the 2016 and 2017 academic years by faculty members unrelated to their academic evaluation, and the students were informed that this was unrelated to their academic evaluation. A total of 2,758 native Japanese-speaking undergraduates were recruited. The mean age was 19.08 years (SD = 1.85, range = 18–34). The sample consisted of 1,396 females (50.6%), 1,305 males (47.3%), and 57 of unknown gender (2.1%). In terms of academic year, there were 1,186 (43.0%) first years, 660 (23.9%) sophomores, 458 (16.6%) juniors, 343 (12.4%) seniors, and 111 (4.0%) unknown.

2.3 | Measures

The CCAPS-62, assessing psychological symptoms over the prior 2 weeks, consists of 62 items rated on a 5-point Likert scale rated from 0 (*not at all like me*) to 4 (*extremely like me*) and the eight-factor-derived subscales: depression, generalized anxiety, social anxiety, eating concerns, hostility, family distress, academic distress, and substance use. Higher scores reflect higher levels of distress or symptoms. The CCAPS-Japanese consists of the original 62 items and takes approximately 8 min to complete. For each subscale, the mean score was used for evaluation.

2.4 | Statistical analysis

The data were analysed using SPSS and AMOS software Version 22.0 (IBM SPSS Inc., Tokyo, Japan). Confirmatory factor analysis (CFA) was conducted to assess the model's structural equivalence with the original eight factors. Following Hu and Bentler (1998), three goodness of fit indices were examined to evaluate the overall model fit: root mean square error of approximation (RMSEA), <.10 for acceptable fit and < .06 for good fit; comparative fit index (CFI), >.90 for acceptable fit and >.95 for good fit; and standardized root mean square residual (SRMR), <.10 for acceptable fit and <.08 for good fit. The chi-square test results are included under Section 4 only as a reference because of the test's sensitivity to sample size and other characteristics, often causing inflated Type II errors (Beauducel & Wittmann, 2005; Hu & Bentler, 1998). Following the CFA, the CCAPS-Japanese's internal consistency reliability was examined using Cronbach's α and corrected

item–total correlations (CITC) using Pearson's product–moment correlation coefficient (*r*).

2.5 | Ethics statement

The research project was approved by the Research Ethical Committee, Graduate School of Medicine, Gifu University, Japan on December 7, 2016 (Approval No. 28-320). All participants received detailed face-to-face explanations regarding the protocol before providing written informed consent. The participants were informed that their responses would remain confidential and anonymous.

3 | RESULTS

3.1 | Structural validity

CFA was conducted on the 62 items of the CCAPS-Japanese to assess the theoretical eight-factor model's validity. Given multivariate nonnormal distributions and item intercorrelations, oblique (promax) rotation was used. The regression constraints were fixed for standardized factor loadings to not exceed 1.0. The results yielded χ^2 (1,801) = 18,392.96; $p < .001$; minimum chi-square/*df* = 10.21; RMSEA = .059; CFI = .762; and SRMR = .075, indicating an inadequate model fit. While consulting fit indices, and considering cultural equivalence and structural validity, the following seven items with factor loadings <.40, which did not meet practical significance (Hair, Black, Babin, & Anderson, 2013), were eliminated: "I feel confident that I can succeed academically (学業には自信がある)," "I use drugs more than I should (薬に頼りすぎてしまう)," "I am enthusiastic about life (人生を楽しんで生きている), " "I purge to control my weight (体重をコントロールするために、食後、誘発的に吐いたり、下剤を使う)," "I am not able to concentrate as well as usual (いつものように集中することができない)," "I feel comfortable around others (他の人といると居心地がいい)," and "I like myself (自分のことが好きである)." The factor loadings of those items were.19, .36, .36, .25, .34, .18, and.27, respectively. CFA was conducted on the remaining 55 items to test the eight‐factor model. Results yielded χ^2 (1,220) = 7,979.55; $p < .001$; and minimum chi-square/*df* = 6.54. All three goodness of fit indices indicated an acceptable to good model fit: RMSEA = .046 with a 90% confidence interval [.045, .047], CFI = .908, and SRMR = .098. Thus, the 55-item CCAPS-Japanese with the eight-factor model was confirmed.

3.2 | Descriptive statistics

The means and standard deviations of the subscales are shown in Table 2. The eight subscales of the CCAPS-Japanese were consistent with the original CCAPS-62. As Item 24 was excluded, the substance use subscale was renamed "Alcohol Use" (飲酒), as it consists only of items referring to drinking.

Further analyses examined associations between demographic variables and subscale scores. Independent samples *t* tests were conducted to evaluate group differences by gender with $\alpha = .001$ (Table 1). The results with the corresponding effect sizes revealed that females scored significantly higher than males on depression with a small effect size, $t(2698) = 7.89$, $p < .001$, and $d = .30$; and eating concerns with a medium effect size, $t(2602) = 20.15$, $p < .001$, and $d = .77$.

3.3 | Internal consistency reliability

The subscales' Cronbach's α were good ($\alpha > .70$), except for academic distress, for which the α level was acceptable (>.61) given that it had fewer items (Hair et al., 2013). Cronbach's α and the CITC of the CCAPS-Japanese subscales ranged from acceptable to good: depression = .48–.69, generalized anxiety = .45–.60, social anxiety = .39–.61, eating concerns = .38–.71, family distress = .38–.63, academic distress = .35–.51, hostility = .53–.72, and alcohol use = .62–.76. The CITC for the eight subscales and Cronbach's α are shown

TABLE 1 Means and standard deviations for the subscales of the Counseling Center Assessment of Psychological Symptoms-Japanese: Independent sample *t*-test results by gender (*N* = 2,758)

CCAPS-Japanese subscale	Number of items	Total sample (*N* = 2,758)		Women (*n* = 1,396)		Men (*n* = 1,305)		*t*	Effect size *d*
		M	*SD*	*M*	*SD*	*M*	*SD*		
Depression 抑うつ	11	1.05	0.77	1.16	0.79	0.93	0.72	7.89***	0.30
Generalized anxiety 全般性不安	9	1.19	0.69	1.24	0.70	1.13	0.67	4.33***	0.17
Social anxiety 社会不安	6	2.01	0.85	2.08	0.83	1.93	0.85	4.92***	0.19
Eating concerns 食行動	8	1.33	0.78	1.59	0.81	1.03	0.63	20.15***	0.77
Family distress 家族に関する悩み	6	0.94	0.71	0.96	0.76	0.92	0.66	1.41	0.05
Academic distress 学業に関する悩み	3	1.56	0.83	1.60	0.83	1.51	0.82	3.07**	0.12
Hostility 敵意	7	0.85	0.75	0.90	0.74	0.80	0.76	3.38***	0.13
Alcohol use 飲酒	5	0.31	0.64	0.27	0.60	0.35	0.67	3.35***	0.13

Note. *d* = effect size using Cohen's *d* for comparisons by gender.

Abbreviation: CCAPS, Counseling Center Assessment of Psychological Symptoms.

$p < .01$.*$p < .001$.

TABLE 2 The Counseling Center Assessment of Psychological Symptoms-Japanese subscales and items with corresponding Cronbach's α and corrected item–total correlation in a sample of Japanese university students (N = 2,758)

Item number CCAPS-Japanese (CCAPS-62)	The CCAPS-Japanese subscale Item in Japanese	(α) CITC
	抑うつ/Depression	(.89)
8 (8)	自分が自分でない感じがする	.62
9 (9)	人と一緒にいても以前ほど楽しくない	.55
10 (10)	ひとりぼっちで孤独だと感じる	.67
12 (12)	現実感がない[a]	.58
19 (20)	自分には価値がないと感じる	.66
22 (23)	自分は無力だと感じる	.62
34 (37)	好ましくないことを考えてしまい、コントロールできない	.65
37 (40)	いつも悲しい	.68
43 (46)	死にたいと考えることがある[b]	.65
51 (58)	泣くことがよくある	.48
55 (62)	誰も自分のことを理解してくれないと感じる	.69
(28)	[人生を楽しんで生きている]	
(55)	[自分のことが好きである]	
	全般性不安/Generalized anxiety	(.81)
3 (3)	心配していることがたくさんある	.54
4 (4)	はっきりとした理由もないのに胸がドキドキする	.57
14 (14)	人前でパニック発作が起こるのではないか心配である	.48
16 (17)	(中々眠れない、夜中に目が覚めるなど) 睡眠に問題がある	.39
17 (18)	色々な考えが次々と頭に浮かんでくる	.45
25 (27)	恐怖やパニックに陥ることがある	.60
27 (30)	緊張する	.57
30 (33)	怯えたり驚いたりしやすい	.52
36 (39)	悪夢を見たり、フラッシュバックがある	.45
	社会不安/Social anxiety	(.78)
2 (2)	人前では内気である	.58
15 (16)	皆の前で話さなければならない時に不安になる	.55
32 (35)	友だちを作るのが得意である	.39
38 (41)	他人から嫌われていないかと心配である	.55
41 (44)	知らない人といると居心地が悪い	.49
44 (47)	人目を気にしすぎる	.61
(54)	[他人といる時、居心地がいい]	
	食行動/Eating concerns	(.82)
5 (5)	食べると自分をコントロールできないと感じる	.63
13 (13)	食べ物のことばかり考えてしまう	.57
18 (19)	自分の体型に満足している	.38
21 (22)	自分の体重に満足していない	.44
23 (25)	食べすぎてしまう	.71
28 (31)	食べはじめると止まらない	.68
31 (34)	頻繁にダイエットをしている	.50
54 (61)	食べる量を減らすほど、自己評価があがる	.47
(48)	[体重をコントロールするために、食後、誘発的に吐いたり、下剤を使う]	

(Continues)

TABLE 2 (Continued)

Item number CCAPS-Japanese (CCAPS-62)	The CCAPS-Japanese subscale Item in Japanese	(α) CITC
	家族に関する悩み/Family distress	(.74)
1 (1)	自分の家族のことを考えると、悲しくなったり怒りを感じたりする	.49
7 (7)	家族は自分のことを愛してくれていると思う	.40
11 (11)	家族のことでいら立つ	.63
20 (21)	自分の家族は幸せだと思う	.52
35 (38)	うちの家族には虐待があった	.38
39 (42)	もっと自分の家族が仲良くしていたら良いのにと思う	.50
	学業に関する悩み/Academic distress	(.61)
6 (6)	授業を楽しめている	.35
48 (53)	授業へのやる気を維持するのが難しい	.51
52 (59)	学業についていけない	.41
(15)	[学業には自信がある]	
(51)	[いつものように集中することができない]	
	敵意/Hostility	(.85)
29 (32)	怒りを抑えるのが難しい	.71
33 (36)	時々、何かを壊したい気持ちになる	.57
40 (43)	すぐにカッとなる	.72
42 (45)	イライラする	.71
47 (52)	自制心を失い、暴力を振るうのではないかと心配である[*]	.56
50 (57)	しばしば口論になる	.54
53 (60)	(暴力などで)他人を傷つけることを考える[c]	.53
	飲酒/Alcohol use	(.86)
24 (26)	頻繁に酒 (アルコール)を飲む	.73
26 (29)	酒 (アルコール)を飲むと後で何が起こったか思い出せない	.62
45 (49)	適量以上に酒 (アルコール)を飲んでしまう	.76
46 (50)	酔っぱらうことが好きである	.71
49 (56)	飲酒が原因で後悔したことがある	.65
(24)	[薬に頼りすぎてしまう]	

Note. α = Cronbach's alpha. [] = removed items in the CCAPS-Japanese.

Abbreviations: CCAPS, Counseling Center Assessment of Psychological Symptoms; CITC, corrected item–total correlation.

[a]Critical item.

[b]Suicidal ideation.

[c]Homicidal ideation.

in Table 2. Table 3 presents Pearson's *r*. The subscales were significantly correlated as expected.

4 | DISCUSSION

The study objectives were to translate the CCAPS-62 into Japanese and establish the psychometric properties of the translated version with Japanese university students. The main findings support the use of the CCAPS-Japanese, which has acceptable to good structural validity and reliability, to assess Japanese university students. This study may have implications for other cross-cultural researchers using the CCAPS-62, given that it has been translated into many languages and that future cross-cultural validation studies are likely. Development of the CCAPS-Japanese involved rigorous translation and back-translation procedures during which cultural and conceptual equivalence were emphasized. As the initial CFA results indicated a poor model fit, seven items with low factor loadings (<.40) were removed. The subsequent CFA results were significantly improved, showing an adequate to good fit with the theoretical eight-factor model.

The removed items with low factor loadings were likely heavily influenced by their unique sociocultural and linguistic context. First, response bias may work differently when administering a psychological assessment instrument cross culturally. Although it is desirable to

TABLE 3 Correlations among subscales of the CCAPS-Japanese in university students (N = 2,758)

Subscale	1	2	3	4	5	6	7
1. Depression	-						
2. Generalized anxiety	.77***	-					
3. Social anxiety	.57***	.55***	-				
4. Eating concerns	.39***	.37***	.26***	-			
5. Family distress	.48***	.43***	.28***	.23***	-		
6. Academic distress	.43***	.36***	.35***	.31***	.23***	-	
7. Hostility	.70***	.64***	.43***	.35***	.47***	.38***	-
8. Alcohol use	.25***	.24***	.01	.21***	.19***	.21***	.28***

***p < .001, for comparisons between correlations among subscale.

include reverse-scored items to reduce potential response bias, such as acquiescence bias (Paulhus, 1991), the validity and reliability of a scale are often attenuated by such items when a measure is developed and applied cross culturally (Wong, Rindfleisch, & Burroughs, 2003). In this study, four (15, 28, 54, and 55) out of the seven removed items were positively phrased. Research shows that Japanese individuals are less likely to report positive emotions on the Depression Scale (Iwata, Roberts, & Kawakami, 1995) and Aggression Questionnaire (Nakano, 2001). Others found that Japanese people are more likely to display a self-effacing tendency as compared with Americans when evaluating their own abilities (Yamagishi et al., 2012). Modesty is highly valued in Japan as a way of maintaining interpersonal harmony (the interdependent self-concept), as opposed to being independent and unique (the independent self-concept), which is often valued in the United States (Markus & Kitayama, 1991). Therefore, positively phrased, reverse-scored items may assess degrees of modesty or a self-effacing tendency, thus not accurately capturing the intended construct and possibly confounding the validity and reliability.

Second, owing to different drug regulations and cultural practices in Japan and the United States, items related to drug use other than alcohol are likely problematic. Item 24 of the CCAPS is the only item that assesses drug use other than alcohol. Although alcohol abuse is prevalent in Japan (Osaki et al., 2016), including among Japanese university students (Uemura, Jojima, Nagatani, Imaeda, & Suzuki, 2012; Yoshimoto et al., 2017), abuse of prescription and illicit drugs among Japanese university students is quite atypical. For example, using the *International Classification of Diseases*, *Tenth Revision*, the prevalence rates of alcohol dependence among Japanese males and females, respectively, were 1.9% and 0.2%, those of binge drinking were 12% and 2.2%, and those of episodic heavy drinking were 30.5% and 7.2% (Osaki et al., 2016). With regard to Japanese university students, 56.8% of males and 47.8% of females reported binge drinking during the prior year and 7.2% and 9.7%, respectively, reported excessive weekly drinking (Yoshimoto et al., 2017). Research examining illicit drug use in Japan indicates that 0.5% of university students reported having been invited to use illicit drugs, and 1% reported witnessing or knowing the illicit drug use of someone close to them (Fuse-Nagase, Saito, Hirohara, & Miyakawa, 2015). These rates are considerably higher in the United States, where 23.6% of college students reported illicit drug use, of whom 21.6% reported marijuana use (Substance Abuse and Mental Health Services Administration, 2019). In summary, removing the aforementioned seven items was crucial to maintaining cultural equivalence and structural validity. After their removal, we observed a significantly better model fit.

Because this study's sample was mostly nonclinical, we can compare it with the CCMH–Student Affairs Administrators in Higher Education data set. Although Japanese students tend to demonstrate slightly higher mean scores than American students for all subscales except the substance use (alcohol use) subscale, the CCAPS-Japanese had the same factor structure and pattern of subscales. Thus, the reliability of the CCAPS-Japanese is the same as that of the original CCAPS.

The demographic analyses of the CCAPS-Japanese showed that females reported significantly greater psychological symptoms than did males except for alcohol use. Our findings were consistent with those of other studies (i.e., JNUCHAF, 2015) and further suggested notable gender differences in depression and eating concerns. The internal consistencies of the eight subscales were acceptable to good, ranging from.61 (academic distress) to.89 (depression). The reason for the lower internal consistency of academic distress was probably the fewer items. However, because the number of students struggling with academic concerns is increasing (Suzuki et al., 2019), it is important to assess the academic distress subscale among Japanese university students. In addition, the CITCs for the items measuring the same construct were greater than the recommended cut-off of.30 (Squires, Estabrooks, Newburn-Cook, & Gierl, 2011), indicating moderate to large correlations. Similar to the results of the original CCAPS-62 validation study (Locke et al., 2011), the subscales were intercorrelated in the expected direction. Among them, the correlation between the depression and generalized anxiety subscales was relatively high (r = .74), which may be explained by their high comorbidity (Gorman, 1996; Hirschfeld, 2001; Kessler et al., 2003).

4.1 | Limitations and future directions

There are some limitations in this study. First, the CCAPS-Japanese may not assess all the prominent psychological concerns among Japanese students. For example, psychosomatic complaints (i.e., diarrhoea or constipation, neck/shoulder pain, and lethargy as included in the UPI) and culture-bound syndromes such as “hikikomori” (social withdrawal; Koyama et al., 2010; Teo & Gaw, 2010) and “taijin kyofusho” (fear of interpersonal relations; Asakura et al., 2012) are prevalent among Japanese students. If assessing additional areas is deemed necessary, administering supplemental scales and/or questions that can examine these culturally specific concerns is recommended. Second, this study assessed neither the test–retest reliability of the CCAPS-Japanese nor its convergent and discriminant

validity with other instruments used in Japan that independently measure the eight CCAPS subscales. Once these areas are fully examined, the CCAPS-Japanese may be administered at annual health checkups conducted by Japanese colleges and universities for national and cross-cultural comparisons. Finally, to make the CCAPS-Japanese clinically usable, future studies need to establish cut-offs for clinical significance, *t*-score interpretations, and percentile scores for each subscale, as has been done for the CCAPS-62 (McAleavey et al., 2012).

5 | CONCLUSION

This study developed the CCAPS-Japanese and demonstrated its structural validity and reliability. The CCAPS-Japanese has the same eight-factor structure as the original CCAPS-62. Thus, it can be used to assess psychological concerns and trends among Japanese university students. Future research is necessary to confirm the validity and reliability of the CCAPS-Japanese and expand its clinical utility.

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CONFLICT OF INTEREST

The authors have no conflicts of interest directly relevant to the content of this article.

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