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The Relationship Between Emotional Regulation and Mental Health with Pet Ownership

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ABSTRACT

Objective: This study aimed to examine emotion regulation and mental health among pet owners and non-pet owners, compare these variables by gender and age, and investigate the extent to which emotion regulation predicts mental health among pet owners.

Methods and Materials: A cross-sectional study was conducted with 218 adults recruited from veterinary clinics, shopping malls, and social media in Amman, Jordan. The sample comprised 80 pet owners and 138 non-pet owners. Emotion regulation was assessed with the Arabic Emotion Regulation Scale (cognitive reappraisal and expressive suppression), and mental health with the 28-item General Health Questionnaire (GHQ-28), which covers psychosomatic symptoms, anxiety and insomnia, social dysfunction, and depression. Data were analysed using descriptive statistics, independent-samples t tests, one-way ANOVA, and simple linear regression with $p \leq 0.05$.

Findings: Pet owners showed significantly higher mean scores for emotion regulation and better mental health than non-owners across all GHQ-28 dimensions ($p < 0.001$). Among pet owners, women reported higher overall emotion regulation and cognitive reappraisal than men, whereas men showed higher expressive suppression. Women also had better total mental health and social functioning scores. Age differences appeared in psychosomatic complaints and social functioning, favouring adults aged 20–40 years. In pet owners, emotion regulation significantly predicted mental health and explained about 47% of its variance ($R^2 \approx 0.47$, $p<0.001$).

Conclusion: Pet ownership is associated with better emotion regulation and mental health, especially among women and younger adults. Emotion regulation is an important predictor of mental health in pet owners.

Keywords: Emotion regulation, mental health, pet ownership, cross-sectional study.

Introduction

Over the years, plenty of research has been conducted on the bond between humans and pets, as the pet effect, and how it could contribute to achieving a set of psychological benefits, such as supporting emotional regulation methods, which positively affects the individuals mental health (Friedmann et al., 2023), depression Branson et al., (2017), reducing the feelings of loneliness (Stanley et al., 2014), and boosting happiness (Bao & Schreer, 2016). Owning pets has many positive social and psychological effects, improving the owner's quality of life and enhancing their ability to face challenges and psychological distress (Shams et al., 2021). The relationship between humans and pets is linked to the concept of Human-Animal Interaction, which refers to the mutual interaction between humans and animals and its impact on physical and psychological health. Many studies have indicated that owning pets plays an essential role in reinforcing the feelings of attachment and security, which is a contributing factor to those who suffer from anxiety and depression, as they showed improvement in stress levels and reduced feelings of social isolation after adopting their pets (von Humboldt, 2025; Wong & Co, 2023). In terms of emotional regulation, pets serve as a positive distraction in stressful situations, as caring for them and participating in daily activities can help reduce negative emotions and enhance feelings of satisfaction and happiness (Wan et al., 2023). The benefits also vary depending on the type of pet and the nature of the relationship; for example, dog owners experience improved physical health through activities like walking, which enhances social interactions and, in turn, reduces feelings of loneliness (Brooks et al., 2016). Although the types of pets people own differ, simple interactions with animals, such as stroking a cat's fur or watching fish in an aquarium, can elicit positive responses, such as lowering blood pressure and reducing stress, which promote feelings of comfort and calm (Gee et al., 2017).

Additionally, owning pets improves emotional regulation skills, which helps maintain psychological balance. Studies indicate that interacting with pets helps develop positive ways of dealing with stress by focusing on daily interactions and skills such as empathy, thereby improving the owner's coping skills and enhancing their emotional regulation (Hoy-Gerlach, 2023). The Pet Effect is clearly evident in mental health, as it plays a crucial role in boosting self-confidence and emotional stability. Pets' consistent presence fosters feelings of belonging and appreciation, helping build stronger and more positive social connections (McCune et al., 2014). However, owning pets comes with its challenges. Despite the benefits, owning pets can lead to financial and health difficulties that may affect the owner's psychological well-being. Some studies showed that the economic costs of caring for pets, in addition to daily responsibilities such as feeding and cleaning, may cause additional stress, especially for those with limited income (Needell & Mehta-Naik, 2016). There's also the potential risk of disease transmission, which could result in anxiety levels, especially for those with weak immune systems. In addition to the challenges, the field of human-animal interaction has yielded mixed results: while most studies suggest positive effects of pet ownership on pet owners, many have not found a relationship between pet ownership and psychological or physical health (Rodriguez et al., 2021). There is still a lack of evidence concerning the topic of pet owners being healthier and happier as a group, since the positive impact of pet ownership may depend on several factors, such as age, gender, pet type, the relationship between the owner and the pet, the time spent with the pet, and environmental, social, and physical conditions. Despite these nuances, the benefits outweigh the potential challenges, as pets foster socialization, encourage community involvement, and reduce feelings of isolation, thereby improving quality of life. These benefits are particularly evident in people with mental health conditions, as pets offer unique and ongoing psychological support (Brooks et al., 2016; Latella et al., 2024). Based on the above, owning pets goes beyond providing psychological support for owners; it also contributes to improving emotional regulation skills and to a supportive environment for mental health overall. From this standpoint, this study aims to explore in depth the relationships among pet ownership, emotional regulation, and mental health. It seeks to examine how human-animal interactions influence and improve mental health more broadly by shedding light on the positive and negative impacts of pet ownership and evaluating the extent to which individuals engage with their pets to improve quality of life. The study's findings guide families and individuals considering pet ownership by highlighting the

psychological and emotional benefits, particularly amid the increasing pressure on modern society. Thus, the study enhances understanding of the biological, psychological, and social factors that influence mental health and provides a reliable scientific basis for developing effective, integrated therapeutic strategies.

The research aims to answer the following question: What are the levels of emotional regulation and mental health, and their dimensions, among pet owners? Are there any statistically significant differences in the average scores of emotional regulation and mental health among pet owners based on gender and age? Are there statistically significant differences between the average scores of pet owners and non-pet owners in emotional regulation, mental health, and their dimensions? To what extent does emotional regulation predict psychological health among pet owners?

Methods and Materials

The sample for this study was drawn from visitors to veterinary clinics in Amman, who were asked to complete the scales. Participants were also encouraged to have their family members complete the scale via a Google Forms link. Additionally, the sample was expanded by sharing the scale on social media platforms, such as Facebook and Instagram, where the announcement was made for the local community. The link was also shared in malls where people could participate if they were interested. The sample consisted of 218 participants: 80 were pet owners (34 males and 46 females), and 138 were non-pet owners (63 males and 76 females).

Instruments

Emotional Regulation Scale: Gross & John (2003) developed the scale for adults and middle-aged individuals. This scale was chosen for the current study because it is widely used in international studies investigating the same variables and has been applied to various samples, demonstrating suitability for the age groups of the study sample. The scale was translated into Arabic by Fekih-Romdhane et al. (2023). The scale consists of 10 items divided into two strategies: cognitive reappraisal (6 items) and expressive suppression (4 items). Responses to the scale items are recorded using a 7-point Likert scale, ranging from “strongly agree” to “strongly disagree”. For the Reappraisal subscale, Cronbach’s alpha ranged from 0.79 to 0.89 across different samples in their studies. For the Suppression subscale, Cronbach’s alpha values ranged between 0.68 and 0.76. Thus, the values indicate that the questionnaire is psychometrically sound, with good internal consistency for the Reappraisal subscale and acceptable internal consistency for the Suppression subscale. The validity of the scale was verified by presenting it to seven experts in educational and psychological sciences to assess the appropriateness of the item wording, the relevance of the intended dimensions, and its cultural adaptation to the Jordanian environment. The agreement rate among the experts on the validity of the items for the reappraisal strategy and their alignment with the relevant dimension was high. The scale measures emotional regulation- an individual's ability to control and manage their emotional state. This ability may involve reframing a challenging situation to reduce feelings of anger or anxiety, concealing overt signs of sadness or fear, or focusing on factors that evoke happiness or calm.

General Health Questionnaire (GHQ-28): The scale was developed by Goldberg & Williams (1988) and later refined with Williams. It is a self-administered screening tool designed to detect psychiatric disorders in community settings and non-psychiatric clinical environments, such as primary care or general practice. GHQ-28 contains four subscales that assess four specific domains: Somatic Symptoms: Physical manifestations of psychological distress, Anxiety and Insomnia: Symptoms related to anxiety and sleep disturbances. Social Dysfunction: Difficulties in performing daily social and occupational activities, and Severe Depression: Indicators of severe depression, including feelings of hopelessness. The survey included 28 items on a 4-point Likert scale. The results ranged from 0 to 84, where 0 indicates a significant decline in psychological health, and 84 indicates a significant improvement in psychological well-being. The General Health Questionnaire has been widely used in both psychiatric and non-psychiatric settings. GHQ-28 has demonstrated strong internal consistency across cultural contexts and diverse populations. Reported Cronbach's alpha values are: Overall GHQ-28: Ranges from 0.85 to 0.95, indicating excellent reliability. For the Subscales: Somatic Symptoms: 0.76–0.85, Anxiety and Insomnia: 0.84–0.87, Social Dysfunction: 0.73–0.82, and Severe Depression:

0.83–0.90. These values suggest that the GHQ-28 is a reliable instrument for assessing general mental health.

Findings and Results

The levels of emotional regulation and mental health, along with their dimensions, among pet owners are presented in Table 1. The means and standard deviations for emotional regulation and mental health were calculated. The levels were then determined by comparing the actual means to the hypothetical means.

Table 1

Means and standard deviations for emotional regulation, mental health, and their dimensions (n = 80)

Variables	Mean	Std. Deviation	Level
Emotional regulation	59. 05	4.78	High
Cognitive reappraisal	33.25	4.81	High
Expressive suppression	25.80	2.05	High
Mental health	64.80	6.44	High
Psychosomatic	15.80	3.21	High
Anxiety free	15.80	3.94	High
Effectiveness of social functions	18.00	2.38	High
Depression free	15.20	2.50	High

The results indicate that the level of emotional regulation and its dimensions among pet owners was high. Similarly, the level of mental health and its dimensions was also high. This suggests that pet owners have a strong ability for emotional regulation, including emotional reappraisal and suppression. They also enjoy a high level of mental health, freedom from psychosomatic disorders, freedom from anxiety, high effectiveness in social functioning, and freedom from depression. The determination of these levels was based on the statistical hypothetical mean for each scale, as shown in Table 2.

Table 2

Hypothetical Means for Emotional Regulation, Mental Health, and Their Dimensions

Variables	High level	Mid-level	Low level
Emotional regulation	48-70	24-47	0-23
Cognitive reappraisal	30-42	15-29	0-14
Expressive suppression	20-28	10-19	0-9
Mental health	58-84	29-57	0-28
Psychosomatic	14-21	7-13.9	0-6.9
Anxiety free	14-21	7-13.9	0-6.9
Effectiveness of social functions	14-21	7-13.9	0-6.9
Depression free	14-21	7-13.9	0-6.9

To answer the second question, which is: Are there statistically significant differences in the mean scores of emotional regulation and mental health among pet owners based on gender and age? A t-test for independent samples was first conducted to assess the significance of differences in mean scores between males and females on emotional regulation and mental health.

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Table 3

Results of the t-test for Differences in Emotional Regulation and Mental Health between Males and Females

	Sex	N	Mean	Std. Deviation	t	Sig.
Cognitive reappraisal	Male	35	31.34	6.00	82.438	< .001
	Female	45	34.73	2.92		
Expressive suppression	Male	35	26.80	1.28	28.963	< .001
	Female	45	25.02	2.21		
Emotional regulation	Male	35	58.14	6.81	165.867	< .001
	Female	45	59.75	1.99		
Psychosomatic	Male	35	14.08	2.96	.704	.404
	Female	45	17.13	2.74		
Anxiety free	Male	35	16.62	3.41	5.284	.024
	Female	45	15.15	4.24		
Effectiveness of social functions	Male	35	16.91	2.63	27.329	< .001
	Female	45	18.84	1.78		
Depression free	Male	35	14.20	1.21	63.677	< .001
	Female	45	15.97	2.94		
Mental health	Male	35	61.82	7.88	110.609	< .001
	Female	45	67.11	3.74		

Table 3 indicates that the differences in mean emotional regulation scores were statistically significant in favor of females, with a mean score of 60 for females compared to 58 for males. Similarly, differences in the dimension of cognitive reappraisal were statistically significant in favor of females, whereas differences in expressive suppression were significant in favor of males. Furthermore, the results indicated statistically significant differences in the mean mental health scores between males and females, in favor of females, with a mean score of 67 for females compared to 61 for males. There were also significant differences in mental health dimensions (effectiveness of social functions and freedom from depression), all in favor of females. However, there were no significant differences in the mean scores of the psychosomatic and anxiety-free dimensions. To examine the effect of age, a one-way ANOVA was conducted to determine whether age differences in mean scores for emotional regulation and mental health were significant (Table 4).

Table 4

ANOVA Results for Differences in Emotional Regulation and Mental Health Based on Age

		Sum of Squares	df	Mean Square	F	Sig.
Cognitive reappraisal	Between Groups	53.962	2	26.981	1.172	.315
	Within Groups	1773.038	77	23.026		
	Total	1827.000	79			
Expressive suppression	Between Groups	15.660	2	7.830	1.901	.156
	Within Groups	317.140	77	4.119		
	Total	332.800	79			
Emotional regulation	Between Groups	19.034	2	9.517	.411	.665
	Within Groups	1784.766	77	23.179		
	Total	1803.800	79			
Psychosomatic	Between Groups	96.679	2	48.340	5.198	.008
	Within Groups	716.121	77	9.300		
	Total	812.800	79			
Anxiety free	Between Groups	25.396	2	12.698	.812	.448
	Within Groups	1203.404	77	15.629		
	Total	1228.800	79			
Effectiveness of social functions	Between Groups	45.286	2	22.643	4.329	.017
	Within Groups	402.714	77	5.230		
	Total	448.000	79			
Depression free	Between Groups	24.679	2	12.340	2.030	.138
	Within Groups	468.121	77	6.079		
	Total	492.800	79			

Mental health	Between Groups	190.781	2	95.390	2.380	.099
	Within Groups	3086.019	77	40.078		
	Total	3276.800	79			

The results revealed statistically significant differences in the mean scores for the psychosomatic and social functioning effectiveness dimensions of mental health by age. No significant differences were found in overall mental health or its dimensions, nor in emotional regulation and its dimensions by age. For post hoc analysis, Scheffé's test was conducted. The significant differences in the psychosomatic dimension were between the age groups (20-40) and (41-60), in favor of the (20-40) group. Similarly, significant differences in the effectiveness of social functions favored the (20-40) age group. To answer the third question, which investigates differences between pet owners and non-pet owners, a t-test for independent samples was conducted (Table 5).

Table 5

T-test Results for Differences in Study Variables Between Pet Owners and Non-Pet Owners

variables		N	Mean	Std. Deviation	t	Sig.
Cognitive reappraisal	Pet care	80	33.25	4.809	7.506	.007
	Non-Pet care	138	13.11	6.048		
Expressive suppression	Pet care	80	25.80	2.052	31.534	< .001
	Non-Pet care	138	8.84	5.254		
Emotional regulation	Pet care	80	59.05	4.778	50.620	< .001
	Non-Pet care	138	21.95	9.556		
Psychosomatic	Pet care	80	15.80	3.207	15.039	< .001
	Non-Pet care	138	7.61	4.466		
Anxiety free	Pet care	80	15.80	3.943	59.905	< .001
	Non-Pet care	138	8.10	2.190		
Effectiveness of social functions	Pet care	80	18.00	2.381	41.413	< .001
	Non-Pet care	138	5.49	5.440		
Depression free	Pet care	80	15.20	2.497	36.692	< .001
	Non-Pet care	138	7.70	4.677		
Mental health	Pet care	80	64.80	6.440	15.392	< .001
	Non-Pet care	138	28.92	10.794		

The results indicated statistically significant differences in the mean scores of pet owners and non-pet owners for emotional regulation and its dimensions, as well as for mental health and its dimensions. All these differences favored pet owners, as shown in Table 5. The fourth question addressed the extent to which emotional regulation predicts mental health among pet owners. To explore this, a simple linear regression analysis was used (Table 6).

Table 6

The ANOVA results for the regression model's validity:

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1526.192	1	1526.192	68.001	< .001
	Residual	1750.608	78	22.444		
	Total	3276.800	79			

F value was 68.001 (p<.001), indicating that the regression model is suitable for explaining the relationship between emotional regulation and predicting mental health in pet owners. Based on this, regression analysis results were obtained (Table 7).

Table 7

Simple Linear Regression Results for Predicting Mental Health Based on Emotional Regulation

Independent Variable	Dependent Variable:	B	Beta	t	Sig.	R	R Square	Adjusted R Square
Expressive suppression	Mental heath	119.116	-.682	18.026	< .001	.682	.466	.459

The results demonstrate that emotional regulation significantly predicts mental health among pet owners. The calculated "T" value (18.026) and the associated probability value of less than .001 indicate the model's reliability. The coefficient of determination (R^2 = 0.466) indicates that emotional regulation accounts for 47% of the variance in mental health scores among pet owners.

Discussion and Conclusion

The results indicated that pet owners showed higher levels of emotional regulation and mental health. The findings were particularly evident in dimensions like emotional reappraisal, emotional suppression, anxiety, and depression free states, and effectiveness of social functions. These levels reflect the pet owners' ability to manage their emotions effectively. This aligns with previous studies; for example, Gee et al. (2017) found that interacting with pets supports emotional regulation and reduces anxiety. Similarly, Allen et al. (2001) found that consistent interaction with pets contributes to coping with difficult situations by improving psychological and physical responses during stress. In terms of psychological health, the findings are consistent with studies indicating that pets provide ongoing emotional support, thereby enhancing the overall mood. For example, Branson et al. (2017) and Stanley et al. (2014) confirmed how pet ownership is associated with lower levels of depression and loneliness. Additionally, Krause-Parello (2012) noted that pets could enhance feelings of emotional security and decrease anxiety symptoms. And from a social standpoint, McNicholas & Collis (2000) found that pets can serve as social facilitators, promote social interactions, and enhance the effectiveness of social functions, which positively affects mental health. The findings on differences in emotional regulation and mental health by gender and age revealed significant effects. In terms of gender, females showed greater emotional regulation than males in the emotional evaluation dimension, whereas males scored higher on expressive suppression. As for mental health, females outperformed males in each of the depression-free states and the effectiveness of social functions dimensions.

These results suggest that females may be more skilled at managing and regulating their emotions, which positively influences their mental health. This aligns with past studies, such as Allen et al. (2001), which highlight the impact of social and psychological factors on emotional regulation and mental health in females. Regarding age, differences were observed in both psychosomatic symptoms and social functioning effectiveness, favoring the younger age group (20-40) over the older age group. This reflects the influence of age on psychological and physical efficiency, a trend supported by studies on aging and its impact on mental health and emotional adaptability (McNicholas & Collis, 2000; Stanley et al., 2014). However, no significant age-related differences were found in mental health or its dimensions, or in emotional regulation or its dimensions, suggesting that age may affect only certain aspects of these variables. These results emphasize the importance of considering the interplay between demographic and psychological factors when studying emotional regulation and mental health. This study contributes to demonstrating the influence of gender and age on these variables. The results showed that pet owners exhibited higher levels of emotional regulation and mental health than non-pet owners across multiple dimensions. These findings align with past studies on the positive impact of pet ownership on mental health, such as Allen et al. (2001), which found that pet ownership can help lower blood pressure during stressful situations, underscoring the role of pets in reducing psychological distress. In addition, the study of Barker & Wolen (2008) showed that interacting with pets improves quality of life, hence reducing symptoms of anxiety and depression. Friedmann et al. (2023) further supported this by finding that pet ownership contributes to better long-term psychological adjustment, underscoring the

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psychological benefits of owning pets. This evidence emphasizes how human-pet relationships can boost emotional regulation and mental health. It also highlights the untapped therapeutic potential of animal care, which could play a larger role in society. In this context, incorporating pets into psychological support programs could enhance individuals' overall psychological well-being.

The results of the regression analysis revealed a positive relationship between the duration of interaction with pets and promoting mental health. This suggests that prolonged interaction with pets can significantly support mental health, especially for those who face psychological challenges. These results are in line with previous studies, which shed light on the role pets play in decreasing anxiety and depression levels. For instance, Friedmann et al. (2023) demonstrated that interacting with pets reduces anxiety symptoms and enhances mental stability. Barker & Wolen (2008) also indicated that pets improve psychological balance by providing consistent companionship and fostering feelings of security and comfort, as well as the study of Gee et al. (2017), which showed that pets can serve as protection factors against depression, especially among older people, by providing emotional support and a sense of belonging. However, personal differences, such as the type of pet or the level of attachment, can't be overlooked as they may influence the relationship. For example, some people may find that interacting with dogs provides greater feelings of security and companionship because of their social and interactive nature; others may prefer cats, which offer a sense of independence and calm. These personal differences highlight the need to consider them when designing therapeutic or intervention programs that aim to improve mental health through animal interaction. Adapting to individuals' needs and preferences may increase the effectiveness of these programs and make them more personalized. Future research could delve deeper into these factors and their contributions to psychological benefits such as stress reduction, mood enhancement, and improved feelings of companionship. The results also showed a positive relationship between duration of pet interaction and emotional regulation, although it was not as clear as its effects on mental health. This suggests that using pets to improve emotional regulation may be influenced by other factors, such as the nature of the interaction or the level of attachment to the animal. Past studies have supported this hypothesis, such as those by Latella et al. (2024), who found that pets may help improve stress management skills, which, in turn, indirectly support emotional regulation. However, the impact of pets on emotional regulation may be influenced by external factors, such as environmental context and attachment level, as Krause-Parello (2012) highlighted.

The results confirmed the significant role pet companionship plays in improving psychological well-being. This is consistent with previous studies, which have shown that pets are not just a source of entertainment and fun but also serve as practical tools for managing anxiety and stress and for enhancing feelings of happiness. Therefore, incorporating pets into therapeutic programs, especially for individuals suffering from social isolation or psychological distress, could yield substantial benefits. However, the relationship between pet ownership and emotional regulation appeared less pronounced in this study, suggesting that the benefits may be indirect or influenced by certain circumstances. Individuals with a strong bond to their pets may exhibit better emotional regulation, though this effect may vary across personal and social factors. Therefore, it is necessary to consider these factors when designing therapeutic programs to improve emotional regulation through pet-assisted therapy.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Ethical considerations in this study included the fact that participation was entirely optional.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors equally contribute to this study.

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