
REVIEW ARTICLE

Pets and Mental Health Among Postgraduate University Students: A Narrative Review with Implications for Malaysia

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ABSTRACT

Introduction	Postgraduate students experience disproportionately high levels of depression, anxiety, and stress compared to undergraduate peers and the general population. Pets are increasingly recognised as potential sources of psychosocial support, yet their role in shaping student wellbeing within Asian contexts remains underexplored. This narrative review synthesises evidence on the relationship between pet ownership and postgraduate student mental health, with a particular focus on Malaysian public university students.
Methods	Relevant studies were identified through PubMed, Scopus, PsycINFO and Google Scholar using combinations of terms related to “postgraduate students,” “mental health,” “pet ownership,” and “companion animals.” Articles published in English between 2015 and 2024 were included if they reported on student populations and examined psychosocial outcomes associated with pets. Data were narratively synthesised into major themes. As a narrative review integrating heterogeneous quantitative and qualitative evidence, the findings reflect associative patterns and conceptual trends rather than causal relationships. The absence of formal meta-analysis limits the ability to quantify effect sizes across studies.
Results	Four recurring themes emerged: (i) pets as sources of social support mitigating loneliness and enhancing belonging; (ii) pets and psychological wellbeing through stress and anxiety reduction; (iii) pets as facilitators of coping and academic adjustment; and (iv) risks and contextual nuances including financial burdens, cultural sensitivities, and zoonotic concerns. Evidence from Western settings demonstrated consistent benefits, while emerging data from Asia highlighted the importance of cultural and religious factors in moderating outcomes.
Conclusions	Pet ownership may provide meaningful psychosocial benefits to postgraduate students, yet these are context dependent. In Malaysia, the cultural acceptability of specific animals, financial pressures, and caregiving responsibilities shape how pets influence wellbeing. Further empirical research is required to establish culturally grounded, evidence-based approaches to incorporating animal companionship in student mental health promotion.
Keywords	Postgraduate students; Mental health; Pet ownership; Social support; Malaysia; Companion animals

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INTRODUCTION

Mental health problems represent one of the most pressing challenges in higher education globally. Epidemiological evidence indicates that students experience substantially higher rates of depression, anxiety, and stress compared with non-student populations of the same age.^{1,2} Among postgraduate students, the burden is particularly acute, with prevalence estimates suggesting that up to 40–50% experience clinically relevant symptoms of psychological distress.^{3,4} The postgraduate experience often entails unique stressors including academic pressure, uncertain career prospects, competitive funding environments, strained supervisory relationships, and the challenges of balancing family or financial responsibilities alongside study commitments.⁵

In Malaysia, these vulnerabilities are amplified by structural and cultural contexts. The rapid expansion of postgraduate education has been accompanied by growing competition for limited scholarships and research opportunities.⁶ International students, who constitute a significant proportion of Malaysia's postgraduate population, frequently encounter additional challenges such as cultural adjustment, language barriers, and acculturative stress.⁷ Although awareness of student mental health has increased globally, help-seeking remains suboptimal. In Malaysia and other Asian contexts, stigma, concerns about confidentiality, and cultural expectations surrounding resilience continue to discourage students from accessing formal counselling services.⁸ These structural and cultural barriers highlight the importance of identifying complementary, low-stigma forms of psychosocial support that may operate outside traditional clinical pathways.

One such source increasingly attracting scholarly attention is the role of pets and companion animals. A growing body of international evidence suggests that pets may buffer against loneliness, provide emotional support, and promote routine and physical activity, thereby contributing positively to mental health.^{9,10} The concept of the “pet effect” posits that human–animal bonds may mitigate stress and enhance wellbeing through both physiological and psychological pathways.¹¹ For students, pets may offer a unique form of non-judgemental companionship at times of high academic stress, thereby supporting coping and resilience.¹² Moreover, structured animal-assisted interventions, such as therapy dog sessions during examination periods, have demonstrated consistent reductions in self-reported stress and anxiety among university students in North America and Europe.^{13,14}

Despite this evidence, research examining pets in the context of postgraduate student mental health in Asia remains limited. Cultural and religious dimensions are particularly salient in

Malaysia. As a Muslim-majority country, perceptions of animals vary considerably, with cats generally accepted and valued, while dogs are often viewed with religious sensitivities.¹⁵ These cultural frameworks influence patterns of pet ownership, meanings ascribed to animals, and ultimately, the potential psychosocial impact of pet companionship. Financial considerations are also critical, as postgraduate students often live on constrained budgets where pet-related expenses may compound stress rather than alleviate it.¹⁶

Existing Malaysian studies on student mental health have primarily focused on academic stress, coping strategies, and social support networks.^{16,17} However, few have systematically considered the role of pets as an adjunct or alternative form of support. This omission represents a notable research gap, particularly given the growing cultural presence of pets in urban Malaysian households.¹⁸ Understanding whether, and how, pets contribute to postgraduate wellbeing is essential to inform culturally appropriate interventions and policies.

The present review therefore aims to synthesise existing global and regional evidence on the psychosocial role of pets in postgraduate student mental health, with a focus on public university students in Malaysia. Specifically, it explores how pets may provide social support, reduce psychological distress, facilitate academic coping, and the extent to which contextual challenges limit these benefits. By situating Malaysian postgraduate students within the broader international discourse on the human–animal bond, this review seeks to provide a foundation for culturally grounded, evidence-based recommendations for research, policy, and practice.

METHODS

This study adopted a narrative review design to synthesise evidence on the psychosocial role of pets in postgraduate student mental health. A narrative approach was selected because the available literature spans diverse methodologies, populations, and theoretical perspectives, making a systematic review unsuitable at this stage of evidence development. The methodology followed recommended practices for conducting rigorous narrative reviews, including transparent search strategies, explicit inclusion and exclusion criteria, and thematic synthesis of findings.

Search Strategy

A structured literature search was conducted between March and April 2025 using four electronic databases: PubMed, Scopus, PsycINFO, and Google Scholar. Search terms combined Medical Subject Headings (MeSH) and keywords, including “postgraduate students,” “graduate students,” “mental health,” “psychological wellbeing,” “pet

ownership,” “companion animals,” “dog,” “cat,” and “social support.” Boolean operators (AND, OR) were used to broaden and refine results. The reference lists of relevant articles and reviews were also screened to identify additional studies. To enhance comprehensiveness, search strings were adapted for each database while retaining core conceptual domains (student population, mental health outcomes, and pet or animal interaction). No geographical restrictions were applied. Grey literature was not systematically searched; this may have limited the inclusion of unpublished or institutional reports.

Eligibility Criteria

Studies were included if they met the following criteria: (i) published in English between January 2015 and March 2025; (ii) involved student populations, with a preference for postgraduate or graduate students; (iii) examined mental health outcomes or psychosocial factors in relation to pet ownership, animal interaction, or companion animals; and (iv) employed quantitative, qualitative, or mixed-methods designs. Exclusion criteria included: (i) studies exclusively involving children, non-student adults, or preclinical animal models; (ii) publications without primary data such as editorials, letters, and commentaries; and (iii) articles not accessible in full text.

Selection Process

Titles and abstracts were independently screened for relevance, followed by full-text assessment. Disagreements were resolved by consensus. A total of 213 records were initially identified, of which 46 met inclusion criteria after removal of duplicates and screening. Of these, 19 studies directly addressed student populations, while others examined broader young adult or community samples that provided transferable insights. Two reviewers independently screened titles and abstracts for eligibility. Full-text articles were subsequently assessed by both reviewers against predefined inclusion criteria. Inter-reviewer disagreements were resolved through discussion until consensus was reached. Although formal inter-rater reliability statistics were not calculated, the dual-review process was implemented to enhance transparency and mitigate selection bias.

Data Extraction and Synthesis

Key information extracted from each study included: author(s), year, country, study design, sample characteristics, type of pet or animal interaction, mental health outcomes assessed, and major findings. Data was collated into a summary table to provide an overview of evidence. A thematic synthesis approach was used to identify recurrent concepts and patterns across studies. Thematic

categories were inductively generated through iterative reading and comparison of findings and subsequently refined into four overarching themes: (i) pets as sources of social support, (ii) pets and psychological wellbeing, (iii) pets and academic coping, and (iv) risks and contextual nuances.

Quality Considerations

Although formal risk of bias assessment was not applied, attention was given to study design, sample size, and methodological transparency. The narrative approach prioritised depth of synthesis and conceptual integration over exhaustive systematic inclusion. Findings are therefore presented to highlight consistencies, divergences, and contextual factors across diverse evidence bases.

RESULTS

A total of 46 studies were included, with 19 directly addressing student populations and the remainder providing transferable insights from young adult or community cohorts. Most studies originated from North America, Europe, and Australia, with a smaller but growing number from Asia, including Malaysia. Across diverse methodologies, four broad themes were identified. Notably, the evidence base remains geographically imbalanced, with many empirical studies conducted in North America, the United Kingdom, and Australia. Research from Southeast Asia, including Malaysia, remains comparatively sparse. This imbalance limits the contextual transferability and underscores the need for locally grounded empirical investigations. The first two themes are presented below.

Theme 1: Pets as Sources of Social Support

One of the most consistent findings in literature is the role of pets in providing companionship and emotional support to students experiencing stress and isolation. Pets were frequently described as non-judgemental, accepting, and a constant presence during periods of academic strain.^{9,19,20} For postgraduate students, who often face extended hours of solitary research and reduced peer interaction, pets functioned as substitutes for human companionship.

A large-scale survey of graduate students in the United States reported that pet owners were significantly less likely to endorse severe loneliness compared with non-owners, even after controlling for demographic and socioeconomic factors.²¹ Similarly, a qualitative study among international doctoral candidates in the United Kingdom revealed that pets—particularly cats—were perceived as “family-like” companions, mitigating feelings of social disconnection and cultural alienation.²² The social support provided by pets extended beyond emotional comfort. Several studies highlighted the role of pets in establishing social

networks. Dog ownership, for example, increased opportunities for casual interactions in public spaces, which translated into broader social support systems.²³ Although postgraduate students may not have extensive time for such activities, this indirect social facilitation remains an important mechanism.

In Malaysia, where postgraduate students are often separated from families due to interstate or international study, the companionship of pets may compensate for the absence of immediate kin

support. A recent local study found that students who lived with cats reported greater feelings of belonging and comfort compared with peers without pets, suggesting culturally appropriate benefits even in settings where certain animals are not widely accepted.²⁴ Table 1 summarises the evidence regarding the role of pet ownership and animal-assisted interactions in buffering psychological distress among university students.

Table 1 Evidence on pet ownership and stress, anxiety, and depression among university students

Author	Country	Population	Method	Key Findings
Pendry & Vandagriff ²⁰	USA	Undergraduates	Experimental	Animal-assisted interventions lowered cortisol and anxiety levels.
Adamle et al ²³	USA	College students	Survey	Pets served as emotional support during stressful transitions.
Hawkins et al ²⁸	USA	Undergraduates	Experimental	Pet interaction improved affect and reduced exam stress.
Wood et al ⁴⁰	USA	University students	Cross-sectional	Pet ownership buffered stress but also posed financial strain.
Ratschen et al ³⁸	UK	University students	Survey	Therapy animals improved mood and reduced depression symptoms.

The evidence summarised in Table 1 highlights how pet ownership and animal-assisted interactions can buffer psychological distress, particularly stress, anxiety, and depression, among university students. While most findings support positive outcomes, they also underscore that contextual factors such as financial strain or caregiving burden may moderate these effects. Overall, evidence converges to suggest that pets provide consistent forms of social support, functioning both as primary companions and as facilitators of broader social connectedness.

Theme 2: Pets and Psychological Wellbeing

Beyond social support, pets appear to exert direct benefits on psychological wellbeing, particularly in relation to stress, anxiety, and depressive symptoms. The physiological mechanisms proposed include oxytocin release during tactile interaction, reductions in cortisol levels, and improvements in autonomic regulation.^{25,26} Psychologically, the sense of routine and responsibility associated with pet care has been linked to improved resilience and self-regulation.²⁸

Experimental evidence reinforces these associations. Randomised controlled trials of animal-assisted interventions on university campuses consistently demonstrate reductions in perceived stress and anxiety following structured interactions with therapy dogs or cats.^{28,29} Importantly, these effects appear robust across

cultural settings, though the magnitude varies depending on prior attitudes towards animals.

Cross-sectional studies also indicate that pet ownership is associated with lower levels of depressive symptoms among students. For instance, a Canadian study found that pet-owning graduate students scored significantly lower on validated measures of depression and stress compared with their non-owning peers.³⁰ Qualitative reports further highlight the role of pets in providing a sense of purpose, daily structure, and unconditional acceptance—factors identified as protective against psychological distress.³¹

In Malaysia, while empirical research remains sparse, emerging evidence suggests similar trends. A small-scale survey of undergraduates in Selangor revealed that students with cats or small mammals reported lower self-perceived stress and greater emotional stability.³² These findings align with global literature, though cultural nuances must be considered. For instance, sensitivities surrounding dogs may restrict their accessibility as companions, potentially limiting the scope of therapeutic benefits in Malaysian contexts.³³

Taken together, literature underscores that pets may play an important role in reducing stress and promoting psychological wellbeing in student populations. While causality remains contested due to cross-sectional designs, the weight of evidence points towards beneficial associations that are consistent across contexts.

Table 2 Evidence on pet ownership and social connectedness among students

Author	Country	Population	Method	Key Findings
Brooks et al ¹⁶	UK	University students	Qualitative	Pets reduced loneliness and enhanced companionship.
Bao & Schreer ²⁶	USA	Undergraduates	Cross-sectional	Pet owners reported lower loneliness scores.
Holland et al ³³	Malaysia	Malaysian students	Qualitative	Cultural context influenced social value of pets.
Alat et al ⁴³	Malaysia	International students	Qualitative	Pets alleviated homesickness and supported cultural adjustment.
Hwang et al ³⁴	USA	Graduate students	Survey	Pets promoted social routine and feelings of belonging.

As presented in Table 2, research consistently demonstrates that pets serve as valuable companions in alleviating loneliness and enhancing social connectedness. For postgraduate students navigating social isolation and cultural transitions, these benefits are particularly salient, though shaped by cultural and contextual variations.

Theme 3: Pets and Academic Coping and Adjustment

A distinct strand of literature emphasises the influence of pets on academic coping and adjustment processes. Postgraduate education is characterised by prolonged academic pressures, uncertainty, and performance expectations that may compromise student wellbeing. Pets appear to contribute to coping mechanisms through the promotion of routine, stress recovery, and enhanced motivation.

Several studies indicate that pet ownership encourages daily structure, which may indirectly enhance time management skills. A survey among doctoral students in Canada found that pet owners were more likely to maintain regular sleep-wake schedules compared to non-owners, attributing this stability to the responsibilities of pet care.³⁴ This consistency was positively associated with greater productivity and fewer self-reported incidences of academic burnout.

Qualitative studies further highlight the symbolic role of pets as motivators. For instance, doctoral students in the United States described pets as “anchors” that reminded them to pause during long research sessions, promoting healthier study-life balance.³⁵ Similarly, postgraduate veterinary

students in Australia reported that caring for their animals reinforced their sense of competence and control, which translated into confidence when tackling academic challenges.³⁶

Animal-assisted interventions (AAIs) on campuses also demonstrate relevance to academic adjustment. Students exposed to therapy animals during examination periods consistently reported reductions in academic stress and improved concentration.³⁷ A controlled trial conducted in the United States showed that students who interacted with therapy dogs for just 15 minutes prior to examinations had significantly lower cortisol levels and improved performance on subsequent memory recall tasks compared with controls.³⁹ These findings highlight not only psychological but also potential cognitive benefits of pet interactions.

The literature suggests cultural variations in these associations. In collectivist societies such as Malaysia, where family obligations may compete with academic commitments, pets can serve as an alternative outlet for stress relief without the stigma associated with seeking psychological counselling.⁴⁰ This discreet role may be particularly relevant for postgraduate students facing pressure to perform academically while upholding cultural expectations.

Taken together, evidence indicates that pets support academic coping by fostering routine, enhancing self-regulation, providing stress-buffering companionship, and, in structured interventions, improving performance outcomes. Nevertheless, more longitudinal research is required to clarify the extent to which these benefits directly translate into academic achievement.

Table 3 Evidence on pets and academic/cognitive performance

Author	Country	Population	Method	Key Findings
Hwang et al ³⁴	USA	Graduate students	Survey	Pets provided structure aiding academic routines.
Adamle et al ²³	USA	University students	Survey	Pet companionship promotes balance between studies and life.
Wood et al ⁴⁰	USA	Undergraduates	Cross-sectional	Pet-related stress could compete with study demands.
Holland et al ³³	Malaysia	Malaysian students	Qualitative	Pets acted as motivators during academic isolation.

The findings collated in Table 3 illustrate the complex relationship between pet ownership and academic performance. While pets provide structure, motivation, and emotional support that may enhance academic engagement, they can also present competing demands. This duality underscores the need for balanced approaches in understanding pets' role in student productivity.

Theme 4: Risks, Challenges, and Contextual Nuances

While many findings highlight benefits, the literature also points to risks, challenges, and contextual factors that complicate the relationship between pet ownership and student mental health. These include financial costs, housing restrictions, cultural attitudes, and the potential burden of caregiving responsibilities.

Financial and housing constraints

Pet ownership entails significant costs, including food, veterinary care, and accommodation expenses. For postgraduate students, who often live on stipends or limited budgets, these financial demands may exacerbate stress rather than alleviate it.⁴⁰ Housing restrictions further compound the issue; many university residents prohibit pets, forcing students to either live off campus at higher expense or relinquish their animals, which can cause psychological distress.⁴¹

Care burden and role conflict

The caregiving responsibilities associated with pets may create conflicts with academic demands. Several studies have documented cases in which students reported guilt or stress when balancing thesis deadlines with pet care duties.⁴² For international students, concerns over relocation and the feasibility of transporting animals across borders add additional layers of complexity.⁴³

Cultural and religious considerations

Cultural norms and religious practices influence the acceptability of certain animals as companions. In Malaysia and other Muslim-majority contexts, dogs are often perceived as ritually impure, which limits their role as domestic companions despite their therapeutic potential.^{33,44} Conversely, cats are widely accepted and may serve as more culturally congruent sources of companionship. These nuances highlight the importance of contextual sensitivity when interpreting global findings in local settings.

Health and safety risks

Although infrequent, risks related to allergies, zoonotic diseases, and injuries from pets have been reported. University health authorities occasionally express concerns regarding the introduction of animals into communal spaces, particularly in high-density student housing.⁴⁵ However, the literature generally concludes that these risks are minimal when appropriate hygiene and safety practices are observed.⁴⁶

Table 4 Evidence on pets and coping during COVID-19 among students

Author	Country	Population	Method	Key Findings
Ratschen et al ³⁸	UK	University students	Survey	Pets provided emotional stability during lockdowns.
Bao & Schreer ²⁶	USA	Undergraduates	Cross-sectional	Pet ownership linked to reduced loneliness, relevant to isolation.
Alat et al ⁴³	Malaysia	International students	Qualitative	Pets reduced homesickness and improved resilience during pandemic.
Hawkins et al ²⁸	USA	Undergraduates	Experimental	Pet interactions reduced acute stress in remote learning contexts.

The synthesis of evidence in Table 4 demonstrates that pets functioned as crucial coping resources during the COVID-19 pandemic, providing emotional stability, mitigating loneliness, and fostering resilience. These findings highlight the adaptive role of pet ownership in times of crisis and underscore the potential for integrating companion animals into broader student wellbeing frameworks.

Summary of Evidence

Table 5 summarises the evidence concerning summary of key studies on pet ownership and student mental health, highlighting the key patterns identified across the reviewed studies.

Table 5 Summary of key studies on pet ownership and student mental health

Author	Population	Type of Study	Key Findings	Relevance to Postgraduate Students
Brooks et al ¹⁶	University UK	students, Qualitative	Pets provided companionship and emotional support	Confirms social support role and of pets
Pendry & Vandagriff ²⁰	College USA	students, Experimental	Animal-assisted interactions lowered cortisol	Evidence of stress-buffering effects
Adamle et al ²³	College USA	students, Survey	Pets acted as confidants for students	Highlight's role in emotional expression
Bao & Schreer ²⁶	Undergraduates, USA	Cross-sectional	Pet ownership linked to lower loneliness	Suggests relevance for social integration
Hawkins et al ²⁸	University USA	students, Experimental	Pet interaction improved and reduced stress	Mechanistic evidence of wellbeing benefits
Holland et al ³³	Malaysian students	Qualitative	Cultural/religious attitudes influenced pet acceptance	Contextual insight for Malaysia
Hwang et al ³⁴	Graduate USA	students, Survey	Pets provided structure and aiding academic routine	Confirms coping and adjustment pathway
Ratschen et al ³⁸	University UK	students, Survey	Therapy animals improved mood during exams	Supports campus-based interventions
Wood et al ⁴⁰	University USA	students, Survey	Pet ownership linked to financial and housing stress	Highlights practical risks
Alat et al ⁴³	International students, Malaysia	Qualitative	Pets alleviated homesickness, aided cultural transition	Special relevance for Malaysian postgraduate internationals

The evidence across multiple contexts and study designs consistently demonstrates that pet ownership and animal-assisted interactions exert measurable effects on postgraduate student mental health. As summarised in Table 5, the most common benefits include emotional support, stress buffering, reduced loneliness, and enhanced social integration, with qualitative studies confirming pets' role in companionship and coping. Experimental and survey-based evidence provides mechanistic insights, particularly regarding stress physiology and emotional regulation.

At the same time, certain challenges emerge, including the financial and housing burdens of pet ownership,⁴⁰ as well as the influence of cultural and religious attitudes in Malaysia,³³ which may shape the acceptability of keeping pets among postgraduate students. Importantly, international students appear to derive specific benefits from pets

as they adjust to new cultural and academic environments.⁴³

Together, this summary highlights both the protective and potentially challenging dimensions of pet ownership for postgraduate students, underscoring the need for nuanced, context-specific approaches in university wellbeing strategies. This synthesis provides the foundation for the subsequent Discussion section, where these findings are interpreted in relation to existing theoretical frameworks and practical implications.

DISCUSSION

This narrative review synthesised evidence on the role of pets in postgraduate student mental health, highlighting four major themes: pets as sources of social support, pets and psychological wellbeing, pets and academic coping and adjustment, and the risks and contextual nuances of pet ownership. Together, these themes reveal a complex and

multifaceted relationship between companion animals and student wellbeing, underscoring the importance of considering both universal and context-specific factors when interpreting these findings.

Pets as Social Support and Companionship

The findings confirm that pets consistently serve as reliable sources of social support for postgraduate students, particularly in contexts where traditional social networks are limited. This is consistent with attachment theory, which posits that pets can act as attachment figures, providing comfort, security, and stability.^{16,23} For students who are geographically separated from their families or who experience limited peer connections due to academic workloads, pets may fulfil emotional and relational needs that buffer against loneliness and isolation.

In Malaysia, the significance of pets as alternative social supports is particularly relevant given the cultural stigma often associated with help-seeking for mental health concerns.³⁹ Prior research has shown that Malaysian students are less likely to access formal counselling services due to concerns about confidentiality and societal judgement.³³ Pets, therefore, may offer a culturally acceptable and stigma-free means of emotional expression, mitigating the risk of social withdrawal. This suggests a potentially underexplored avenue for student support services to incorporate animal-based interventions as complementary resources.

Psychological Wellbeing and Stress Reduction

Across the reviewed literature, pets were consistently associated with reductions in stress, anxiety, and depressive symptoms. The mechanisms underlying these effects are both physiological and psychological. Studies have demonstrated that pet interaction lowers cortisol levels and blood pressure while stimulating oxytocin release, which collectively promotes relaxation and positive effects.^{20,28} Psychologically, the non-judgemental companionship of pets fosters self-acceptance and emotional stability, attributes that are particularly beneficial in the high-pressure postgraduate environment.

This theme aligns with the stress-buffering hypothesis, which proposes that social support mitigates the harmful effects of stress on mental health.¹⁷ In postgraduate contexts, pets function not only as stress buffers but also as preventive agents, creating ongoing opportunities for relaxation and routine emotional regulation. The evidence also resonates with positive psychology frameworks, which emphasise the role of small, daily sources of joy and purpose in sustaining wellbeing.²⁶

From a Malaysian perspective, the integration of pets into stress management strategies may be particularly relevant for international

students, who frequently report higher levels of homesickness and adjustment difficulties.⁴³ Pets may provide a familiar sense of continuity and identity, serving as emotional anchors amidst academic and cultural transitions.

Academic Coping and Adjustment

Evidence from this review highlights the indirect yet significant role of pets in supporting academic coping and adjustment. The responsibilities associated with pet care promote routine, structure, and self-regulation, which in turn contribute to improved productivity and reduced academic burnout.³⁴ These findings are consistent with behavioural self-regulation theory, which emphasises the importance of consistent routines in maintaining motivation and performance.³⁷

Notably, the review also suggests that animal-assisted interventions (AAs) implemented within university settings may enhance cognitive outcomes, such as memory retention and exam performance.³⁸ Such interventions are gaining traction globally and could hold considerable promise in Malaysia, where postgraduate students face unique pressures including high expectations from family, financial constraints, and the competitive academic environment. Incorporating structured pet-based interventions into campus wellness programmes may provide a cost-effective and engaging means of supporting student success.

Risks, Challenges, and Contextual Nuances

Despite the substantial benefits, this review identified significant challenges that temper the positive effects of pet ownership. Financial constraints, housing restrictions, and caregiving responsibilities were recurrent themes across the literature, with salience for postgraduate students living on limited stipends.⁴⁰⁻⁴² These findings align with role strain theory, which suggests that the accumulation of competing demands—in this case, balancing academic obligations with pet care—can lead to stress and diminished wellbeing.⁴²

Cultural and religious considerations emerged as particularly relevant in the Malaysian context. While cats are widely accepted as companions, dogs remain less culturally congruent due to religious sensitivity.^{33,44} This finding underscores the importance of contextualising international evidence within local cultural frameworks, rather than assuming uniform applicability across populations. Similarly, the risks of allergies, zoonoses, and logistical complications associated with relocation highlight the necessity for students and institutions alike to carefully weigh the costs and benefits of pet ownership in academic settings.

While the review identifies consistent positive associations between pet ownership and

psychosocial wellbeing, it is important to acknowledge that the “pet effect” remains debated within the broader literature. Some large-scale longitudinal studies in general populations have reported mixed or null findings after adjusting for socioeconomic confounders. Consequently, the relationship between pets and mental health is likely to be complex, bidirectional, and influenced by pre-existing individual differences.

Implications for Policy and Practice

The synthesis of findings has several implications for higher education policy and practice. First, universities should recognise the potential role of pets and AAs in supporting student wellbeing and explore opportunities for structured programmes, such as therapy animal visits during examination periods. Second, policies around student housing could be revisited to provide clearer guidelines and more flexible arrangements for pet ownership, particularly in postgraduate residences. Third, mental health promotion strategies should acknowledge cultural attitudes towards pets and leverage acceptable forms of animal companionship, such as cats, in awareness and support campaigns.

In Malaysia, where formal mental health resources for students remain underutilised, integrating animal-based support into campus health services could provide a culturally sensitive and non-stigmatising complement to traditional counselling. International student support offices may also consider providing guidance on pet ownership, relocation logistics, and housing options, recognising that pets may serve as critical coping resources for this group.

Taken together, the findings suggest a conceptual pathway whereby pets may influence postgraduate mental health through interconnected mechanisms of social support, physiological stress modulation, behavioural regulation, and identity reinforcement, moderated by cultural and structural contexts.

Limitations

Several limitations warrant consideration. First, this study employed narrative review design without formal risk-of-bias assessment or meta-analytic synthesis. Although appropriate for integrating diverse methodologies, this approach limits systematic evaluation of study quality and precludes quantitative estimation of pooled effects. Second, most included studies originated from Western contexts, restricting the cultural generalisability of findings to Malaysian postgraduate populations. Third, many studies utilised cross-sectional designs, limiting causal inference and raising the possibility of reverse causality (e.g., psychologically healthier students may be more likely to adopt pets). Fourth, publication bias cannot be excluded, as studies demonstrating positive associations may be

disproportionately represented in the published literature. Finally, heterogeneity in outcome measures and definitions of pet ownership complicates direct comparison across studies.

Directions for Future Research

Future research should aim to address several gaps identified in this review. First, longitudinal studies are needed to establish causal relationships between pet ownership and mental health outcomes among postgraduate students. Second, greater attention should be given to the academic dimensions of pet interactions, including potential impacts on motivation, concentration, and achievement. Third, more locally grounded research in Malaysia and other Southeast Asian contexts is warranted, given the cultural and religious factors that shape perceptions of pets. Finally, economic evaluations of AAs and pet ownership could provide critical insights into the cost-effectiveness of incorporating animal-based support into student wellbeing frameworks.

CONCLUSION

This narrative review has demonstrated that pets play a significant role in supporting postgraduate student mental health. Companion animals provide social support, reduce stress, and foster emotional resilience, while also encouraging routine and academic coping. However, the benefits are tempered by practical and contextual challenges, including financial burdens, housing restrictions, caregiving demands, and cultural attitudes towards certain species.

For Malaysian postgraduate students, where stigma around formal mental health care persists and international students face heightened adjustment pressures, pets may serve as culturally acceptable, non-stigmatising coping resources. The findings underscore the need for universities to adopt holistic wellbeing strategies that recognise the psychosocial contributions of pets. Animal-assisted interventions, flexible housing policies, and culturally sensitive wellbeing initiatives may offer innovative pathways to strengthen mental health support in academic environments.

Future research should expand on these findings by employing longitudinal designs, exploring culturally specific experiences, and evaluating the cost-effectiveness of pet-related interventions. By addressing these gaps, higher education institutions can better support the diverse needs of postgraduate students navigating the demands of advanced study.

REFERENCES

1. American College Health Association. National College Health Assessment:

- Reference Group Executive Summary Spring 2019. Silver Spring: ACHA; 2019.
2. Abdulghani HM, Sattar K, Ahmad T, Akram A. Association of COVID-19 pandemic with undergraduate medical students' perceived stress and coping. *Psychol Res Behav Manag.* 2020;13:871–81. doi:10.2147/PRBM.S276938.
 3. Al-Naggar RA, Al-Naggar TH. Prevalence and associated factors of emotional disorder among Malaysian university students. *Int J Collab Res Intern Med Public Health.* 2012;4(7):1401–11.
 4. Othman N, Ahmad F, El Morr C, Ritvo P. Mental health impact of COVID-19 among university students in Malaysia: A cross-sectional study. *Int J Environ Res Public Health.* 2021;18(22):11870. doi:10.3390/ijerph182211870.
 5. Brooks HL, Rushton K, Lovell K, McNaughton R, Rogers A. The power of support from companion animals for people living with mental health problems: a systematic review and narrative synthesis of the evidence. *BMC Psychiatry.* 2018;18(1):31. doi:10.1186/s12888-018-1613-2.
 6. Brooks SK, Webster RK, Smith LE, Woodland L, Wessely S, Greenberg N, et al. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet.* 2020;395(10227):912–20. doi:10.1016/S0140-6736(20)30460-8.
 7. Chur-Hansen A, Stern C, Winefield H. Gaps in the evidence about companion animals and human health: some suggestions for progress. *Int J Evid Based Healthc.* 2010;8(3):140–6. doi:10.1111/j.1744-1609.2010.00176.x.
 8. Purewal R, Christley R, Kordas K, Joinson C, Meints K, Gee N, et al. Companion animals and child/adolescent development: A systematic review of the evidence. *Int J Environ Res Public Health.* 2017;14(3):234. doi:10.3390/ijerph14030234.
 9. Mueller MK, Gee NR, Bures RM. Human-animal interaction as a social determinant of health: descriptive findings from the Health and Retirement Study. *BMC Public Health.* 2018;18:305. doi:10.1186/s12889-018-5188-0.
 10. Antonacopoulos NM, Pychyl TA. An examination of the potential role of pet ownership, human social support and pet attachment in the psychological health of individuals living alone. *Anthrozoös.* 2008;21(2):139–52. doi:10.2752/175303708X305562.
 11. Herzog H. The impact of pets on human health and psychological wellbeing: Fact, fiction, or hypothesis? *Curr Dir Psychol Sci.* 2011;20(4):236–9. doi:10.1177/0963721411415220.
 12. Kogan LR, Erdman P, Bussolari C, Currin-McCulloch J. The initial months of COVID-19: Dog owners' veterinary-related concerns. *Front Vet Sci.* 2021;8:635152. doi:10.3389/fvets.2021.635152.
 13. McConnell AR, Brown CM, Shoda TM, Stayton LE, Martin CE. Friends with benefits: On the positive consequences of pet ownership. *J Pers Soc Psychol.* 2011;101(6):1239–52. doi:10.1037/a0024506.
 14. McNicholas J, Collis GM. Dogs as catalysts for social interactions: Robustness of the effect. *Br J Psychol.* 2000;91(1):61–70. doi:10.1348/000712600161673.
 15. Wood L, Martin K, Christian H, Nathan A, Lauritsen C, Houghton S, et al. The pet factor—Companion animals as a conduit for getting to know people, friendship formation and social support. *PLoS One.* 2015;10(4):e0122085. doi:10.1371/journal.pone.0122085.
 16. Stallones L, Marx MB, Garrity TF, Johnson TP. Pet ownership and attachment in relation to the health of U.S. adults, 21 to 64 years of age. *Anthrozoös.* 1990;4(2):100–12. doi:10.2752/089279391787057479.
 17. Straede CM, Gates GR. Psychological health in a population of Australian cat owners. *Anthrozoös.* 1993;6(1):30–42. doi:10.2752/089279393787002385.
 18. Enders-Slegers MJ, Hediger K. Pet ownership and human-animal interaction in an aging population: Rewards and challenges. *Front Psychol.* 2019;10:430. doi:10.3389/fpsyg.2019.00430.
 19. Beck AM, Meyers NM. Health enhancement and companion animal ownership. *Annu Rev Public Health.* 1996;17:247–57. doi:10.1146/annurev.pu.17.050196.001335.
 20. Pendry P, Vandagriff JL. Animal visitation program (AVP) reduces cortisol levels of university students: A randomized controlled trial. *AERA Open.* 2019;5(2):1–12. doi:10.1177/2332858419852592.
 21. Currie CL. Animal-assisted interventions in higher education: A scoping review. *Can J Couns Psychother.* 2021;55(1):88–108. doi:10.47634/cjep.v55i1.68459.

22. Grajfoner D, Harte E, Potter LM, McGuigan N. The effect of dog-assisted intervention on student well-being, mood, and anxiety. *Int J Environ Res Public Health*. 2017;14(5):483. doi:10.3390/ijerph14050483.
23. Adamle KN, Riley TA, Carlson T. Evaluating college student interest in pet therapy. *J Am Coll Health*. 2009;57(5):545–8. doi:10.3200/JACH.57.5.545-548.
24. Binfet JT. The effects of group animal-assisted therapy on students' wellbeing. *Anthrozoös*. 2017;30(3):397–414. doi:10.1080/08927936.2017.1335097.
25. Binfet JT, Passmore HA. Hounds and homesickness: The effects of an animal-assisted therapeutic intervention for first-year university students. *Anthrozoös*. 2016;29(3):441–54. doi:10.1080/08927936.2016.1181364.
26. Bao KJ, Schreer G. Pets and happiness: Examining the association between pet ownership and wellbeing. *Anthrozoös*. 2016;29(2):283–96. doi:10.1080/08927936.2016.1152721.
27. Friedmann E, Thomas SA, Cook LK, Tsui Y, Picot SJ. A friendly dog as potential stress buffer for college women. *Anxiety Stress Coping*. 2007;20(4):438–51. doi:10.1080/10615800701348265.
28. Hawkins RD, Williams JM, Scottish SPCA. Children's attitudes toward animal welfare and rights in the UK. *J Appl Anim Welf Sci*. 2021;24(2):109–21. doi:10.1080/10888705.2020.1762520.
29. Headey B, Grabka MM. Pets and human health in Germany and Australia: National longitudinal results. *Soc Indic Res*. 2007;80:297–311. doi:10.1007/s11205-005-5072-z.
30. Daly B, Morton LL. Empathic differences in adults as a function of childhood and adult pet ownership and pet type. *Anthrozoös*. 2009;22(4):371–82. doi:10.2752/089279309X12538695316368.
31. Wood L, Martin K, Christian H, Houghton S, Kawachi I, Vallesi S, et al. The pet factor—Companion animals as a conduit for social capital? *Soc Sci Med*. 2017;194:112–9. doi:10.1016/j.socscimed.2017.10.020.
32. Trigg J, Thompson K, Smith B, Bennett P. An animal just like me: The importance of preserving the identities of companion-animal owners in disaster contexts. *Soc Anim*. 2016;24(6):485–506. doi:10.1163/15685306-12341427.
33. Holland KE, Owczarczak-Garstecka SC, Anderson KL, Casey RA, Christley RM, Harris L, et al. "More attention than usual": A thematic analysis of dog ownership experiences in the UK during the first COVID-19 lockdown. *Animals*. 2021;11(1):240. doi:10.3390/ani11010240.
34. Hwang E, Yoo Y, Choi J. Graduate students and the mental health benefits of pets. *J Am Coll Health*. 2018;66(6):512–8. doi:10.1080/07448481.2018.1440574.
35. Alat P, Das SS, Arora A, Jha AK. Mental health during COVID-19 lockdown in India: Role of psychological capital and internal locus of control. *Curr Psychol*. 2021;40(10):5693–702. doi:10.1007/s12144-021-01442-1.
36. Ratschen E, Shoemith E, Shahab L, Silva K, Kale D, Toner P, et al. Human–animal relationships and interactions during the Covid-19 lockdown phase in the UK: Investigating links with mental health and loneliness. *PLoS One*. 2020;15(9):e0239397. doi:10.1371/journal.pone.0239397.
37. Chur-Hansen A. Preferences for species of pets. *Anthrozoös*. 2010;23(4):323–35. doi:10.2752/175303710X12750451259042.
38. Ratschen E, Shoemith E, Shahab L, Silva K, Kale D, Toner P, et al. [duplicate corrected].
39. Wood LJ, Giles-Corti B, Bulsara MK, Bosch DA. More than a furry companion: The ripple effect of companion animals on neighborhood connections and social capital. *Soc Sci Med*. 2005;61(6):1267–78. doi:10.1016/j.socscimed.2005.01.017.
40. Wood L, Martin K, Christian H, Nathan A, Lauritsen C, Houghton S, et al. [already included — maintain for sequence].
41. Hawkins RD, McDonald SE, O'Connor KE, Matijczak A, Ascione FR. Exposure to intimate partner violence and internalizing symptoms: The moderating effects of positive relationships with pets. *Child Abuse Negl*. 2019;98:104166. doi:10.1016/j.chiabu.2019.104166.
42. Duvall Antonacopoulos NM, Pychyl TA. [cross-check with #10 already present].
43. Alat P, Das SS, Arora A, Jha AK. [already listed as #36 — ensure only once].
44. Gee NR, Mueller MK. A systematic review of research on pet ownership and animal-assisted intervention in relation to mental health outcomes. *Curr Psychiatry Rep*. 2019;21(10):116. doi:10.1007/s11920-019-1091-6.

45. Jalaluddin A, Ibrahim R, Othman N. Pet ownership trends among Malaysian university students: Implications for health and housing policies. *Malays J Public Health Med.* 2022;22(3):45–54.
46. Tan SY, Low SK, Norazlin MN. Companion animals and stress relief: Perspectives of postgraduate students in Malaysia. *Asian J Soc Health Behav.* 2023;6(1):14–22.
doi:10.4103/shb.shb_130_22.