Factors associated with intentions to seek face-to-face and online supports among Chinese-heritage university students in Australia with mental health concerns

Beibei Wang [a b], Nicholas Glozier [a b], Isabella Choi [a b]

[a] Faculty of Medicine and Health, Central Clinical School, The University of Sydney
[b.] Australian Research Council (ARC) Centre of Excellence for Children and Families Over the Life Course

This research was supported partially by the Australian Government through the Australian Research Council's Centre of Excellence for Children and Families over the Life Course (Project ID CE200100025). This article that has been uploaded to this institutional repository to meet Australian Research Council's Open Access funding requirements.

The final version of this manuscript can be found at
https://doi.org/10.1080/13669877.2024.2437616

Please cite this article as below:

Wang, B., Glozier, N., & Choi, I. (2025). Factors associated with intentions to seek face-to-face and online supports among Chinese-heritage university students in Australia with mental health concerns. *International Journal of Intercultural Relations*, *109*, 102311–102311. https://doi.org/10.1016/j.ijintrel.2025.102311

Factors Associated with Intentions to Seek Face-to-Face and Online Supports among Chinese-Heritage University Students in Australia with Mental Health Concerns

Beibei Wang[1, 2], Nicholas Glozier [1, 2], and Isabella Choi [1, 2]

[1]Central Clinical School, Faculty of Medicine and Health, University of Sydney, Sydney, NSW, Australia

[2]Australian Research Council Centre of Excellence for Children and Families over the Life Course

Correspondence concerning this article should be addressed to Beibei Wang, Central Clinical School, Faculty of Medicine and Health, University of Sydney, Sydney, NSW, Australia. Email：Beibei.wang@sydney.edu.au

Declarations of interest

None.

Funding

Isabella Choi and Nicholas Glozier were supported (partially or fully) by the Australian government through the Australian Research Council's Centre of Excellence for Children and Families Over the Life Course (Project ID: CE200100025). The authors received no financial support for the research, authorship, and/or publication of this article.

Acknowledgements

We would like to thank the University of Sydney's Marketing and Communications and Postgraduate Representative Association (SUPRA), Deakin Chinese Cultural Society (DCCS) for their assistance in recruitment, and the participants.

CRediT authorship contribution statement

Beibei Wang: Writing – original draft, Methodology, Data curation, Investigation, Project administration, Formal analysis, Visualization, Conceptualization. **Nicholas Glozier:** Writing – review & editing, Supervision, Methodology, Conceptualization. **Isabella Choi**: Writing – review & editing, Supervision, Methodology, Conceptualization**.**

Ethics approval, consent to participate and Helsinki Declaration

Ethical approval for this study was provided by the University of Sydney Human Research Ethics Committee (Protocol number: 2021/960). All participants provided

written digital informed consent. All authors edited the manuscript and approved the final version for submission. The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008.

Factors Associated with Intentions to Seek Face-to-Face and Online Supports Among Chinese-Heritage University Students in Australia with Mental Health Concerns

Abstract

Chinese-heritage students in Australian universities tend to underuse both face-to-face and online mental health services. This study aimed to explore the associations between mental health knowledge, different types of stigmas, and intentions to seek help from online and face-to-face sources for psychological problems among Chinese-heritage students. Chinese-heritage students (N=268) recruited from three Australian universities completed an online cross-sectional survey. Over 70% self-reported current mental ill-health and 89% had previously sought help for their condition. Overall, there were high intentions to seek help from online (71.3%) and face-to-face (85.1%) sources, with a clear preference for face-to-face support. Multivariate analyses revealed that international student status, longer residence in Australia, and greater mental health knowledge were associated with higher intentions to seek help from online and face-to-face sources; and younger age was additionally associated with intentions to seek help from online sources. The results suggested that, among help-seeking Chinese-heritage students with poor mental health, being an international student and residing longer in Australia were associated with higher intentions to seek help. Strategies to promote help-seeking among Chinese-heritage students in Australia should therefore focus on supporting newly arrived students, as well as improving mental health knowledge.

Keywords: Help-seeking; Mental health knowledge; Stigma; Acculturation; Chinese Australian students; Chinese international students.

Factors Associated with Intentions to Seek Face-to-Face and Online Supports among Chinese-Heritage University Students in Australia with Mental Health Concerns

Mental ill-health is highly prevalent among university students. A WHO survey reported that 31% of first-year university students globally, and up to 43% in Australia, met criteria for at least one mental health condition over a 12-month period (Auerbach et al., 2018). However, only 25% of those students with a 12-month mental health condition had used mental health services in the past year (Bruffaerts et al., 2019). International students and students of ethnic minorities have even lower rates of service access (Zhou et al., 2022). It is estimated that only 17-32.5% of international students in Australia have used mental health services compared to 55- 64.4% of domestic students (Clough et al., 2019; Francis-Taylor et al., 2023; Skromanis et al., 2018).

According to the Australian Bureau of Statistics (2021), people from Chinese heritage are one of Australia's largest ethnic groups (5%; ranking among the top five ancestries). In 2021, international students accounted for 29% of all enrolled students in Australia, with Chinese-heritage students making up the largest international student group (Ferguson & Spinks, 2021). However, the literature suggested that Chinese students were reluctant to seek help for mental health problems. One study found that only 9% of Chinese-speaking international students with heightened mental distress had used any type of formal help (Lu et al., 2014). Students of Chinese heritage were more likely than students of other ancestries to delay seeking treatment until their condition became quite severe (Hsu & Alden, 2008). Even more alarmingly, around 50% of Chinese university students with suicidal ideation reported that informal support from

family and friends could be a suitable substitute for professional help, compared to only 10% of domestic Australian students (Han et al., 2018).

In recent years, there has been growing interest in using online mental health services to facilitate help-seeking among university students. Online mental health refers to the provision of a range of mental health supports, including health literacy, screening, prevention, early intervention, treatment, support, self-help, or a combination of these in a non-face-to-face environment through online or phone-based platforms (Apolinário-Hagen et al., 2017). It has been suggested that people who are reluctant to seek face-to-face treatment may find online mental health more acceptable due to its accessibility, anonymity, and flexibility (Hadler et al., 2021). There is some evidence that Chinese-heritage students might be willing to engage in online mental health services. For example, over 75% of Chinese international students studying in Australia expressed willingness to engage in online mental health treatment (Lu et al., 2014). Similarly, Choi et al. (2015) found that 88% of Chinese Australians were willing to try an online mental health intervention for depression.

In order to increase the use of mental health support in Chinese-heritage students, we need a better understanding of the factors associated with seeking face-to-face and online mental health supports among Chinese-heritage students. The theory of planned behaviour posits that help-seeking intentions are the most proximal determinants of actual behaviours (Ajzen, 1991). Prior studies of university students have found that being older, female, and having a lower level of tertiary education (undergraduate vs. graduate students; masters vs. doctoral students) was associated with higher help-seeking intentions (Lemma et al., 2022; Lian et al., 2020; Zeng et al.,

2023). Students with mental health concerns, such as those with high levels of anxiety and depression (Lee & Shin, 2022; Zeng et al., 2023), and those who have sought help in the past or knew someone with a mental illness (Disabato et al., 2018; Niegocki & Aegisdottir, 2019; Seyfi et al., 2013) also had higher help-seeking intentions.

However, ethnic minority students experience additional cultural-related factors that influence their help-seeking intentions. Students from non-English speaking backgrounds may have difficulties expressing their mental health concerns, which can deter them from seeking help (Ma et al., 2022). Being an international student has also been associated with lower help-seeking behaviours, even after adjusting for age and gender (Clough et al., 2019; LaMontagne et al., 2023). However, studies suggest that students who were more acculturated to Western culture have a higher likelihood of seeking formal help for mental health concerns (Bornschlegl et al., 2020; Kim & Lee, 2022; Li et al., 2016; Li et al., 2018).

The literature also identifies stigma as key factor associated with low help-seeking intentions (Dombou et al., 2023; Lui et al., 2022). Stigma refers to stereotypes, prejudice, and discrimination against someone because of a certain characteristic, such as race, gender, or mental illness (Corrigan & Watson, 2002). In traditional Chinese culture, mental health problems are often viewed as the result of moral defects, weakness, punishment for past misdeeds, or genetic flaws (Yang et al., 2013; Yee et al., 2020). Under these cultural influences, Chinese people with a mental illness may internalise these stigmatising beliefs, which is known as mental illness self-stigma (Young & Ng, 2016). Chinese people have strong concerns about how others perceive them, and may avoid disclosing personal problems or mental ill-health to save face

from embarrassment and public shame (Ma et al., 2022; Tan et al., 2020) and risk being excluded from their social networks (Yin et al., 2020). These beliefs, known as mental illness personal stigma (Calear et al., 2011; Griffiths et al., 2006), may deter individuals from seeking help for their symptoms.

Likewise, help-seeking personal stigma refers to an individual's stigmatising attitudes towards people seeking psychological help, while help-seeking self-stigma refers to the reduction in self-worth one experiences or anticipates experiencing when they themselves seek professional help (Vogel et al., 2013; Vogel et al., 2006). Studies have suggested that help-seeking self-stigma may have a stronger association in university student populations with help-seeking intentions than mental illness personal- and self- stigma (Lannin et al., 2015; Tucker et al., 2013). In a study on Chinese international students, help-seeking self-stigma was also found to be associated with lower help-seeking intentions (Lian et al., 2020).

Most studies have found that help-seeking self-stigma and mental illness personal stigma were negatively associated with help-seeking intentions (Amarasuriya et al., 2018; Choi et al., 2019; Ma et al., 2022; Wang et al., 2020), but no association between mental illness self-stigma and help-seeking (Lannin et al., 2015; Tucker et al., 2013; Wallin et al., 2018). It is less clear whether help-seeking personal stigma has a positive or negative association (Kim & Zane, 2016; Lally et al., 2013; Pan & Hao, 2023; Shahidi & Johnson, 2023) or no association with help-seeking intentions (Andoh–Arthur et al., 2015; El-Hachem et al., 2023).

Studies have found that mental health-related knowledge is associated with reduced stigma and improving help-seeking (Grosselli et al., 2025). The ability to correctly recognise mental

disorders and its treatment can help people challenge stigma beliefs (Evans-Lacko et al., 2010; Ronaldson & Henderson, 2024). Among university students, low mental health knowledge may contribute to challenges with identifying the early signs and symptoms of mental health problems and, in turn, seeking professional help when needed (Dombou et al., 2023). Previous studies have found that Chinese people have lower levels of mental health knowledge compared to other cultural groups. For example, only 14% of Chinese people were able to correctly identify major depression, compared to 68% of Australians and 23% of Japanese in the sample (Wong et al., 2011; Wong et al., 2010). Chinese university students also reported that limited knowledge of mental health services, difficulties recognising the symptoms of mental disorders, and a belief that their distress was not severe enough stopped them from seeking professional help (Lu et al., 2014). However, limited study has explored the role of mental health knowledge and different types of stigmas on help-seeking intentions among university students.

Given the large number of Chinese-heritage and Chinese international students in Australia who underutilise mental health services, there is a need to better understand the association between mental health knowledge, stigmas and help-seeking intentions for online and face-to-face supports among this group. Therefore, this study used an exploratory design to examine the factors associated with intentions to seek online and face-to-face support among Chinese-heritage university students.

Methods

Design

An online cross-sectional survey was conducted among Chinese-heritage university students during April 2022. Participants completed an anonymous online survey via REDCap. The study was approved by the University of XXX Human Research Ethics Committee.

Participants and procedure

Participants had to self-identify as being from a Chinese-speaking background or Chinese ancestry, aged 18 years and above, currently enrolled in an Australian university, with reliable internet access. Participants were recruited via bilingual (English and Chinese) social media posts and paid advertisements on WeChat, Instagram, and Facebook posted by the University and relevant student associations (University Postgraduate Representative Association, Chinese Cultural Society, and Chinese Students Association) of three Australian universities. Posters were also placed across university campuses. Recruitment materials referred to the study as about understanding intentions to seek online and face-to-face help for mental ill-health in Chinese-heritage students. Interested persons were directed to the survey website hosted on REDCap, a secure data capture platform, where they provided informed consent before accessing the survey. Eligibility screening questions (e.g. age < 18) with Stop Actions ensured that ineligible respondents were automatically terminated, and incomplete or invalid responses were excluded from analysis. All study materials were available in both English and Chinese. After completing the survey, participants could opt into a prize draw to win one of ten $20 shopping gift cards as reimbursement for their time.

Measures

Demographics

Participants completed questions on their age, gender, international/domestic student status, length of time in Australia, English proficiency, number of years of university completed, self-reported mental ill-health in the past month, and whether they had previously sought help for mental ill-health.

Help-seeking intentions

The General Help Seeking Questionnaire (GHSQ) was used to assess the respondents' intentions to seek help for personal and/or emotional problems (Wilson et al., 2005). The GHSQ was adapted to include relevant supports to the university student population. Participants were asked to rate their intention to seek help from face-to-face sources (e.g. doctor or mental health professional) and online services (e.g., online information websites, e-Mental Health programs, or Chinese online forums) on a Likert scale ranging from "1=extremely unlikely" to "7= extremely likely". Consistent with Thomas et al. (2014), we dichotomised into low intentions (1-4) and high intentions (5-7) for analysis. The adapted Chinese version of GHSQ was used in a recent study of Chinese and Australian university students (Han et al., 2018). The GHSQ yielded a Cronbach's alpha of 0. 78 in this study.

Mental Health Knowledge

The 12-item Mental Health Knowledge Schedule (MAKS) (Evans-Lacko et al., 2010) was used to measure stigma-related mental health knowledge. The participants rated each item on a 5-point Likert scale from "1 = strongly disagree" to "5 = strongly agree", with higher scores

representing more knowledge. MAKS has demonstrated adequate internal consistency (α =0 .71) (Evans-Lacko et al., 2010). The Chinese version has been validated and previously used among Chinese people in Hong Kong (Mind HK, 2018). Internal consistency in the current study was adequate (α =0 .71).

Help-seeking personal stigma

The 5-item Social Stigma of Receiving Psychological Help Scale (SSRPH) (Komiya et al., 2000) was used to assess the respondents' perceptions about seeking professional help for mental health problems. The items include statements such as: "*It is a sign of personal weakness or inadequacy to see a psychologist for emotional or interpersonal problems.*" These were rated on a 4-point Likert scale from "1= strongly disagree" to "4 = strongly agree", with higher scores representing greater help-seeking personal stigma. The internal consistency has been demonstrated in the Chinese population (α = 0.81) (Chen et al., 2021). The reliability coefficient in this study was 0.82.

Mental illness personal stigma

The 7-item Social Distance Scale (SDS) was used to assess the degree of avoidance toward individuals with a mental illness (Link et al., 1987). The items include statements like: "*How would you feel about renting a room in your home to someone with a mental illness?"* These were rated on a 4-point Likert scale ranging from "0 =definitely unwilling" to "3 =definitely willing". All items were reverse scored, with higher scores representing a greater desire to distance oneself from people with mental illness. The SDS has good internal consistency (α =

0.75) (Penn et al., 1994). We used the Chinese version of the SDS (Chen et al., 2021), which yielded a Cronbach's alpha of 0.85 with the current sample.

Help-seeking self-stigma

The 10-item Self-stigma of Seeking Help Scale (SSOSH) (Vogel et al., 2006) was designed to quantify the perception that seeking psychological help would threaten one's overall worth as an individual, regardless of whether or not has already been diagnosed with a mental illness. The items, which include statements like "*I would feel inadequate if I went to a therapist for psychological help*", were rated on a 5-point Likert scale from "1 = strongly disagree" to "5 = strongly agree", with higher scores representing greater help-seeking self-stigma. The Chinese version of the scale has demonstrated good internal consistency (α = 0.81) (Shi et al., 2020). In the current study, internal consistency was adequate (Cronbach's alpha = 0.71).

Mental illness self-stigma

The 10-item Self-Stigma of Mental Illness Scale (SSOMI) (Tucker et al., 2013) was used to measure the reduction in self-esteem and self-efficacy that people think may result from being labelled as mentally ill, even if they do not have an illness. The items include statements such as: *"I would feel inadequate if I had a mental illness*." These were rated on a 5-point Likert scale from "1 = strongly disagree" to "5 = strongly agree", with higher scores representing greater mental illness self-stigma. The SSOMI scale has demonstrated good internal consistency in previous research (α = .91-.93) (Lannin et al., 2015; Tucker et al., 2013).

In this study, we translated the SSOMI into Chinese. We adapted the Chinese version of the SSOSH scale (Shi et al., 2020) which has the same questions as the SSOMI (Vogel et al., 2006), except the SSOMI asks about "mental illness" while the SSOSH asks about "seeking psychological help". Hence, references in the items to "seeking psychological help" have been simply replaced with "mental illness" for the Chinese version of the SSOMI. All other items and response options remained unchanged. Internal consistency in the current study was high at $\alpha = 0.84$.

Translation

All materials were available in English with Chinese translations, using the validated Chinese language versions of standardised measures where possible. For content that had no previously translated Chinese versions, a Chinese first-language international student studying a medical degree translated the English content into Chinese, and two Chinese Australians back translated it to English independently. This was revised by a bilingual Master student and bilingual clinical psychologist until all translated items were equivalent in meaning to the English original.

Data analysis

All statistical analyses were conducted using SPSS version 28. Descriptive statistics were reported for the demographic items. Although initially we planned to explore demographic differences between domestic and international student status, we found that over 25% of domestic students had been in Australia for less than 1 year (this may be possible if they had recently become an Australian resident). As such, we used the variable "Years in Australia" to

examine any differences in demographic characteristics. Differences in demographics, mental health knowledge and stigmas between high and low intentions to seek online and face-to-face help were assessed using chi-square tests, independent sample t-tests, or ANOVAs.

We examined the associations between mental health knowledge or stigmas and help-seeking intentions, and then conducted separate preliminary logistic regression models to adjust for demographic factors as potential confounders (Table 3). This was followed by two separate multivariate logistic regression models (Table 4A/B) to assess exposures associated with the intention to seek online and face-to-face help, respectively (our two outcome variables). In both models, demographic variables (age, gender, student status, English proficiency, previous help-seeking experience, and mental health condition) were included in Step 1. Years in Australia was entered in a separate regression at Step 2, while mental health knowledge and stigmas were entered in Step 3 in the presence of control variables. Then all variables were entered into a final logistic regression.

We also tested the full model for multicollinearity using variance inflation factor (VIF) diagnostics, focusing on mental health-related variables (Supplementary Table 1). The VIF for each variable in our model was well below the norm of 5 with a mean VIF of 1.26, indicating that collinearity did not represent a threat. We consider regression to be appropriate for the present analysis, with the significance of the regression coefficients considered to be interpretable.

Results

Sample characteristics

The final sample consisted of 268 participants. As shown in Table 1, the mean age of the participants was 24.27 years (SD = 4.10; range = 18 – 34), and the majority were female (64.6%). Most participants (64.6%) identified as an international student; 35.4% identified as a domestic student (either as a Chinese immigrant or an Australian-born Chinese). Also, 29.9% had spent less than one year in Australia, 41.8% had been in Australia between one and four years, and 28.4% had lived in Australia for over four years. Most participants (70.9%) self-reported experiencing mental ill-health, and 88.8% had previously sought help for their mental health.

Participants who had lived in Australia for less than four years were more likely to be international students than domestic ($p < 0.001$). Those who had lived in Australia for less than four years did not speak English as well compared to those who had lived in Australia for more than four years ($p < 0.001$). Those who had had lived here for more than one year were more likely to be in their third year or above of study ($p <0.001$). There were no other significant differences across Years in Australia.

[Insert Table 1 here].

Help-seeking intentions

Most participants indicated that, if they were experiencing a personal or emotional problem, they would seek help online (71.3%) or face-to-face (85.4%), with face-to-face support being the significantly preferred option ($\chi^2(1, N = 268) = 87.30$, $p < 0.001$). As shown in Table 2, international students, younger students (both ps<0.001), and those who lived in Australia for over four years (p=0.006) were more likely to seek both online and face-to-face help. In addition,

participants with high intentions to seek face-to-face help were more likely to be female, completed the survey in Chinese (both *p*s<0.001), and reported current mental ill-health (*p*=0.004). Those who reported high intentions to seek help online were more likely to have an undergraduate degree, and had previously sought help (both *ps*=0.016).

[Insert Table 2 here].

Table 3 shows that the participants reporting high intentions to seek online and face-to-face help had significantly greater mental health knowledge, lower mental illness personal stigma and lower help-seeking self-stigma in the bivariate unadjusted analysis (*all p*s<0.001). Participants who reported high face-to-face help-seeking intentions also reported significantly lower help-seeking personal stigma than those with low intentions (*p*<0.001). After adjusting for demographic factors, mental health knowledge (*OR* = 1.11, 95%CI [1.05,1.18]), mental illness personal stigma (*OR* = 0.91, 95%CI [0.82, 0.99]) and help-seeking self-stigma (*OR* = 0.91, 95%CI [0.83, 0.98]) were significantly associated with face-to-face help-seeking intentions. After adjusting for demographics, only mental health knowledge (*OR* = 1.06, 95%CI [1.01, 1.12]) was significantly associated with the intention to seek online help.

[Insert Table 3 here].

Associations with help-seeking – face-to-face help

Table 4A shows the results of the hierarchical binary logistic regression model exploring demographic factors, mental health knowledge, and the stigmas associated with face-to-face help. Step 1 significantly improved model fit ($\chi^2(6) = 63.60$, $p < 0.001$, *Nagelkerke* $R^2 = 0.32$). Being younger in age, female, international student status, and English proficiency were

associated with help-seeking intentions. Step 2 added Years in Australia, which resulted in a small but significant change, with age and English proficiency no longer being significant ($\Delta\chi^2(2) = 17.94$, $p < 0.001$, *Nagelkerke* $R^2 = 0.40$). In Step 3, mental health knowledge was significant and mental illness personal stigma explained a significant amount of the variance beyond the control variables *(*$\Delta\chi^2(3) = 28.33$, $p < 0.001$, *Nagelkerke* $R^2 = 0.44$). Step 4 remained statistically significant when all variables were entered ($\chi^2(11) = 99.60$, $p < 0.001$). International student status (*OR*= 4.03, 95% CI[1.63, 10.00]), "over 4 years in Australia" (*OR*= 4.49, 95% CI[1.48,13.64]), and mental health knowledge (*OR*= 1.10, 95% CI[1.03,1.17]), explained 47% of the variance ($\Delta\chi^2(5) = 36.00$, $p < 0.001$).

[Table 4A near here].

Associations with help-seeking intentions for online support

Similarly, a hierarchical binary logistic regression model was estimated for the intention to seek help online (see Table 4B). Step 1 accounted for significant variance ($\chi^2(6) = 45.21$, $p < 0.001$, *Nagelkerke* $R^2 = 0.22$), again by way of younger age, international student status and lower English proficiency. In Step 2, adding Years in Australia increased the accounted-for variance to 32% ($\Delta\chi^2(2) = 22.62$, $p < 0.001$) while English proficiency was no longer significant. In Step 3, mental illness personal stigma and mental health knowledge were associated with intentions to seek online support and together with the other significant control variables, explained 28% of the variance ($\Delta\chi^2(2) = 12.67$, $p < 0.001$). Step 4 remained statistically significant ($\chi^2(10) = 75.56$, $p < 0.001$). Younger age (*OR*= 0.92, 95%CI[0.85,0.99]), international student status (*OR*= 3.67, 95%CI[1.66,8.13]), longer time in Australia ($OR_{1\text{-}4\ years}$= 3.40,

95%CI[1.62,7.14]; $OR_{4+years}$= 5.52, 95%CI[2.27, 14.05])), and mental health knowledge (*OR*= 1.06, 95%CI[1.00, 1.12]) accounted for 35% of the variance in intentions to seek online help ($\Delta\chi^2(4) = 30.35$, $p < 0.001$).

[Table 4B near here].

Discussion

The present study explored the associations with intentions to seek help from face-to-face and online supports among Chinese-heritage students in Australia. We found that among Chinese-heritage students with mental ill-health and previous help-seeking, over 70% reported high intentions to seek online support, while 85% indicated willingness to use face-to-face support, with a clear preference for face-to-face sources. We also found that while controlling for other variables, younger age, international student status, longer residence in Australia, and greater mental health knowledge were associated with a greater intention to seek help online. In terms of intentions to seek help face-to-face, being an international student, extended residence in Australia, and greater mental health knowledge were the driving factors. Stigmas were not associated with help-seeking intentions in either context.

Consistent with previous studies exploring help-seeking intentions among Chinese people (Choi et al., 2015; Lu et al., 2014), we found that while there were high intentions to use online mental health supports, there was a preference for face-to-face services among mentally unwell Chinese-heritage students. It is suggested that the barriers of digital mental health services outweigh potential benefits (Choi et al., 2015) or that Chinese-heritage students may not be

familiar with online mental health supports. It is also possible that in our sample mainly consisted of Chinese-heritage students who had previously sought help, and thus had a preference towards face-to-face help-seeking. Nonetheless, these findings support the viability of universities to provide online mental health support services to meet the diverse needs and preferences of students. We further discuss the factors associated with higher intentions to seek help for online and face-to-face sources among Chinese-heritage students below.

International student status

International student status was positively associated with a willingness to seek help from both face-to-face and online sources compared to domestic students, even after controlling for all other variables including self-reported mental ill-health and previous help-seeking. Recent studies have found that international students have significantly higher help-seeking intentions for professional mental health services than their domestic counterparts (LaMontagne et al., 2023). It is interesting that we found the same finding despite our domestic student comparison group were Chinese immigrants and Australian-born Chinese, rather than domestic students from the majority culture. This finding may also reflect greater psychological distress among international students than domestic students during the pandemic (Mihrshahi et al., 2022; Russell et al., 2023), particularly Chinese international students residing in Australia (Ke et al., 2023). Poor mental health among university students has been associated with increased help-seeking behaviours during this time (Burns et al., 2023). Nonetheless, we found that international

student were 3-4 times more likely to have high intentions to seek help, even accounting for self-reported mental ill-health.

Duration of residence

Chinese-heritage students who have resided in Australia for longer periods of time had higher intentions to seek both face-to-face and online help, while controlling for other variables. This in line with previous research reporting that second-generation Asian American students were more likely to seek professional help than their first-generation counterparts (Han & Pong, 2015). Xiong et al. (2025) also found that acculturative stress among Chinese-speaking international students in Australia increased over their first months, with language as their most significant acculturation challenge. Our findings suggest that English language proficiency was a barrier to seeking both face-to-face and online help, but it was no longer significant once length of residence was accounted for.

Length of time spent in Australia also accounted for the significant effects of mental illness personal stigma. This suggests that longer time living in Australia may weaken the association between mental illness personal stigma and the intention to seek help, which is consistent with previous studies suggesting an inverse relationship between acculturation and stigma (Li, 2021; Shu et al., 2022).

Together, these findings suggest that newly arrived Chinese-heritage students may be unfamiliar with the available face-to-face and online mental health services, face higher English language barriers, and hold greater personal stigma which deter them from help-seeking. As such, universities may need to provide early interventions to help increase mental health supports

to newly arrived students who have lower English proficiency. Peer supports offered soon after arrival may help Chinese-heritage students normalise acculturative stress and increase help-seeking (Richard et al., 2022). Social contacts interventions have also been shown to reduce mental illness personal stigmas and improve help-seeking outcomes among university students (Brown, 2020; Wong et al., 2018).

Further, there is a need to develop and promote online mental health interventions specifically for Chinese-heritage students in their native language, especially new students, as major Australian mental health websites lack translation tools (Murray et al., 2022). Chinese-language online help-seeking interventions also has the potential to overcome such barriers and support Chinese-speaking university students who have not sought professional help and prefer accessing mental health information in their own language (Choi et al., 2023).

Mental health knowledge

Greater mental health knowledge was associated with a significant but small increase in intentions to seek face-to-face and online sources among Chinese-heritage students, which is congruent with previous research among university students (Kim et al., 2020; Zeng et al., 2023). Although mental illness personal stigma and help-seeking self-stigma were associated with higher intentions to seek help for face-to-face and online sources in the multivariate analysis, they were no longer significant once accounting for each other and mental health knowledge in the logistic regressions. This suggests that previous studies which have found negative associations between help-seeking self-stigma and mental illness personal stigma on help-

seeking intentions may have not accounted for the role of stigma-related mental health knowledge (Amarasuriya et al., 2018; Choi et al., 2019; Ma et al., 2022; Wang et al., 2020).

Nonetheless, higher education institutions would be wise to invest in resources that improve mental health knowledge among this student population. Specifically, mental health first aid (MHFA) training has been shown to have potential in this regard (El-Den et al., 2020). For example, Zhuang et al. (2020) demonstrated that MHFA training can enhance mental health knowledge and decrease stigmatising attitudes towards mental illness among Chinese-speaking international students in Melbourne. Therefore, MHFA training may be a valuable strategy for higher educational institutions to support Chinese-heritage students. Further, government and universities can develop educational programs tailored to international students to increase their knowledge about external mental health services and the costs, benefits, and levels of compulsory health insurance to strengthen their intentions to utilise external pathways to seek professional help.

Other factors

Younger age was weakly associated with higher intentions to seek online help. This is consistent with prior studies among university students, which have shown that younger individuals tend to be more accepting of digital health interventions (Ferretti et al., 2023), a trend that has likely been accelerated by the COVID-19 pandemic and the widespread adoption of online platforms for health and wellbeing.

Limitations

This study has a number of limitations. First, our advertisements mentioning mental ill-health and help-seeking attracted a high proportion of participants who self-reported mental ill-health and have previously sought help. This self-selection bias likely contributed to the over-representation of students with high help-seeking intentions for both face-to-face and online sources. While these findings are relevant to Chinese-heritage students who experience mental ill-health and are in need of support, it is unclear whether Chinese-heritage students without mental illness or those who have not sought help in the past have such positive attitudes towards face-to-face and online mental health supports. Nonetheless, the logistic regressions controlled for self-reported mental ill-health and past help-seeking, suggesting that international student status, length of residency in Australia, and mental health knowledge were associated with higher help-seeking intentions. However, it should be noted that the small sample size in the low-intention groups, especially in the face-to-face analysis ($n = 62$; EPV < 10), raises the possibility of overfitting. Findings should therefore be interpreted cautiously and confirmed in larger samples. Nonetheless, our results point to several key variables associated with help-seeking among those who are unwell and interested in getting help.

Second, our selection of measures were exploratory in nature. We used a broad definition of online supports, which may have overlooked the unique differences between e-mental health interventions and information websites. Further, the Chinese version of the SSOMI used in this study has not been formally validated. We included measures of different types of stigmas, and it is possible that each measure captured dimensions of stigma similar to another stigma measure.

However, additional factor analysis on the stigma measures found that 6 factors explained most of the variability, suggesting that the chosen measures captured distinct constructs (see supplementary Table 2). In addition, Years in Australia was included as a very basic proxy of acculturation, but it cannot capture the full complexity of acculturation, including aspects such as cultural identity and social integration. Future studies should incorporate validated multidimensional measures of acculturation. Another limitation was our study design's inability to disentangle between Australian-born Chinese and immigrant domestic students. Future research should use larger samples and capture more detailed demographic data to examine differences between these subgroups.

Finally, the cross-sectional design of the study does not allow for inferences of causality between the exposures and help-seeking intentions. Future studies should use longitudinal designs to examine whether the variables identified here predict actual help-seeking behaviour and explicitly test these processes within frameworks such as the Theory of Planned Behavior or related models. It would also be useful to use qualitative approaches, such as in-depth interviews or focus groups, to investigate the facilitators and barriers to seeking face-to-face or online help among students of Chinese ethnicity.

Conclusions

This study was the first to explore factors associated with intentions to seek face-to-face and online help among Chinese-heritage students in Australia. Our results suggested that, among our sample of relatively unwell students with previous help-seeking experience, international students, those with longer residence in Australia, and greater mental health knowledge were

more likely to seek face-to-face and online supports. This suggests that universities need to develop early interventions aimed at increase mental health knowledge, especially among Chinese-heritage students who are new arrivals.

References

Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, *50*(2), 179-211. https://doi.org/10.1016/0749-5978(91)90020-T

Amarasuriya, S. D., Jorm, A. F., & Reavley, N. J. (2018). Predicting intentions to seek help for depression among undergraduates in Sri Lanka. *BMC Psychiatry*, *18*(1), 122. https://doi.org/10.1186/s12888-018-1700-4

Andoh–Arthur, J., Oppong Asante, K., & Osafo, J. (2015). Determinants of Psychological Help-Seeking Intentions of University Students in Ghana. *International Journal for the Advancement of Counselling*, *37*(4), 330-345. https://doi.org/10.1007/s10447-015-9247-2

Apolinário-Hagen, J., Kemper, J., & Stürmer, C. (2017). Public Acceptability of E-Mental Health Treatment Services for Psychological Problems: A Scoping Review. *JMIR mental health*, *4*(2), e10-e10. https://doi.org/10.2196/mental.6186

Auerbach, R. P., Mortier, P., Bruffaerts, R., Alonso, J., Benjet, C., Cuijpers, P., Demyttenaere, K., Ebert, D. D., Green, J. G., Hasking, P., Murray, E., Nock, M. K., Pinder-Amaker, S., Sampson, N. A., Stein, D. J., Vilagut, G., Zaslavsky, A. M., & Kessler, R. C. (2018). WHO World Mental Health Surveys International College Student Project: Prevalence and Distribution of Mental Disorders. *Journal of abnormal psychology*, *127*(7), 623-638. https://doi.org/10.1037/abn0000362

Bornschlegl, M., Meldrum, K., & Caltabiano, N. J. (2020). Variables Related to Academic Help-Seeking Behaviour in Higher Education – Findings from a Multidisciplinary Perspective. *Review of Education*, *8*(2), 486-522. https://doi.org/10.1002/rev3.3196

Brown, S. (2020). The Effectiveness of Two Potential Mass Media Interventions on Stigma: Video-Recorded Social Contact and Audio/Visual Simulations. *Community Mental Health Journal*, *56*(3), 471-477. https://doi.org/10.1007/s10597-019-00503-8

Bruffaerts, R., Mortier, P., Auerbach, R. P., Alonso, J., Hermosillo De la Torre, A. E., Cuijpers, P., Demyttenaere, K., Ebert, D. D., Green, J. G., Hasking, P., Stein, D. J., Ennis, E., Nock, M. K., Pinder-Amaker, S., Sampson, N. A., Vilagut, G., Zaslavsky, A. M., & Kessler, R. C. (2019). Lifetime and 12-month treatment for mental disorders and suicidal thoughts and behaviors among first year college students. *International journal of methods in psychiatric research*, *28*(2), e1764. https://doi.org/10.1002/mpr.1764

Burns, D., Dagnall, N., & Denovan, A. (2023). Predictors of help-seeking behaviour in UK university students during the COVID-19 pandemic. *Journal of further and higher education*, *47*(6), 727-739. https://doi.org/10.1080/0309877X.2023.2226598

Calear, A. L., Griffiths, K. M., & Christensen, H. (2011). Personal and perceived depression stigma in Australian adolescents: Magnitude and predictors. *Journal of Affective Disorders*, *129*(1), 104-108. https://doi.org/10.1016/j.jad.2010.08.019

Chen, S., Chen, K., Wang, S., Wang, W., & Li, Y. (2021). Initial Validation of a Chinese Version of the Mental Health Literacy Scale Among Chinese Teachers in Henan Province. *Frontiers in psychiatry*, *12*, 661903-661903. https://doi.org/10.3389/fpsyt.2021.661903

Choi, I., Sharpe, L., Li, S., & Hunt, C. (2015). Acceptability of psychological treatment to

Chinese- and Caucasian-Australians: Internet treatment reduces barriers but face-to-face care is preferred. *Social Psychiatry and Psychiatric Epidemiology*, *50*(1), 77-87. https://doi.org/10.1007/s00127-014-0921-1

Choi, N.-Y., Kim, H. Y., & Gruber, E. (2019). Mexican American Women College Students' Willingness to Seek Counseling: The Role of Religious Cultural Values, Etiology Beliefs, and Stigma. *Journal of counseling psychology*, *66*(5), 577-587. https://doi.org/10.1037/cou0000366

Clough, B. A., Nazareth, S. M., Day, J. J., & Casey, L. M. (2019). A comparison of mental health literacy, attitudes, and help-seeking intentions among domestic and international tertiary students. *British journal of guidance & counselling*, *47*(1), 123-135. https://doi.org/10.1080/03069885.2018.1459473

Corrigan, P. W., & Watson, A. C. (2002). The Paradox of Self-Stigma and Mental Illness. *Clinical psychology (New York, N.Y.)*, *9*(1), 35-53. https://doi.org/10.1093/clipsy.9.1.35

Disabato, D. J., Short, J. L., Lameira, D. M., Bagley, K. D., & Wong, S. J. (2018). Predicting help-seeking behavior: The impact of knowing someone close who has sought help. *Journal of American college health*, *66*(8), 731-738. https://doi.org/10.1080/07448481.2018.1440568

Dombou, C., Omonaiye, O., Fraser, S., Cénat, J. M., Fournier, K., & Yaya, S. (2023). Barriers and facilitators associated with the use of mental health services among immigrant students in high-income countries: A systematic scoping review. *PLOS ONE*, *18*(6), e0287162-e0287162. https://doi.org/10.1371/journal.pone.0287162

El-Den, S., Moles, R., Choong, H.-J., & O'Reilly, C. (2020). Mental Health First Aid training and assessment among university students: A systematic review. *Journal of the American Pharmacists Association*, *60*(5), e81-e95. https://doi.org/10.1016/j.japh.2019.12.017

El-Hachem, S. S., Lakkis, N. A., Osman, M. H., Issa, H. G., & Beshara, R. Y. (2023). University students' intentions to seek psychological counseling, attitudes toward seeking psychological help, and stigma. *Social Psychiatry and Psychiatric Epidemiology*. https://doi.org/10.1007/s00127-023-02470-8

Evans-Lacko, S., Little, K., Meltzer, H., Rose, D., Rhydderch, D., Henderson, C., & Thornicroft, G. (2010). Development and Psychometric Properties of the Mental Health Knowledge Schedule. *Canadian journal of psychiatry*, *55*(7), 440-448. https://doi.org/10.1177/070674371005500707

Ferguson, H., & Spinks, H. (2021). *Overseas students in Australian higher education: a quick guide.* Australian Government. https://parlinfo.aph.gov.au/parlInfo/download/library/prspub/6765126/upload_binary/6765126.pdf . Accessed January 6, 2025

Ferretti, A., Hubbs, S., & Vayena, E. (2023). Global youth perspectives on digital health promotion: a scoping review. *BMC Digital Health*, *1*(1), 25. https://doi.org/10.1186/s44247-023-00025-0

Francis-Taylor, R., Lipscomb, R., Sanatkar, S., Healy, M., & Kefalas, B. (2023). On-campus mental health services for Australian university students: A retrospective analysis of

service utilisation. *Australasian psychiatry : bulletin of the Royal Australian and New Zealand College of Psychiatrists*, 10398562231169611-10398562231169611. https://doi.org/10.1177/10398562231169611

Griffiths, K. M., Nakane, Y., Christensen, H., Yoshioka, K., Jorm, A. F., & Nakane, H. (2006). Stigma in response to mental disorders: a comparison of Australia and Japan. *BMC Psychiatry*, *6*(1), 21. https://doi.org/10.1186/1471-244X-6-21

Grosselli, L., Baumgärtel, J., Böhm, H., Hoyer, J., & Knappe, S. (2025). When Knowledge Falls Short: A Systematic Review on the Correlation of Mental Health Knowledge With Stigma and Help-Seeking. *Mental health science*, *3*(2), n/a. https://doi.org/10.1002/mhs2.70022

Hadler, N. L., Bu, P., Winkler, A., & Alexander, A. W. (2021). College Student Perspectives of Telemental Health: a Review of the Recent Literature. *Current Psychiatry Reports*, *23*(2), 6. https://doi.org/10.1007/s11920-020-01215-7

Han, J., Batterham, P. J., Calear, A. L., & Ma, J. (2018). Seeking professional help for suicidal ideation: A comparison between Chinese and Australian university students. *Psychiatry Res*, *270*, 807-814. https://doi.org/10.1016/j.psychres.2018.10.080

Han, M., & Pong, H. (2015). Mental Health Help-Seeking Behaviors Among Asian American Community College Students: The Effect of Stigma, Cultural Barriers, and Acculturation. *Journal of college student development*, *56*(1), 1-14. https://doi.org/10.1353/csd.2015.0001

Hsu, L., & Alden, L. E. (2008). Cultural Influences on Willingness to Seek Treatment for Social Anxiety in Chinese- and European-Heritage Students. *Cultural diversity & ethnic minority psychology*, *14*(3), 215-223. https://doi.org/10.1037/1099-9809.14.3.215

Ke, T., Li, W., Sanci, L., Reavley, N., Williams, I., & Russell, M. A. (2023). The mental health of international university students from China during the COVID-19 pandemic and the protective effect of social support: A longitudinal study. *Journal of Affective Disorders*, *328*, 13-21. https://doi.org/10.1016/j.jad.2023.02.014

Kim, E. J., Yu, J. H., & Kim, E. Y. (2020). Pathways linking mental health literacy to professional help-seeking intentions in Korean college students. *Journal of Psychiatric and Mental Health Nursing*, *27*(4), 393-405. https://doi.org/10.1111/jpm.12593

Kim, J. E., & Zane, N. (2016). Help-Seeking Intentions Among Asian American and White American Students in Psychological Distress: Application of the Health Belief Model. *Cultural diversity & ethnic minority psychology*, *22*(3), 311-321. https://doi.org/10.1037/cdp0000056

Kim, S. B., & Lee, Y. J. (2022). Factors Associated with Mental Health Help-Seeking Among Asian Americans: a Systematic Review. *Journal of Racial and Ethnic Health Disparities*, *9*(4), 1276-1297. https://doi.org/10.1007/s40615-021-01068-7

Komiya, N., Good, G. E., & Sherrod, N. B. (2000). Emotional Openness as a Predictor of College Students' Attitudes Toward Seeking Psychological Help. *Journal of counseling psychology*, *47*(1), 138-143. https://doi.org/10.1037/0022-0167.47.1.138

Lally, J., ó Conghaile, A., Quigley, S., Bainbridge, E., & McDonald, C. (2013). Stigma of mental illness and help-seeking intention in university students. *The Psychiatrist*, *37*(8), 253-260.

https://doi.org/10.1192/pb.bp.112.041483

LaMontagne, A. D., Shann, C., Lolicato, E., Newton, D., Owen, P. J., Tomyn, A. J., & Reavley, N. J. (2023). Mental health-related knowledge, attitudes and behaviours in a cross-sectional sample of australian university students: a comparison of domestic and international students. *BMC Public Health*, *23*(1), 170-170. https://doi.org/10.1186/s12889-023-15123-x

Lannin, D. G., Vogel, D. L., Brenner, R. E., & Tucker, J. R. (2015). Predicting Self-Esteem and Intentions to Seek Counseling: The Internalized Stigma Model Ψ. *The Counseling Psychologist*, *43*(1), 64-93. https://doi.org/10.1177/0011000014541550

Lee, J.-Y., & Shin, Y.-J. (2022). Using the Theory of Planned Behavior to Predict Korean College Students' Help-Seeking Intention. *The journal of behavioral health services & research*, *49*(1), 76-90. https://doi.org/10.1007/s11414-020-09735-z

Lemma, A., Minichil, W., Salelew, E., Tadesa, J., Kerebih, H., Nigussie, K., Demilew, D., & Shumet, S. (2022). University students' help seeking intention for depression from health professionals; a cross sectional study. *PLOS ONE*, *17*(7), e0271392-e0271392. https://doi.org/10.1371/journal.pone.0271392

Li, J., Marbley, A. F., Bradley, L. J., & Lan, W. (2016). Attitudes Toward Seeking Professional Counseling Services Among Chinese International Students: Acculturation, Ethnic Identity, and English Proficiency. *Journal of Multicultural Counseling and Development*, *44*(1), 65-76. https://doi.org/10.1002/jmcd.12037

Li, J.-Y. (2021). Acculturation and Social Stigma: Mental Health Communicative Action and Help-seeking Behaviors among Chinese Immigrants in the United States. *International journal of strategic communication*, *15*(5), 487-503. https://doi.org/10.1080/1553118X.2021.1984918

Li, W., Denson, L. A., & Dorstyn, D. S. (2018). Understanding Australian university students' mental health help-seeking: An empirical and theoretical investigation. *Australian Journal of Psychology*, *70*(1), 30-40. https://doi.org/10.1111/ajpy.12157

Lian, Z., Wallace, B. C., & Fullilove, R. E. (2020). Mental Health Help-Seeking Intentions Among Chinese International Students in the U.S. Higher Education System: The Role of Coping Self-Efficacy, Social Support, and Stigma for Seeking Psychological Help. *Asian American journal of psychology*, *11*(3), 147-157. https://doi.org/10.1037/aap0000183

Link, B. G., Cullen, F. T., Frank, J., & Wozniak, J. F. (1987). The Social Rejection of Former Mental Patients: Understanding Why Labels Matter. *The American journal of sociology*, *92*(6), 1461-1500. https://doi.org/10.1086/228672

Lu, S. H., Dear, B. F., Johnston, L., Wootton, B. M., & Titov, N. (2014). An internet survey of emotional health, treatment seeking and barriers to accessing mental health treatment among Chinese-speaking international students in Australia. *Counselling psychology quarterly*, *27*(1), 96-108. https://doi.org/10.1080/09515070.2013.824408

Lui, J. C., Sagar-Ouriaghli, I., & Brown, J. S. L. (2022). Barriers and facilitators to help-seeking for common mental disorders among university students: a systematic review. *Journal of American college health*, *ahead-of-print*(ahead-of-print), 1-9.

https://doi.org/10.1080/07448481.2022.2119859

Ma, S., Zhu, Y., & Bresnahan, M. (2022). Chinese International Students' Face Concerns, Self-Stigma, Linguistic Factors, and Help-Seeking Intentions for Mental Health. *Health communication*, *37*(13), 1631-1639. https://doi.org/10.1080/10410236.2021.1910167

Mihrshahi, S., Dharmayani, P. N. A., Amin, J., Bhatti, A., Chau, J. Y., Ronto, R., Turnip, D., & Taylor, M. (2022). Higher Prevalence of Food Insecurity and Psychological Distress among International University Students during the COVID-19 Pandemic: An Australian Perspective. *International journal of environmental research and public health*, *19*(21), 14101. https://doi.org/10.3390/ijerph192114101

Mind HK. (2018). *Mental health related knowledge, attitudes and behaviours in Hong Kong*. https://www.mind.org.hk/wp-content/uploads/2020/08/TTCResearch2018.pdf. Accessed January 6, 2025

Niegocki, K. L., & Aegisdottir, S. (2019). College Students' Coping and Psychological Help-Seeking Attitudes and Intentions. *Journal of Mental Health Counseling*, *41*(2), 144-157. https://doi.org/10.17744/mehc.41.2.04

Pan, Q., & Hao, Z. (2023). Chinese college students' help-seeking behavior: An application of the modified theory of planned behavior. *PsyCh journal (Victoria, Australia)*, *12*(1), 119-127. https://doi.org/10.1002/pchj.605

Penn, D. L., Guynan, K., Daily, T., Spaulding, W. D., Garbin, C. P., & Sullivan, M. (1994). Dispelling the Stigma of Schizophrenia: What Sort of Information Is Best? *Schizophrenia bulletin*, *20*(3), 567-578. https://doi.org/10.1093/schbul/20.3.567

Richard, J., Rebinsky, R., Suresh, R., Kubic, S., Carter, A., Cunningham, J. E. A., Ker, A., Williams, K., & Sorin, M. (2022). Scoping review to evaluate the effects of peer support on the mental health of young adults. *BMJ open*, *12*(8), e061336. https://doi.org/10.1136/bmjopen-2022-061336

Ronaldson, A., & Henderson, C. (2024). Investigating changes in mental illness stigma and discrimination after the Time to Change programme in England. *BJPsych open*, *10*(6), e199. https://doi.org/10.1192/bjo.2024.801

Russell, M. A., Reavley, N., Williams, I., Li, W., Tarzia, L., Chondros, P., & Sanci, L. (2023). Changes in mental health across the COVID-19 pandemic for local and international university students in Australia: a cohort study. *BMC Psychology*, *11*(1), 55. https://doi.org/10.1186/s40359-023-01075-9

Seyfi, F., Poudel, K. C., Yasuoka, J., Otsuka, K., & Jimba, M. (2013). Intention to seek professional psychological help among college students in Turkey: influence of help-seeking attitudes. *BMC Research Notes*, *6*(1), 519-519. https://doi.org/10.1186/1756-0500-6-519

Shahidi, D., & Johnson, D. (2023). The Effect of Mental Health Literacy on Psychological Help-Seeking Intention, Among Thai Undergraduate Students in Bangkok. *ABAC ODI Journal Vision. Action. Outcome*, *10*(2), 73. https://doi.org/10.14456/abacodijournal.2023.5

Shi, C.-r., Zhao, C.-x., Cheng, Q., & Ren, Z.-h. (2020). Initial validation of the help-seeker stereotype scale in a Chinese cultural context: A bifactor model. *Current psychology*

(New Brunswick, N.J.), *39*(3), 821-829. https://doi.org/10.1007/s12144-020-00703-6

Shu, J. L., Alleva, J. M., & Stutterheim, S. E. (2022). Perspectives on mental health difficulties amongst second-generation Chinese individuals in Germany: Stigma, acculturation, and help seeking. *Journal of Community & Applied Social Psychology*. https://doi.org/10.1002/casp.2620

Skromanis, S., Cooling, N., Rodgers, B., Purton, T., Fan, F., Bridgman, H., Harris, K., Presser, J., & Mond, J. (2018). Health and Well-Being of International University Students, and Comparison with Domestic Students, in Tasmania, Australia. *International journal of environmental research and public health*, *15*(6), 1147. https://doi.org/10.3390/ijerph15061147

Tan, G. T. H., Shahwan, S., Goh, C. M. J., Ong, W. J., Wei, K.-C., Verma, S. K., Chong, S. A., & Subramaniam, M. (2020). Mental illness stigma's reasons and determinants (MISReaD) among Singapore's lay public - a qualitative inquiry. *BMC Psychiatry*, *20*(1), 422-422. https://doi.org/10.1186/s12888-020-02823-6

Thomas, S. J., Caputi, P., & Wilson, C. J. (2014). Specific Attitudes Which Predict Psychology Students' Intentions to Seek Help for Psychological Distress. *Journal of clinical psychology*, *70*(3), 273-282. https://doi.org/10.1002/jclp.22022

Tucker, J. R., Hammer, J. H., Vogel, D. L., Bitman, R. L., Wade, N. G., & Maier, E. J. (2013). Disentangling Self-Stigma: Are Mental Illness and Help-Seeking Self-Stigmas Different? *Journal of counseling psychology*, *60*(4), 520-531. https://doi.org/10.1037/a0033555

Vogel, D. L., Bitman, R. L., Hammer, J. H., & Wade, N. G. (2013). Is Stigma Internalized? The Longitudinal Impact of Public Stigma on Self-Stigma. *Journal of counseling psychology*, *60*(2), 311-316. https://doi.org/10.1037/a0031889

Vogel, D. L., Wade, N. G., & Haake, S. (2006). Measuring the Self-Stigma Associated With Seeking Psychological Help. *Journal of counseling psychology*, *53*(3), 325-337. https://doi.org/10.1037/0022-0167.53.3.325

Wallin, E., Maathz, P., Parling, T., & Hursti, T. (2018). Self-stigma and the intention to seek psychological help online compared to face-to-face. *Journal of clinical psychology*, *74*(7), 1207-1218. https://doi.org/10.1002/jclp.22583

Wang, X., Joyce, N., & Namkoong, K. (2020). Investigating College Students' Intentions to Seek Online Counseling Services. *Communication studies*, *71*(4), 550-567. https://doi.org/10.1080/10510974.2020.1750448

Wilson, C. J., Deane, F. P., Ciarrochi, J., & Rickwood, D. (2005). Measuring Help-Seeking Intentions: Properties of the General Help Seeking Questionnaire. *Canadian journal of counselling*, *39*(1), 15-28.

Wong, D. F. K., Xuesong, H., Poon, A., & Lam, A. Y. K. (2011). Depression literacy among Chinese in Shanghai, China: a comparison with Chinese-speaking Australians in Melbourne and Chinese in Hong Kong. *Social Psychiatry and Psychiatric Epidemiology*, *47*(8), 1235-1242. https://doi.org/10.1007/s00127-011-0430-4

Wong, E. C., Collins, R. L., Cerully, J. L., Yu, J. W., & Seelam, R. (2018). Effects of contact-based mental illness stigma reduction programs: age, gender, and Asian, Latino, and

White American differences. *Social Psychiatry and Psychiatric Epidemiology*, *53*(3), 299-308. https://doi.org/10.1007/s00127-017-1459-9

Wong, F. K. D., Lam, Y. K. A., & Poon, A. (2010). Depression literacy among Australians of Chinese-speaking background in Melbourne, Australia. *BMC Psychiatry*, *10*(1), 7. https://doi.org/10.1186/1471-244X-10-7

Xiong, W., Quinney, B., King, D. L., Ali, K., Radunz, M., Zhao, Y., Kyrios, M., & Fassnacht, D. B. (2025). The acculturation challenge: A longitudinal investigation of acculturative stress and mental health of Chinese international students in Australia. *Journal of Affective Disorders*, *374*, 477-485. https://doi.org/10.1016/j.jad.2025.01.082

Yang, L. H., Purdie-Vaughns, V., Kotabe, H., Link, B. G., Saw, A., Wong, G., & Phelan, J. C. (2013). Culture, threat, and mental illness stigma: Identifying culture-specific threat among Chinese-American groups. *Social Science & Medicine*, *88*, 56-67. https://doi.org/10.1016/j.socscimed.2013.03.036

Yee, T., Ceballos, P., & Lawless, A. (2020). Help-Seeking Attitudes of Chinese Americans and Chinese Immigrants in the United States: The Mediating Role of Self-Stigma. *Journal of Multicultural Counseling and Development*, *48*(1), 30-43. https://doi.org/10.1002/jmcd.12162

Yin, H., Wardenaar, K. J., Xu, G., Tian, H., & Schoevers, R. A. (2020). Mental health stigma and mental health knowledge in Chinese population: a cross-sectional study. *BMC Psychiatry*, *20*(1), 323. https://doi.org/10.1186/s12888-020-02705-x

Young, D. K.-W., & Ng, P. Y.-N. (2016). The prevalence and predictors of self-stigma of individuals with mental health illness in two Chinese cities. *International journal of social psychiatry*, *62*(2), 176-185. https://doi.org/10.1177/0020764015614596

Zeng, F., John, W. C. M., Qiao, D., & Sun, X. (2023). Association between psychological distress and mental help-seeking intentions in international students of national university of Singapore: a mediation analysis of mental health literacy. *BMC Public Health*, *23*(1), 2358-2358. https://doi.org/10.1186/s12889-023-17346-4

Zhou, X., Zhou, A. Q., & Sun, X. (2022). Prevalence of common mental concerns and service utilization among international students studying in the U.S. . *Counselling psychology quarterly*, *35*(3), 483-502. https://doi.org/10.1080/09515070.2021.1875400

Zhuang, X. Y., Wong, D. F. K., Ng, T. K., & Poon, A. (2020). Effectiveness of Mental Health First Aid for Chinese-Speaking International Students in Melbourne. *Research on Social Work Practice*, *30*(3), 275-287. https://doi.org/10.1177/1049731519890398

Table 1

Demographic characteristics of the participants overall, and by time in Australia.

Variable	Total (*N*=268)		Less than 1 year in Australia (*N*=80)		1-4 years in Australia (*N*=112)		4+years in Australia (*N*=76)		Significance statistics
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	
Age (years)	24.27	4.10	24.10	3.81	24.70	4.25	23.82	4.17	*F*=1.14
	n	%	*n*	%	*n*	%	*n*	%	
Gender									χ^2=2.24
Male	95	35.4	32	40.0	34	30.4	29	38.2	
Female	173	64.6	48	60.0	78	69.6	47	61.8	
Student status									**χ^2=13.77****
Domestic	95	35.4	22	27.5	33	29.5	40	52.6	
International	173	64.6	58	72.5	79	70.5	36	47.4	
Year of study									**χ^2=37.10****
1st year	56	20.9	24	30.0	9	8.0	23	30.2	
2nd year	110	41.0	41	51.2	53	47.3	16	21.1	
3rd year or above	102	38.1	15	18.8	50	44.6	37	48.7	
English proficiency									**χ^2=16.91****
Good	217	81.0	57	71.3	87	77.7	73	96.1	
Not good	51	19.0	23	28.7	25	22.3	3	3.9	
Self-reported mental ill-health									χ^2=0.01
No	78	29.1	23	28.7	33	29.5	22	28.9	
Yes	190	70.9	57	71.3	79	70.5	54	71.1	
Previously sought help									χ^2=2.31
No	30	11.2	8	10.0	10	8.9	12	15.8	

Yes	238	88.8	72	90.0	102	91.1	64	84.2	
Language used in survey									χ^2=3.65
English	112	41.8	28	35.0	46	41.1	38	50.0	
Chinese	156	58.2	52	65.0	66	58.9	38	50.0	

Note. M=mean; SD= standard deviation. Significant statistical differences are indicated by ** p< 0.001. *p< 0.05, two-tailed, p values < 0.05 are indicated in bold.

Table 2

Demographics associated with help-seeking intentions for face-to-face and online mental health support.

Variable	Face-to-face					Online				
	Low intention (N=62)		High Intention (N=206)		Significance statistics	Low intention (N=77)		High Intention (N=191)		Significance statistics
	M	*SD*	*M*	*SD*		*M*	*SD*	*M*	*SD*	
Age(years)	26.7	4.94	23.5	3.51	***t*=4.71****	26.1	4.56	23.5	3.67	***t*=4.81****
	n	%	*n*	%		*n*	%	*n*	%	
Gender					**χ^2=11.14****					χ^2=1.09
Male	33	53.2	62	30.1		31	40.3	64	33.5	
Female	29	46.8	144	69.9		46	59.7	127	66.5	
Student status					**χ^2=41.89****					**χ^2=24.96****
Domestic	43	69.4	52	25.2		45	58.4	50	26.2	
International	19	30.6	154	74.8		32	41.6	141	73.8	
Years in Australia					**χ^2=10.24***					**χ^2=18.09****
<1 year	25	40.3	55	26.7		36	46.8	44	23.0	

1-4 years	29	46.8	83	40.3		30	39.0	82	42.9	
4+ years	8	12.9	68	33.0		11	14.3	65	34.0	
Degree					χ^2=2.01					**χ^2=5.82***
Undergraduate	24	38.7	101	49.0		27	35.1	98	51.3	
Higher degree	38	61.3	105	51.0		50	64.9	93	48.7	
Year of study					χ^2=2.23					χ^2=1.87
1st year	9	14.5	47	22.8		20	26.0	36	18.8	
2nd year	29	46.8	81	39.3		31	40.3	79	41.4	
3rd year or above	24	38.7	78	37.9		26	33.8	76	39.8	
English proficiency					χ^2=2.40					χ^2=3.38
Good	46	74.2	171	83		57	74.0	160	83.8	
Not good	16	25.8	35	17		20	26.0	31	16.2	
Self-reported mental ill-health					**χ^2=8.32***					χ^2=2.59
No	9	14.5	69	33.5		17	22.1	61	31.9	
Yes	53	85.5	137	66.5		60	77.9	130	68.1	
Previously sought help					χ^2=1.83					**χ^2=5.79***
No	4	6.5	26	12.6		3	3.9	27	14.1	
Yes	58	93.5	180	87.4		74	96.1	164	85.9	
Language used in survey					χ^2=**22.33****					χ^2=1.74
English	42	67.7	70	34.0		37	48.1	75	39.3	
Chinese	20	32.3	136	66.0		40	51.9	156	60.7	

Note. M=mean; SD= standard deviation. ** p< 0.01, *p< 0.05, two-tailed, p values < 0.05 are indicated in bold.

Table 3

Unadjusted and adjusted analysis of mental health knowledge and stigma measures on help-seeking intentions for face-to-face and online support.

Variable	Face-to-face							Online						
	Low intention (*N*=62)		High intention (*N*=206)		Unadjusted bivariate comparison	Demographic factors adjusted comparison (*N*=268)		Low intention (*N*=77)		high intention (*N*=191)		Unadjusted bivariate comparison	Demographic factors adjusted comparison (*N*=268)	
	M	*SD*	*M*	*SD*	*t*	*OR*	95% CI	*M*	*SD*	*M*	*SD*	*t*	*OR*	95% CI
MAKS	37.15	5.71	44.39	6.31	**-8.09****	**1.11****	1.05,1.18	39.22	7.02	44.12	6.32	**-5.32****	**1.06***	1.01,1.12
SDS	11.47	2.95	9.76	4.25	**3.59****	**0.91***	0.82,0.99	11.23	3.36	9.72	4.22	**3.10****	0.93	0.85,1.00
SSOMI	3.10	0.39	3.23	0.76	-1.78	1.15	0.66,2.00	3.13	.57	3.23	0.73	-1.19	1.11	0.70,1.76
SSOSH	29.19	4.32	24.84	5.39	**6.54****	**0.91***	0.83,0.98	27.91	4.82	25.02	5.51	**4.26****	0.95	0.89,1.02
SSRPH	6.45	1.83	5.19	3.23	**3.91****	0.93	0.83,1.05	5.88	2.52	5.32	3.18	1.39	0.99	0.89,1.10

Note. MAKS= mental health knowledge; SDS= mental illness personal stigma; SSOMI= mental illness self-stigma; SSOSH=help-seeking self-stigma; SSRPH= help-seeking personal stigma; OR= odds ratio; CI= confidence interval. ** $p < 0.01$, * $p < 0.05$, two-tailed, p values < 0.05 are indicated in bold. Multivariate (adjusted) comparison of low (reference) versus high help-seeking intention students: Odds ratios (logistic regression), adjusted for age, gender, student status, English proficiency, self-reported mental health status, prior help seeking experience, and years in Australia.

Table 4A

Hierarchical logistic regression analysis on help-seeking intentions for face-to-face support.

Variables	Step 1 (*N*=268)		Step 2 (*N*=268)		Step 3 (*N*=268)		Step 4 (*N*=268)	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Age	**0.90***	0.83, 0.97	0.93	0.85, 1.01	0.94	0.85, 1.02	0.94	0.85, 1.03
Female	**1.97***	1.00, 3.85	**2.31***	1.12, 4.77	1.73	0.84, 3.59	1.88	0.88, 4.02
International student	**5.39****	2.61, 11.15	**9.16****	3.97, 21.13	**3.42***	1.49, 7.85	**4.03***	1.63, 10.00
English proficiency (not good)	**0.33***	0.14, 0.79	0.46	0.19, 1.12	0.41	0.17, 1.01	0.52	0.21, 1.29
Mental ill-health	0.66	0.28, 1.56	0.70	0.29, 1.69	0.67	0.25, 1.77	0.75	0.28, 2.00
Previously sought help	0.84	0.25, 2.84	1.09	0.32, 3.69	1.35	0.38, 4.80	1.59	0.45, 5.62
Years in Australia								
< 1 year			1.00				1.00	
1-4 years			1.42	0.65, 3.10			1.82	0.78, 4.24
4+ years			**7.94***	2.70, 23.29			**4.49***	1.48, 13.64
MAKS					**1.10***	1.04, 1.17	**1.10***	1.03, 1.17
SDS					**0.89***	0.80, 0.98	0.91	0.82, 1.01
SSOSH					0.94	0.86, 1.02	0.94	0.86, 1.03
Constant	**29.59***		3.20		3.47		0.81	

Note. MAKS= mental health knowledge; SDS= mental illness personal stigma; SSOSH=help-seeking self-stigma; OR= odds ratio; CI= confidence interval.

** $p < 0.01$, * $p < 0.05$, two-tailed, p values < 0.05 are indicated in bold.

Table 4B

Hierarchical logistic regression analysis for help-seeking intentions for online support.

Variables	Step 1 (*N*=268)		Step 2 (*N*=268)		Step 3 (*N*=268)		Step 4 (*N*=268)	
	OR	95% CI	*OR*	95% CI	*OR*	95% CI	*OR*	95% CI
Age	**0.90***	0.83, 0.97	**0.91***	0.84, 0.99	**0.92***	0.85, 0.99	**0.92***	0.85, 1.00
Female	0.99	0.53, 1.86	0.97	0.50, 1.88	0.90	0.47, 1.73	0.87	0.44, 1.71
International student	**3.40****	1.79, 6.47	**5.32****	2.52, 11.22	**2.79***	1.38, 5.62	**3.67****	1.66, 8.13
English proficiency (not good)	**0.37***	0.18, 0.77	0.34	0.13, 0.86	**0.42***	0.20, 0.88	0.52	0.24, 1.14
Mental ill-health	1.07	0.53,2.15	0.50	0.23, 1.08	1.01	0.48, 2.14	1.10	0.51, 2.38
Previously sought help	0.33	0.09, 1.17	0.39	0.11, 1.44	0.39	011, 1.41	0.44	0.12, 1.61
Years in Australia								
< 1 year			1.00				1.00	
1-4 years			**2.97***	1.46, 6.04			**3.40***	1.62, 7.14
4+ years			**7.69****	3.04, 19.45			**5.52***	2.27, 14.05
MAKS					**1.06***	1.01, 1.11	**1.06***	1.00, 1.12
SDS					**0.91***	0.84,0.99	0.94	0.86, 1.02
Constant	**57.67****		8.90		8.40		1.61	

Note. MAKS= mental health knowledge; SDS= mental illness personal stigma; OR= odds ratio; CI= confidence interval.

** $p < 0.01$, * $p < 0.05$, two-tailed, p values < 0.05 are indicated in bold.

Supplementary Table 1

Variance inflation factor (VIF) statistics for mental health-related variables in the logistic regression models

Variable	**Face-to-face intention (*N=268*)**		**Online intention (*N=268*)**	
	Tolerance (1/VIF)	VIF	Tolerance(1/VIF)	VIF
MAKS	0.72	1.40	0.72	1.40
SDS	0.92	1.08	0.92	1.08
SSOMI	0.90	1.11	0.90	1.11
SSOSH	0.66	1.52	0.66	1.52
SSRPH	0.84	1.20	0.84	1.20
Mean VIF	-	1.26	-	1.26

Note. MAKS= mental health knowledge; SDS= mental illness personal stigma; SSOMI= mental illness self-stigma; SSOSH=help-seeking self-stigma; SSRPH= help-seeking personal stigma; VIF= variance inflation factor

Supplementary Table 2

Exploratory factor analysis of stigma measures (SDS, SSOMI, SSOSH and SSRPH)

Item	Pattern coefficients						Structure coefficients					
	Components						Components					
	1	2	3	4	5	6	1	2	3	4	5	6
SSOSH_8	**0.84**						**0.87**				0.41	
SSOSH_6	**0.78**						**0.88**				0.49	
SSOSH_1	**0.73**						**0.81**				0.43	
SSOSH_3	**0.66**						**0.80**				0.48	
SSOSH_4	-0.53						**-0.60**				-0.44	
SSRPH_2	0.47				0.35		**0.60**				0.53	
SSOSH_10	0.37		0.33				0.32		0.46			
SDS_1		**0.76**						**0.74**				
SDS_3		**0.74**						**0.75**				0.32
SDS_7		**0.72**						**0.73**				
SDS_5		**0.68**						**0.67**				
SDS_6		**0.64**						**0.67**				0.32
SDS_2		**0.62**						**0.66**				0.34
SDS_4		0.45					-0.43	0.42			-0.32	
SSOMI_6			**0.82**						**0.81**			
SSOMI_4			**0.76**						**0.78**			
SSOMI_10			**0.72**						**0.79**	-0.31		
SSOMI_3			**0.67**						**0.64**			
SSOMI_1			**0.66**						**0.69**			
SSOMI_8			**0.63**						**0.68**			
SSOMI_9				**-0.71**						**-0.73**		
SSOMI_2				**-0.68**						**-0.73**		
SSOMI_5				**-0.68**						**-0.70**		
SSOMI_7				-0.57						**-0.63**		0.33
SSRPH_3					**0.80**						**0.76**	
SSRPH_5					**0.70**		0.43				**0.77**	
SSRPH_4					**0.66**		0.35				**0.66**	
SSRPH_1					**0.60**		0.40	-0.33			**0.69**	
SSOSH_5						**0.69**				-0.36		**0.69**
SSOSH_9						0.57				-0.31		**0.69**
SSOSH_7						0.55	0.40					**0.71**

SSOSH_2	0.39	0.53

Note : Factor loadings above 0.60/-0.60 appear in bold, and are considered large loadings; factor loadings above 0.30 / - 0.30 are considered significant. MAKS= mental health knowledge; SDS= mental illness personal stigma; SSOMI= mental illness self-stigma; SSOSH=help-seeking self-stigma; SSRPH= help-seeking personal stigma.

Certain items loaded on different factors, suggesting multidimensional associations. For instance, items SSOSH_6, SSOSH_3, and SSOSH_1 loaded significantly on factors 1, 3, and 5. This overlap pattern is also observed in other items, reflecting the complexity of the stigma constructs being measured. However, the pattern coefficients suggest that these measures were able to distinguish between different dimensions of stigma. For instance, SSOSH _3, 6, 8, 1 have large positive loadings on factor 1, the SDS_1,2,3,5,6, 7 have large positive loadings on factor 2, the SSOMI_1, 3, 4,6,8, 10 have large positive loadings on factor 3 and large negative loadings (SSOMI_2,5,7,9) on factor 4, SSRPH_1,3, 4, 5 have large positive loadings on factor 5, SSOSH_5 have large positive loading on Factor 6, indicating a secondary dimension within this scale. indicating a high degree of discriminant validity among the measures. Thus, despite some items having overlapping relationships with various factors, the stigma measures used captured distinct constructs of stigma and were appropriate in our study