

Psychological Flourishing of Postgraduate Students in Klang Valley, Malaysia

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Across the world including Malaysia, the rate of mental health issues has become increasingly concerning especially among young adults. However, much is still unknown about the psychological flourishing of postgraduate students despite the steady increase in student enrolments into postgraduate programmes as Malaysia anticipates the emergence of a skilled talent pool to advance the nation's economic growth. Thus, this quantitative study explored the psychological flourishing of Malaysian postgraduate students in Klang Valley by examining whether there are significant differences based on their sociodemographic characteristics. A total of 240 postgraduate students participated in this study and completed a set of questionnaires online that measured their psychological flourishing and demographic characteristics. The results showed that there were significant differences in the psychological flourishing of postgraduate students based on their age group and field of study. However, this study did not find any significant differences in postgraduate students' level of psychological flourishing based on their gender, ethnicity, level of postgraduate programme, the structure of programme, mode of programme, and year of programme. The findings of this study had several practical implications for postgraduate students, faculty members, and on-campus counsellors. Finally, the limitations of this study and recommendations for future studies are also addressed.

Keywords: flourishing, psychological well-being, postgraduate students, demographic

Mental health issues have been recognised as an increasing problem worldwide, as reflected in many intergovernmental and national policy initiatives (World Health Organization, 2001; Patel et al., 2018; Xiong et al., 2020). In Malaysia, the Malaysian Ministry of Health has also reported that there is a rising trend of mental health problems among adolescents and adults over the last decade (Institute for Public Health [IPH], 2015, 2020). Likewise, it is not surprising that many

studies have revealed that a significant proportion of university students in Malaysia are also experiencing some degree of psychological distress, and even more so in the ongoing COVID-19 pandemic (Chan, Lam, Seevalingam, Rajandram, & Kuppusamy, 2022; Fata Nahas, Elkalmi, Al-Shami, & Elsayed, 2019; Kotera, Ting, & Neary, 2021; Moy & Ng, 2021).

While the mental health of university students in Malaysia has been widely

researched on over the recent decade, most studies have centred on the undergraduate student population. Postgraduate students remain largely underrepresented in previous studies despite a steady increase in enrolments of students in masters and doctoral programmes across Malaysia (Ministry of Higher Education, 2011; Ministry of Education Malaysia, 2018). In response to the changing global economy that increasingly requires the expertise of a skilled workforce, the Ministry of Education (2015) anticipates the emergence of 60,000 PhD graduates by 2023 to form a skilled talent pool which will propel the nation towards a knowledge-based economy and a high-income status (Azman et al., 2016; Symaco & Wan, 2017). However, heavy investment in offering scholarships to postgraduate students does not necessarily establish a talent pool and translate into tangible economic growth if their mental health is not taken into serious consideration.

For many postgraduate students, it is not uncommon for them to encounter various problems during their candidature through contexts of postgraduate training and research work, managing relationship with supervisors and academic peers within the scholarly community, as well as maintaining work-life balance (Barry, Woods, Warnecke, Stirling, & Martin, 2018; Pyhältö, Toom, Stubb, & Lonka, 2012). Managing the complex demands of academia and many personal responsibilities during candidature can be overwhelming for some postgraduate students, which exposes them to additional psychological distress, emotional exhaustion, and burnout from extreme workloads (Beasy, Emery, & Crawford, 2019; Cornér, Löfström, & Pyhältö, 2017; Hunter & Devine, 2016; Schmidt & Hansson, 2018). Many studies have shown that high levels of stress and anxiety can be detrimental to the success of postgraduate students as they are less likely to be motivated and productive, tend to produce lower quality of work, and are more likely

to quit their candidacy (Castelló, Pardo, Sala-Bubaré, & Suñe-Soler, 2017; Hunter & Devine, 2016; Pyhältö et al., 2012; Russell-Pinson & Harris, 2019).

In the context of Malaysia, only a handful of studies have specifically focused on postgraduate students' psychological well-being and mental health. Panahi, Yunus, and Roslan (2013) utilised Ryff's (1989) Psychological Well-being Scale to measure the psychological well-being of 534 graduate students from a university in Malaysia. They found that there were significant differences in overall psychological well-being among graduate students in terms of their faculty, age group, semester of study, and gender (Panahi et al., 2013). Specifically, postgraduate students in the engineering faculty had the lowest level of overall psychological well-being whereas those from the science faculty had the highest level of overall psychological well-being. In addition, they reported that students in the age group between 34 and 38 had higher overall psychological well-being than those who are in the 19-23 age group at a marginally significant level of $p = .50$. Their results also reported that first semester students had significantly greater overall psychological well-being than second semester students. Female students also reported significantly greater overall psychological well-being than male students in their study (Panahi et al., 2013). In another study by Roslan, Ahmad, Nabilla, and Ghiami (2017) on 192 postgraduate students who were pursuing their Master of Education, they found that students who were in the age group of 41 years old and above had the highest level of psychological well-being than those who were in the age groups of 36-40, 31-35, 26-30, as well as 25 and below.

Focussing on negative aspects of mental health, another study by Vasugi and Che Hassan (2019) surveyed 179 postgraduate students from a faculty of education in one university and found that majority of the respondents in their study were

experiencing moderate levels of depression (37%), anxiety (29.1%), and stress (60.9%). In their study, they also did not find any significant differences among postgraduate students in terms of their gender, marital status, and age (Vasugi & Che Hassan, 2019). Meanwhile, Ahmed, Bustam, and Yousif (2020) surveyed work-related stress levels of 140 postgraduate students across two academic emergency medicine centres in Malaysia, in which they found that 49.3% of the respondents were experiencing stress at concerning levels that could lead to possible significant mental health problems. In addition, Ahmed et al. (2020) also found that younger postgraduate students (aged 30-35) had higher levels of stress than older students (aged 36-40) in their study.

However, research on psychological flourishing within the context of postgraduate students in Malaysia remains limited. Over the years, the study of well-being has largely concentrated on two perspectives of well-being: hedonic and eudaimonic (Ryan & Deci, 2001). The hedonic approach emphasises on people's subjective evaluation of their life in terms of life satisfaction, positive affect, and negative affect, whereas the eudaimonic approach focuses on the qualities necessary for people to reach their full potential and lead a fulfilling life (Tov, 2018). In recent years, the concept of psychological flourishing has emerged to bridge the gap between both hedonic and eudaimonic views of well-being by including a broader range of concepts relating to one's psychological success. Diener et al.'s (2009) conceptualised the term 'psychological flourishing' as an individual's self-perceived success across several areas of positive social-psychological functioning. These aspects of psychological flourishing include: (1) supportive and rewarding relationships; (2) contributing to the happiness of others; (3) being respected by others; (4) having meaning and purpose in life; (5) being engaged in one's activities; (6) having self-

acceptance; (7) having optimism; as well as (8) feeling competent and capable in activities that are considered important to the self (Diener et al., 2010). Thus, psychological flourishing recognises that an individual's optimal well-being comprises of aspects from social and psychological well-being.

Previous studies have identified several sociodemographic factors associated with psychological flourishing, although the results have been mixed across different populations. For example, Howell and Buro (2014) found that females have significantly greater psychological flourishing than males in a sample of undergraduate Canadian students. However, Momtaz, Hamid, Haron, and Bagat (2016) found that psychological flourishing is significantly higher for older males than older females in a sample of community-dwelling older Malaysian adults. Meanwhile, other studies did not find any significant differences in psychological flourishing between gender (Tey, Park, & Golden, 2017; Villieux, Sovet, Jung, and Guilbert, 2016). With regards to age, Villieux et al., (2016) found that younger students have significantly higher psychological flourishing than older students in a sample of undergraduate students in France, while other studies did not find any association between age and psychological flourishing (Howell & Buro, 2014; Momtax et al., 2016).

Meanwhile, it still remains unclear whether other sociodemographic factors such as ethnicity, level of postgraduate programme, structure of programme, field of study, mode of programme, and year of programme are associated with psychological flourishing. Given that previous research focusing on mental health conditions and various measures of well-being have identified group differences across these sociodemographic factors, it could be possible that differences in psychological flourishing based on these sociodemographic factors might exist. For

example, two studies have found that Malay students tend to be more affected by anxiety and stress than other ethnic groups (Chan et al., 2022; Gan & Hue, 2019) whereas Irfan, Shahudin, Hooper, Akram, and Ghani (2020) found that the Chinese students have greater odds of having higher level of anxiety as compared to students from other ethnic groups in Malaysia. In terms of postgraduate level, past studies have found that doctoral level is associated with higher psychological well-being (Akhtar & Kroener-Herwig, 2019) as well as doctoral students have significantly lower levels of depression and anxiety as compared to degree students (Ruiz-Hernández, Guillén, Pina, & Puente-López, 2022). Meanwhile, significant group differences in various measures of well-being and mental health conditions were also found across different postgraduate structure (Sverdlik & Hall, 2019), fields of study (Chattu et al., 2020), mode of study (Yusuf, Saitgalina, & Chapman, 2020), and year of programme (Liu et al., 2019).

Despite the widespread prevalence of mental health issues in Malaysia as well as its wide-ranging implications on postgraduate students' productivity and the future of Malaysia's economic growth, there is still a gap in research on examining the level of psychological flourishing among postgraduate students in Malaysia. Investigating whether sociodemographic factors could influence the psychological flourishing of postgraduate students is important as the findings would carry practical significance that are relevant for promoting psychological flourishing among postgraduate students as well as the improving student services offered by faculty members and on-campus counsellors. Thus, the overall objective of this study is to add to this body of knowledge on well-being and mental health among postgraduate students by investigating whether there are significant differences in postgraduate students' level of psychological flourishing based on their sociodemographic factors. Specifically,

this study examines whether the psychological flourishing of postgraduate students in the region of Klang Valley would differ in terms of their gender, age group, ethnicity, level of postgraduate programme, structure of programme, field of study, mode of programme, and year of programme.

Method

Participants

A convenience (non-probability) sampling method was used to recruit potential participants by them via various postgraduate societies and social media platforms using online communication tools. Using this method allows easier access to the target population of this study, which are postgraduate students residing within the Klang Valley region, which is the most developed and industrialised region in Malaysia. The region of Klang Valley was also selected because the prevalence of mental health issues was higher than the national average prevalence rate of 29.2% (IPH, 2015).

In this study, a total of 286 respondents have completed the survey, but only 240 respondents were included in the final analysis after removing the cases that were found to be outliers and did not fulfil the inclusion criteria of this study. Outliers were identified by examining whether the standardised scores of psychological flourishing exceed the value of 3.29, whereas invalid responses were classified as not fulfilling the inclusion criteria, which required participants to be of 18 years of age and above, currently pursuing postgraduate studies in Malaysia, primarily residing in Klang Valley, and comfortable answering questions in English. Thus, cases were removed as these respondents were not currently living in Klang Valley, provided a uniform pattern in their responses, identified as non-Malaysian

based on their primary spoken language, and have already completed their postgraduate studies.

Instruments

Demographics

The demographic questionnaire contained questions that asked respondents for their gender, age range, ethnicity, primary languages spoken at home, current state of residence, current university, level of postgraduate programme, structure of programme, primary field of study, mode of programme, year of programme, and anticipated year of graduation.

Psychological flourishing

The Flourishing Scale (FS; Diener et al., 2010) was used to measure psychological flourishing, which contains only 8 items that are rated on a 7-point Likert scale, ranging from 1 (Strong Disagreement) to 7 (Strong Agreement). The scale is scored by summing all items with the possible range from 8 to 56, whereby a higher score implies that the respondents view themselves positively in important areas of psychological functioning (Diener et al., 2009, 2010). Diener et al. (2009, 2010) noted that this brief FS does not specifically assess every facet of psychological flourishing, but the scale provides an “overview of positive functioning across various domains that are widely believed to be important” (Diener et al., 2010, p. 146). The psychometric properties of the FS have been established with adequate reliability and convergent validity (Diener et al., 2009, 2010). In Malaysia, the FS has been used in several studies, such that it has demonstrated good internal consistency ranging from $\alpha = .90$ in a sample of Malaysian Muslim adults (Tey et al., 2017) to $\alpha = .95$ in a sample of community-dwelling older Malaysian adults (Momtaz et al., 2016). The FS has a high internal consistency of $\alpha = .87$ in this study.

Procedure

This study collected data via a questionnaire which was hosted on SoGoSurvey, an online survey website. A hyperlink to the questionnaire was distributed via online communication platforms to recruit potential participants in this study. After potential participants received and opened the hyperlink, they were directed to the survey questionnaire. The participants were asked to complete a set of questionnaires online that measured their psychological flourishing along with their demographic details, which have received ethical approval from the University of Malaya Research Ethics Committee (UM.TNC2/UMREC-473). Data was collected for four months from 22nd January 2020 to 21st April 2020 before it was processed and cleaned for data analysis.

Results

The descriptive statistics of the sample participants based on their sociodemographic characteristics are presented in Table 1.

In this study, an alpha level of .05 was used for all *t*-tests and ANOVA. In addition, all *t*-tests and ANOVA have used the bias-corrected accelerated (BCa) bootstrapping approach to obtain a BCa 95% confidence interval with 5000 bootstrap samples. This BCa bootstrapping approach was chosen as it produces bootstrap confidence intervals with higher accuracy and it has substantially superior properties than the percentile bootstrap method (DiCiccio & Efron, 1996; Efron, 1987; Field, 2018). The means and standard deviations of psychological flourishing scores based on sociodemographic characteristics of the sample in this study are presented in Table 2.

The first independent samples *t*-test was conducted using SPSS® 26.0.0 to compare the mean scores of psychological flourishing between male and female postgraduate students (the two participants who did not mention their gender were not included in this comparison analysis). The results showed that male postgraduate students ($M = 45.15, SD = 7.11$) have higher levels of psychological flourishing than female postgraduate students ($M = 44.48, SD = 6.42$). However, this mean difference of 0.67, BCa 95% confidence interval [-1.27, 2.52], was not significant, $t(236) = .702, p = .484$ with equal variances assumed, Cohen’s $d = .101$. These results suggest that gender has no significant effect on postgraduate students’ level of psychological flourishing, hence there is no significant differences between male and female postgraduate students in terms of their psychological flourishing.

Another independent samples *t*-test was also conducted to compare the mean scores of psychological flourishing between Masters and PhD students. The results showed that Masters students ($M = 44.14, SD = 7.07$) have lower levels of psychological flourishing than PhD students ($M = 45.41, SD = 5.82$). However, this mean difference of -1.27, BCa 95% confidence interval [-2.88, .36], was not significant, $t(234.205) = -1.522, p = .129$ with equal variances not assumed, Cohen’s $d = -.196$. These results suggest that the level of postgraduate programme has no significant effect on postgraduate students’ level of psychological flourishing, hence there is no significant differences between Masters and PhD postgraduate students in terms of their psychological flourishing.

Table 1

Sociodemographic characteristics of the sample ($N = 240$)

Sociodemographic Variable	Frequency	Percent
Gender		
Male	67	27.9
Female	171	71.3
Prefer not to answer	2	.8
Age		
18 – 24 years	24	10.0
25 – 34 years	142	59.2
35 – 44 years	55	22.9
45 and above	19	7.9
Ethnicity		
Malay	107	44.6
Chinese	90	37.5
Indian	28	11.7
Others	15	6.3
Level of Postgraduate Programme		
Masters	139	57.9
Doctoral	101	42.1
Structure of Programme		
Research mode	123	51.2
Mixed mode (Coursework + Research)	117	48.8

Field of Study	15	6.3
Arts & Humanities	16	6.7
Engineering, Manufacturing & Construction	52	21.7
Education	43	17.9
Health & Welfare	42	17.5
Science, Mathematics & Computing	72	30.0
Social Sciences, Business, & Law		
Mode of Programme		
Full-time	180	75.0
Part-time	60	25.0
Year of Programme		
1st year	63	26.3
2nd year	91	37.9
3rd year	42	17.5
4th year	26	10.8
5th year and above	18	7.5

The third independent samples *t*-test was conducted to compare the mean scores of psychological flourishing between postgraduate students who took the research mode and those who took the mixed mode (coursework and research) in their programme. The results showed that research mode postgraduate students ($M = 44.13, SD = 6.96$) have lower levels of psychological flourishing than mixed mode postgraduate students ($M = 45.24, SD = 6.16$). However, this mean difference of -

1.11, BCa 95% confidence interval [-2.76, .51], was not significant, $t(238) = -1.305, p = .193$ with equal variances assumed, Cohen's $d = -.169$. These results suggest that the structure of postgraduate programmes has no significant effect on postgraduate students' level of psychological flourishing, hence there is no significant differences in psychological flourishing between postgraduate students who took the research mode and those who took the mixed mode in their programme.

Table 2

Minimum, maximum, means, and standard deviations of psychological flourishing scores based on sociodemographic characteristics of the sample ($N = 240$)

Sociodemographic Variable	Minimum	Maximum	Mean	± SD
Gender				
Male	26.00	56.00	45.15	7.11
Female	26.00	56.00	44.48	6.42
Prefer not to answer	43.00	47.00	45.00	2.83
Age				
18 – 24 years	27.00	55.00	41.71	8.19
25 – 34 years	26.00	56.00	43.69	6.57
35 – 44 years	34.00	56.00	46.64	4.88
45 and above	41.00	56.00	50.05	4.50
Ethnicity				

Malay	26.00	56.00	45.07	6.43
Chinese	26.00	56.00	44.30	6.64
Indian	26.00	53.00	43.25	6.59
Others	33.00	56.00	46.73	7.37
Level of Postgraduate Programme				
Masters	26.00	56.00	44.14	7.07
Doctoral	26.00	56.00	45.41	5.82
Structure of Programme				
Research mode	26.00	56.00	44.13	6.96
Mixed mode (Coursework + Research)	26.00	56.00	45.24	6.16
Field of Study				
Arts & Humanities	36.00	55.00	46.87	5.58
Engineering, Manufacturing & Construction	28.00	55.00	43.88	7.19
Education	29.00	56.00	47.14	6.19
Health & Welfare	27.00	54.00	44.95	5.98
Science, Mathematics & Computing	26.00	56.00	41.98	6.60
Social Sciences, Business, & Law	26.00	56.00	44.01	6.71
Mode of Programme				
Full-time	26.00	56.00	44.56	6.81
Part-time	26.00	56.00	45.00	5.92
Year of Programme				
1st year	26.00	56.00	43.22	6.82
2nd year	29.00	56.00	45.46	6.36
3rd year	26.00	56.00	44.86	6.58
4th year	26.00	56.00	44.19	7.49
5th year and above	38.00	55.00	46.00	5.12

Note. SD = Standard Deviation

The fourth independent samples *t*-test was conducted to compare the mean scores of psychological flourishing between full-time postgraduate students and part-time postgraduate students. The results showed that full-time postgraduate students ($M = 44.56$, $SD = 6.81$) have lower levels of psychological flourishing than part-time postgraduate students ($M = 45.00$, $SD = 5.92$). However, this mean difference of $-.44$, BCa 95% confidence interval $[-2.21, 1.35]$, was not significant, $t(238) = -.446$, $p = .656$ with equal variances assumed, Cohen's $d = -.066$. These results suggest that the mode of postgraduate programme has no significant effect on postgraduate students' level of psychological

flourishing, hence there is no significant differences between full-time postgraduate students and part-time postgraduate students in their psychological flourishing.

A one-way independent ANOVA was conducted using SPSS® 26.0.0 to compare the mean scores of psychological flourishing across the four age groups. Given that there were unequal group sizes and the assumption of homogeneity of variance was found to be violated, Welch's *F* was used to adjust the outcomes. The results of Welch's *F* revealed that there is a significant difference in at least one age group on the mean score of psychological flourishing, $F(3,55.126) = 12.468$, $p < .001$.

This effect was represented by a medium effect size, omega-squared (ω^2) = .095. Table 3 below displays the post hoc

comparison data for the four age groups using the Games-Howell test.

Table 3

Games-Howell post hoc comparisons for age range of psychological flourishing based on 5000 bootstrap samples

Comparisons	Mean Difference	Std. Error	BCa 95% Confidence Interval	
			Lower	Upper
18 – 24 years - 25 – 34 years	-1.98	1.75	-5.50	1.51
18 – 24 years - 35 – 44 years	-4.928*	1.80	-8.63	-1.35
18 – 24 years - 45 and above	-8.344***	1.97	-12.34	-4.42
25 – 34 years - 35 – 44 years	-2.946**	0.85	-4.61	-1.29
25 – 34 years - 45 and above	-6.362***	1.16	-8.73	-4.01
35 – 44 years - 45 and above	-3.416*	1.225`	-5.87	-0.86

Note. BCa = Bias-corrected accelerated. * $p < .05$, ** $p < .01$, *** $p < .001$

Post hoc comparisons using the Games-Howell test indicated that the mean score of psychological flourishing for students who are in the age group of 45 and above ($M = 50.05$, $SD = 4.50$) was significantly higher than students who are in the age group of 18-24 years old ($M = 41.71$, $SD = 8.19$), 25-34 years old ($M = 43.69$, $SD = 6.57$), as well as students in the age group of 35-44 years old ($M = 46.64$, $SD = 4.88$). In addition, the Games-Howell post hoc comparisons test also indicated that the mean score of psychological flourishing for students who are in the age group of 35-44 years old ($M = 46.64$, $SD = 4.88$) was significantly higher than students who are in the age group of 18-24 years old ($M = 41.71$, $SD = 8.19$), as well as students in the age group of 25-34 years old ($M = 43.69$, $SD = 6.57$). The remaining comparison, which was between the 25-34 years old group and 18-24 years old group, was found to be not significant ($p > .05$). Overall, these results suggest that age has an effect on the level of psychological flourishing for postgraduate students in this study. Specifically, the results suggest that older

postgraduate students are more likely to report greater psychological flourishing as compared to their younger counterparts.

The second one-way independent ANOVA was conducted to compare the mean scores of psychological flourishing across the four groups of ethnicities. The results of the ANOVA F -ratio test revealed that there were no significant differences across the four ethnic groups on the mean score of psychological flourishing, $F(3,236) = 1.148$, $p = .330$, omega-squared (ω^2) = .002. This suggests that postgraduate students' ethnicity did not have an effect on their level of psychological flourishing, hence their level of psychological flourishing did not differ across the four ethnic groups.

The third one-way independent ANOVA was conducted to compare the mean scores of psychological flourishing across the six fields of study. The results of the ANOVA F -ratio test revealed that there is a significant difference in at least one field of study on the mean score of psychological flourishing, $F(5,234) = 3.579$, $p = .004$.

This effect was represented by a small effect size, omega-squared (ω^2) = .051. Post hoc comparisons using the Tukey's HSD test indicated that the mean score of psychological flourishing for students who are in the field of Education ($M = 47.14$, $SD = 6.19$) was higher than students who are in the fields of Science, Mathematics, and Computing ($M = 41.98$, $SD = 6.60$). This mean difference of 5.16, BCa 95% confidence interval [2.58, 7.74], was significant ($p = .002$) with a large effect size of $d = .809$. The other remaining comparisons were found to be not significant ($p > .05$).

The fourth one-way independent ANOVA was conducted to compare the mean scores of psychological flourishing across the five groups in each year of the programme. The results of the ANOVA F -ratio test revealed that there were no significant differences across the five groups in each year of programme on the mean score of psychological flourishing, $F(4,235) = 1.321$, $p = .263$, omega-squared (ω^2) = .005. This suggests that postgraduate students' current year of their programme did not have an effect on their level of psychological flourishing, hence their level of psychological flourishing did not differ across the five groups according to the year of their programme.

Discussion

The overall purpose of this study is to investigate whether the psychological flourishing of postgraduate students significantly differs in terms of their gender, age group, ethnicity, level of postgraduate programme, structure of programme, field of study, mode of programme, and year of programme. The results from statistical analyses revealed that significant differences in postgraduate students' level of psychological flourishing exists in terms of their age group and field of study. Specifically, the results showed that older postgraduate students have

significantly greater psychological flourishing than their younger counterparts. The results also revealed that students who are in the field of Education have significantly higher psychological flourishing than students who are in the fields of Science, Mathematics, and Computing. No significant differences in psychological flourishing were found for remaining comparisons based on their gender, ethnicity, level of postgraduate programme, structure of programme, mode of programme, and year of programme.

Firstly, the finding that the psychological flourishing of postgraduate students significantly differed in terms of their age group in this study supports the results of Panahi et al. (2013) and Roslan et al. (2017), who have also found that older postgraduate students had greater levels of psychological well-being than younger postgraduate students in their studies. Besides that, this finding is consistent with Ahmed et al.'s (2020) findings, in which they found that younger postgraduate students have higher stress levels than their older counterparts, such that it affects their socio-psychological functioning and ability to experience psychological flourishing. However, the findings of this study did not support Vasugi and Che Hassan's (2019) research, in which they did not find any significant differences in depression, anxiety, and stress among postgraduate students based on their age (Vasugi & Che Hassan, 2019). A possible explanation for the inconsistency of this finding could be attributed to the differences in the measured outcome, in which this study focuses on postgraduate students' psychological flourishing rather than mental health conditions. Another possible explanation could be due to the sampling differences, whereby Vasugi and Che Hassan (2019) recruited postgraduate students within a single faculty whereas the sample of postgraduate students in this study comes from various disciplines.

Secondly, this study found that postgraduate students from the field of Education had significantly higher levels of psychological flourishing than those from the fields of Science, Mathematics, and Computing. One possible explanation for this could be because postgraduate students from the field of Education are actively involved in educating and building relationships with others in educational settings, thus they have greater opportunities to develop their social-psychological functioning. In contrast, postgraduate students in the fields of Science, Mathematics, and Computing typically work with abstract and theoretical knowledge devoid of social interactions, and thus postgraduate students from these fields have fewer opportunities and need for developing their social competencies as compared to those who are in the field of Education. On the other hand, this result also differs from the findings reported by Panahi et al.'s (2013) study, in which science postgraduate students had significantly greater levels of psychological well-being than engineering postgraduate students. This conflicting result could be due to the differences in the target population, in which Panahi et al. recruited students from one Malaysian university whereas postgraduate students in this study are sampled from various universities throughout Klang Valley. It is also possible that the different scales used to measure psychological well-being in Panahi et al.'s study and psychological flourishing in this study could contribute to this discrepancy as well.

Finally, this study did not find significant differences in postgraduate students' level of psychological flourishing based on their gender, ethnicity, level of postgraduate programme, structure of programme, mode of programme, and year of programme. This suggests that these factors do not contribute to the development of psychological flourishing among postgraduate students in this study. In terms

of gender and year of programme, the results of this study did not align with the findings of Panahi et al.'s (2013) study, in which they found that there were significant group differences in psychological well-being among postgraduate students based on their gender and semester of study. This inconsistency of the results could be related to the differences between Panahi et al.'s study and the current study in terms of the sampling of postgraduate student population and measures of the outcome variable. Although the differences between both genders is not significant in this study, the psychological flourishing among male postgraduate students is higher than female postgraduate students, which is consistent with Momtaz et al. (2016) observation in their study that males had greater psychological flourishing than females in a sample of older Malaysian adults. Meanwhile, it is difficult to explain the lack of evidence for detecting significant group differences in psychological flourishing based on postgraduate students' ethnicity, level of postgraduate programme, structure of programme, and mode of programme in this study, which contradicts findings from previous studies (Akhtar & Kroener-Herwig, 2019; Chan et al., 2022; Chattu et al., 2020; Gan & Hue, 2019; Irfan et al., 2020; Liu et al., 2019; Ruiz-Hernández et al., 2022; Sverdlik & Hall, 2019; Yusuf et al., 2020). A possible explanation for this result could be attributed to the fact that postgraduate students across these sociodemographic variables share a common identity as a postgraduate student with similar experiences of academia at the postgraduate level, in which all postgraduate students have equal access to opportunities for cultivating their psychological flourishing.

Based on these findings, there are several practical implications that are relevant for postgraduate students, faculty members, as well as on-campus counsellors. Firstly, the findings of this study suggest that although postgraduate students have comparable

levels of psychological flourishing, students who are in the younger age group and pursuing their postgraduate studies in STEM-related areas are less likely to experience psychological flourishing than other postgraduate students who are older and involved in non-STEM fields. Given that the nature of academia can be highly challenging, these postgraduate students with lower psychological flourishing may experience greater difficulties in managing and fulfilling their responsibilities as a postgraduate student. Thus, prospective and current postgraduate students who belong to the younger age group and enrolled in STEM-related fields should be aware that attaining academic success does not solely rely on one's intellectual abilities, but it is also equally important to focus on enhancing various aspects of their social-psychological functioning.

Another practical implication is relevant for stakeholders who are responsible for managing the affairs of postgraduate students in the university. In particular, faculty members including academic supervisors and administrators should prioritise in providing adequate academic support to postgraduate students who are in the younger age group and enrolled in STEM-related areas of study, especially for those in Science, Mathematics, and Computing. Thus, the allocation of resources can be efficiently managed to ensure that the targeted group of students are better equipped with relevant skills to manage their academic and research workload without affecting their psychological flourishing. Other than that, university counsellors should concentrate on providing regular psychoeducation in various formats and platforms to empower postgraduate students with the psychological strength to cope with their personal challenges and persist throughout their candidature.

A major limitation of the current study is the lack of generalisability of the results to

the wider population due to the usage of convenience sampling method and the language of the questionnaire. As the questionnaire was administered only in English, other postgraduate students may not be inclined to participate in this study due to the language barrier. Hence, the sample in this study may not entirely reflect the wider population of postgraduate students throughout Klang Valley. In addition, the duration of the data collection coincided with the beginning of nationwide lockdown in Malaysia due to the COVID-19 pandemic, which may have affected the psychological flourishing of the participants in this study that was unaccounted for.

Nevertheless, future studies can address this limitation by translating the questionnaire into other main languages used in Malaysia so that participants can complete it in their chosen language. This would not only encourage greater participation from a wider pool of postgraduate students, but also allow more accurate responses to be obtained from the participants. Moreover, using probability sampling methods such as cluster sampling, stratified random sampling, or systematic sampling in future studies would be beneficial for obtaining a sample that closely resembles the identified population. Further studies should include measures of covariates that could affect the impact of sociodemographic characteristics on psychological flourishing due to the ongoing COVID-19 pandemic, which has affected every individual worldwide in varying degrees (Kowal et al., 2020; Lieberoth et al., 2021).

Authors' note

The content of this work is derived from the thesis of the first author for the Doctor of Philosophy degree under the supervision of the second and third author.

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