## The Impact of Pet Attachment on Chinese Women's Sense of Self-esteem, Mediated by Loneliness

*YiChan Bian, Davud Shahidi*

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## Abstract

This study investigates how pet attachment influences Chinese women's self-esteem, with loneliness examined as a mediating factor, addressing the growing relevance of pet companionship as a source of emotional support in contemporary China. Data were collected from 201 female pet owners across multiple provinces in northern and southern China between March and May 2025. All participants had continuously kept a pet for at least six months before the survey period. Participants completed a set of standardized questionnaires assessing pet attachment, loneliness, and self-esteem. Path analysis using multiple linear regression and the PROCESS macro tested the hypothesized relationships. The findings indicated that pet attachment exerted a positive direct effect on women's self-esteem, while loneliness demonstrated a negative direct influence with self-esteem. Furthermore, higher pet attachment was significantly linked to lower loneliness. Loneliness also served as a partial mediator, explaining the indirect effect of pet attachment on self-esteem. These findings highlight the dual role of pet companionship in enhancing women's psychological well-being, offering theoretical insight into non-human social support and practical implications for interventions aimed at promoting women's mental health.

**Introduction**

According to HealthforAnimals (2022), it is estimated that more than half of the global population owns a pet. Households in the United States, the European Union, and China alone keep over 500 million cats and dogs. In China, the relaxation of pet-keeping regulations and a declining birth rate have further fueled the growth of pet ownership, which increased by 113% between 2014 and 2019 (Goumin.com, 2020)，  as more people recognize and enjoy the psychological and social benefits of companion animals. Similarly, a Bloomberg report (2019) projected that the total number of pet cats and dogs in China would reach 248 million by 2024. Pets, once viewed primarily in practical terms, are increasingly regarded as emotional companions and family members in modern Chinese society (Xu et al., 2023).

Research indicates that pet attachment—emotional bonds between people and pets—is positively associated with quality of life and psychological well-being (Bakerjian, 2014; Zilcha-Mano et al., 2011). Pet ownership can reduce loneliness, which is a significant risk factor for depression and anxiety, and women are particularly vulnerable (Y. Chen, Hicks, & While, 2014). Prior studies suggest that women show higher levels of pet attachment than men (Mestre et al., 2009), and pet companionship may compensate for deficits in human social support, especially among women living alone (Zasloff & Kidd, 1994). Meanwhile, self-esteem, an important indicator of psychological well-being, is negatively linked with loneliness (Geukens et al., 2022), and women often report lower self-esteem compared with men (McMullin & Cairney, 2004).

Although women's social status in China has improved in recent decades, many continue to face disproportionate domestic responsibilities, which can lower self-esteem and contribute to mental health challenges (Yip et al., 2000; Zeigler-Hill & Myers, 2012). Because women's self-esteem is more strongly tied to interpersonal relationships (Kwang et al., 2013), the role of pet attachment in providing Women's self-esteem is worth examining. However, little research has explored whether pet attachment can enhance women's self-esteem by alleviating loneliness, particularly in the Chinese cultural context.

This study examined the relationship between pet attachment and women's self-esteem, focusing specifically on the mediating role of loneliness. This study aimed to fill an underexplored gap in the literature, highlighting the importance of companion animals for women's mental health and highlighting their potential relevance in clinical practice and community initiatives related to pet ownership.

## Literature Review

In traditional Chinese society, gender roles were deeply influenced by Confucian patriarchy. This system positioned women in subordinate roles within both their families of origin and their marriages (Shu et al., 2013). Women were expected to marry, bear children, and maintain family harmony, while their involvement in decision-making was often restricted. Although women's social status has improved with modernization, cultural expectations regarding domestic responsibilities remain strong.

Human-pet connections are also influenced by cultural context (Gray & Young, 2011). In the past, pets were prized in China for useful functions including property protection. However, in the last few decades, people have come to view pets as family members and emotional partners (Xu et al., 2023). Particularly among younger urban dwellers, the rise of pet culture reflects broader emotional demands, and the majority of pet owners in China are women (Goumin.com, 2020), and having a pet has been linked to lower stress levels and more emotional support (C. S. T. Wu et al., 2018). Loneliness has increased in China as a result of social changes such as the one-child policy, rapid urbanization, and a declining birth rate (J. Chen & Gong, 2022; N. Zhang et al., 2018). Many people in this situation view pets as close friends or family members who can offer consolation and lessen social isolation.

Attachment theory, introduced by Bowlby (1973), helps explain these dynamics. The theory describes the emotional bond between an individual and a caregiver, emphasizing behaviors such as seeking proximity and comfort during stress (Bretherton, 1999). This bond functions as both emotional support and a survival mechanism, offering a secure base that encourages exploration and resilience (Ravitz et al., 2010). Early caregiving experiences shape attachment styles, which in turn influence how people trust others, form intimate connections, and express emotions throughout life (Keller, 2013). The theory has also been applied to human–animal relationships. Pets can provide a stable sense of security and companionship (Beck & Madresh, 2008). Research shows that people benefit from close bonds with pets, and these relationships are often reciprocal. Companion animals not only display affection but also form enduring attachments to their caregivers (Archer, 1997; Wanser et al., 2019). Interactions with pets help individuals feel loved, accepted, and emotionally supported (Guo et al., 2024). Women, in particular, tend to form stronger attachments to their pets than men. They report higher levels of emotional closeness, companionship, and caregiving behaviors (Antonacopoulos & Pychyl, 2010; Mestre et al., 2009). Women also invest more time in pet care and engage in more intimate interactions, a tendency often linked to their higher levels of empathy (Cassels et al., 2017).

As defined by Perlman and Peplau (1981), loneliness is a distressing state that arises from the gap between desired and actual social relationships. It is a multifaceted emotional experience that stems from unmet needs for intimacy and belonging. Individuals who suffer from prolonged loneliness often experience negative emotions, withdraw from others, and find

it difficult to trust themselves and those around them (Ernst & Cacioppo, 1999). Loneliness is common among young people, especially women (West et al., 1986). Compared with men, women are generally more likely to feel socially isolated (Tiwari, 2013) and more sensitive to lack of social support (Geukens et al., 2022). During the COVID-19 epidemic, increased housework and care responsibilities made women's loneliness even worse (Barreto et al., 2025). Importantly, women's loneliness is not just a personal issue, but is also related to social, cultural, and economic factors, such as gender roles and family expectations (Khabibullaeva & Khabibullaeva, 2025).

Pet ownership may reduce these risks. Studies suggest that people with smaller social networks benefit most from keeping pets, as pets provide an alternative source of companionship (Kretzler et al., 2022). Women who own dogs, for instance, report lower levels of loneliness than those who do not (Hajek & König, 2020). Pet owners, especially dog and cat owners, also tend to spend more time in social activities (Kaivalya et al., 2023). Pets have even been described as a unique form of social support (Sakız et al., 2021). Research has shown that pet owners often develop stronger neighborhood ties (Wood et al., 2005) and report broader fulfillment of social needs beyond human interactions (McConnell et al., 2011). Serpell (1991) found that acquiring a pet led to improved self-reported health and increased physical activity among new owners. In summary, pets not only provide emotional companionship but also play a positive role in alleviating loneliness, promoting social interaction, and strengthening community connections. Especially for women with limited social networks, pets can become an important source of social support, contributing to improved mental health and overall well-being.

Self-esteem is a crucial concept here. It's an individual's assessment of self-value, covering beliefs of deserving love etc. (Brown & Marshall, 2006). James et al., 1890 conceptualized self-esteem as a balance between achievement and aspiration. High self-esteem is typically associated with positive self-views, whereas low self-esteem is often linked to negative outcomes such as depression (Isserow, 2023). Gender differences in self-esteem have been consistently observed. Across the life span, men tend to report slightly higher levels of self-esteem than women. Women's self-worth is often more dependent on external validation, such as recognition from others (Zeigler-Hill & Myers, 2012). Research has found that women show lower levels of social, academic, and physical self-esteem compared with men (Rentzsch et al., 2016). This pattern may be explained by social and cultural expectations. From an early age, women are encouraged to prioritize others' feelings and to seek harmony in relationships. Such expectations make women more likely to base their self-esteem on external feedback. By contrast, men are socialized to value independence and competitiveness, leading them to build self-esteem more on personal achievements (Sanchez & Crocker, 2005).

Loneliness and self-esteem are closely connected. Prolonged loneliness can reduce self-esteem and generate negative emotional states (Teneva & Lemay, 2020). Numerous studies confirm that the two variables are negatively correlated (Geukens et al., 2022; Sakız et al.,

2021). Individuals with low self-esteem may hesitate to seek new social connections, which in turn increases their loneliness. Conversely, higher self-esteem may encourage social interaction, enabling people to establish supportive networks that enhance both belonging and self-worth (Schulz et al., 2020). Interacting with animals can foster responsibility, care, and empathy, reinforcing positive values (Serpell, 1991). Cusack (2014) argued that pets live in the present moment, reminding their owners of the simple joys in life and helping shift attention away from self-centeredness. Research has confirmed that pet ownership can enhance self-esteem and well-being, particularly for individuals with initially low levels of self-esteem (Van Houtte & Jarvis, 1995). Overall, loneliness is closely related to self-esteem levels. Long-term loneliness can undermine self-esteem and bring about negative emotions, while higher self-esteem can promote positive social interactions and help build supportive interpersonal networks.

## Research Methodology

### Study Design and Participants

The research adopted a quantitative approach, employing correlational analyses and path analysis to explore relationships among pet attachment (independent variable), loneliness (mediating variable), and women's self-esteem (dependent variable). Participants were 201 Chinese female pet owners, aged between 18 and 60, who had raised pets for at least half a year. Recruitment was carried out through popular online platforms (Weibo, Xiaohongshu, and WeChat pet groups) using a convenience sampling strategy. A Priori power analysis with G*Power 3.1 (Faul et al., 2009) suggested that 107 cases would suffice ($\alpha = .05$, power = .95, effect size = .15); thus, the actual sample size exceeded the requirement, lending credibility to the study's generalizability. While the sample cannot fully represent the vast and diverse population of mainland China, participants were recruited from multiple provinces across northern and southern regions, covering varied age groups and educational backgrounds. This enhances the diversity of the sample, although caution is warranted when generalizing the findings to the entire population.

## Conceptual Framework

**Figure 1**

*Path Model Representing the Influence of Pet Attachment on Self-esteem, Mediated by Loneliness.*
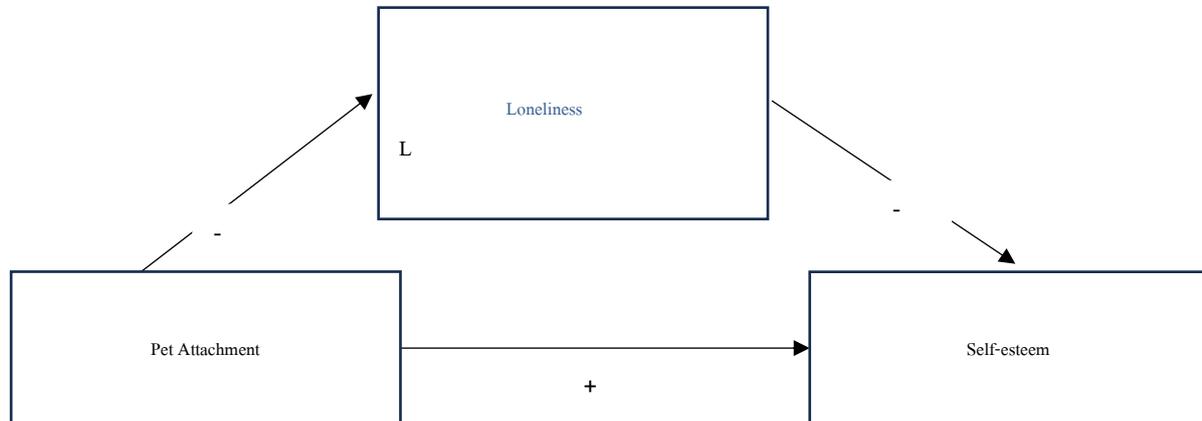


**Note:** The model proposes that pet attachment directly influences women's self-esteem and indirectly affects it through the mediating role of loneliness.

## Sampling Method

A convenience sampling method was employed. Participants were recruited through online platforms such as Weibo, Xiaohongshu, and WeChat pet groups. No incentives were offered, and participation was voluntary.

## Data Collection

Ethical approval was obtained from the Institutional Review Board of Assumption University prior to data collection. Participants were recruited online through Weibo, Xiaohongshu, and WeChat pet groups. They accessed the questionnaire via Wenjuanxing, an online survey platform, and provided informed consent before participation. All responses were anonymous, voluntary, and securely stored.

## Instruments

The study used a validated Chinese version of the questionnaire and tested its internal consistency. The questionnaire comprised four sections: (1) demographic information, (2) measures of pet attachment, (3) assessments of loneliness, and (4) evaluations of self-esteem.

## Lexington Attachment to Pets Scale (LAPS)

The Lexington Attachment to Pets Scale (LAPS, ; Johnson et al., 1992) was utilized in this study to gauge the closeness level between individuals and their pets. Widely used in empirical research, it's a reliable means to measure the emotional bond between humans and

companion animals (Hielscher et al., 2019). LAPS has 23 questions, divided into three areas: General Attachment, People Substitution, and Animal Rights/Animal Welfare. Questions 8 and 21 are scored in reverse. The answer is scored on a 4-point Likert scale, with 1 indicating "strongly disagree" and 4 indicating "strongly agree". The higher the score, the stronger the attachment to the pet. Previous studies showed strong psychometric properties for the Chinese version of the Lexington Attachment to Pets Scale (LAPS), with an overall Cronbach's α of 0.936 and a 2-week test–retest reliability of 0.828. This version was translated and validated by the research team (Fu & Zheng, 2009). This study adopted this Chinese adaptation. In this study, the scale exhibited high internal consistency, with a Cronbach's alpha of 0.925.

**ULS-8 Loneliness Scale (ULS-8)**

The measurement of loneliness in this study was conducted using the Chinese version of the ULS-8, a shortened form of the UCLA Loneliness Scale originally introduced by Hays and DiMatteo (1987). This scale has been validated in the Chinese context by Zhou et al. (2012). Evidence from Chinese populations has confirmed its reliability and validity (C. H. Wu & Yao, 2008; Zhou et al., 2012), and findings further suggest that the brief scale functions similarly to the original 20-item version in both accuracy and associations with mental health outcomes (Ip et al., 2024). The instrument includes eight items—two positively phrased and reverse scored— rated on a four-point scale (1 = never to 4 = always). Higher scores indicate greater loneliness; the range is 8 to 32. It is suitable for this study due to its conciseness and strong psychometric backing. In this study, the scale exhibited high internal consistency, with a Cronbach's alpha of 0.961.

**Rosenberg Self-Esteem Scale (RSE)**

The RSES (Rosenberg, 1965) measured individuals' self-esteem. A Chinese version translated and revised by Yeung (1998) has been widely applied in psychological and educational research and is recognized for its sound reliability and validity (F. Chen et al., 2015). The scale includes 10 items rated on a five-point Likert format, with higher scores reflecting a more positive self-evaluation. Previous studies with Chinese samples have reported good internal consistency, with Cronbach's α ranging from 0.77 to 0.84 (F. Chen et al., 2015). The present study adopted this Chinese version. In this study, the scale exhibited high internal consistency, with a Cronbach's alpha of 0.968.

**Data analysis**

Data analysis was done via SPSS 26. Firstly, descriptive stats were computed for participants' demographic details. Cronbach's alpha checked scale reliability. Then, Pearson's coefficients assessed associations. Multiple linear regressions tested predictive effects. PROCESS Macro examined loneliness' mediating role.

## Results

A total of 201 valid questionnaires were obtained from female pet owners after excluding invalid responses, yielding an effective response rate of 95.7%. Table 1 presents the demographic characteristics of the participants, including age, educational attainment, and types of pets owned. As shown in Figure 2, the majority of respondents were between 26 and 35 years old (40.3%), followed by those aged 18–25 (31.8%), with smaller proportions in the 36–45 (16.4%) and 46–60 (11.4%) age groups. In terms of pet ownership, cats were the most common (58.7%), followed by dogs (48.8%), birds (29.9%), and fish (14.9%). These distributions suggest that younger women, particularly those under 35, constituted the largest proportion of the sample, and that cat and dog ownership predominated among participants.

**Table 1**

*Demographic Characteristics of the Sample (N = 201)*

| Variable | Category | Frequency | Percentage (%) |
|---|---|---|---|
| Age | 18-25 | 64 | 31.84 |
| | 26-35 | 81 | 40.30 |
| | 36-45 | 33 | 16.42 |
| | 46-60 | 23 | 11.44 |
| Educational Attainment | Primary school and below | 11 | 5.47 |
| | Junior high school | 12 | 5.97 |
| | High school | 12 | 5.97 |
| | Secondary vocational school/college | 65 | 32.34 |
| | Undergraduate | 91 | 45.27 |
| | Master's degree or above | 10 | 4.98 |
| Type of Pet Owned | Cat | 118 | 58.71 |
| | Dog | 98 | 48.76 |
| | Bird | 60 | 29.85 |
| | Fish | 30 | 14.93 |
| | Others | 0 | 0.00 |

**Note:** Pet type data allowed multiple responses. Percentages reflect the proportion of respondents selecting each category.

**Figure 2**

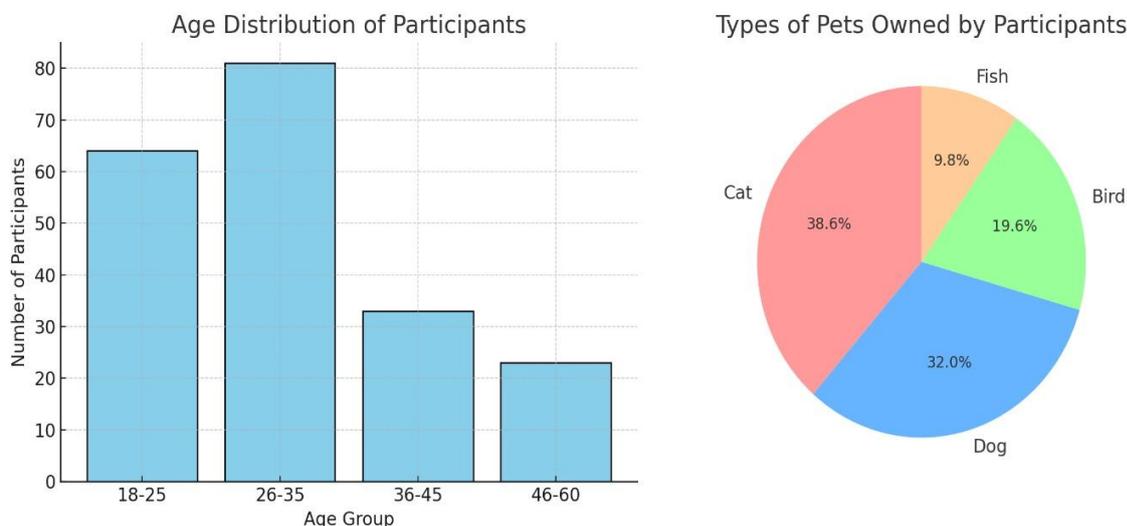*Age Distribution of Participants and Types of Pets Owned*



Table 2 presents the descriptive statistics and internal consistency reliability for the three main scales used in this study. The mean score of the Pet Attachment Scale was 2.18, indicating a moderate level of attachment to pets among female owners. The Loneliness Scale had a mean of 2.34, reflecting that respondents experienced a moderate degree of loneliness despite reporting some willingness to seek social interaction. The Self-Esteem Scale had a mean of 2.50, suggesting that the participants generally showed a moderate level of self-esteem with individual variations.

In terms of reliability, all Cronbach's α coefficients exceeded .90 (Pet Attachment = .925, Loneliness = .961, Self-Esteem = .968), which indicates excellent internal consistency for all three scales. These results confirm that the instruments were reliable and suitable for further statistical analysis.

**Table 2**

*Descriptive Statistics and Reliability of Main Variables*

| Scale | Items | M | SD | Cronbach's α |
|---|---|---|---|---|
| Pet Attachment | 23 | 2.181 | 0.45 | 0.925 |
| Loneliness | 8 | 2.339 | 0.51 | 0.961 |
| Self-Esteem | 10 | 2.499 | 0.49 | 0.968 |

The three main variables showed moderate but substantial relationships, according to the correlation analysis. While loneliness was negatively correlated with both self-esteem (r = –.343, p < .01) and pet attachment (r = –.480, p < .01), women who had a stronger attachment to their pets tended to report higher levels of self-esteem (r = .436, p < .01). Taken together, pet attachment is not only associated with higher self-esteem, but also alleviates loneliness, which can undermine an individual's self-esteem (See table 3).

**Table 3**

*Correlations Among Pet Attachment, Loneliness, and Self-Esteem*

|  | **Pet Attachment** | **Loneliness** | **Self-esteem** |
|---|---|---|---|
| Pet Attachment | 1 |  |  |
| Loneliness | -0.480** | 1 |  |
| Self-esteem | 0.436** | -0.343** | 1 |

**Note:** p < .05, p < .01

Regression analyses were performed to explore the links between pet attachment, loneliness, and self-esteem. The findings showed that pet attachment was a significant negative predictor of loneliness and a positive predictor of self-esteem, whereas loneliness negatively predicted self-esteem (see Table 4).

Further mediation analysis using PROCESS confirmed that loneliness acted as a partial mediator in the relationship between pet attachment and self-esteem. As illustrated in Figure 3, pet attachment not only exerted a direct effect on self-esteem but also an indirect effect through loneliness, indicating that stronger bonds with pets may reduce feelings of loneliness and, in turn, support higher self-esteem among female pet owners.

**Table 4**

*Regression and Mediation Analyses*

| Model | Predictor/Path | B | β | t | p | R² / 95% CI |
|---|---|---|---|---|---|---|
| Regression 1 (DV = Loneliness) | Pet Attachment | -0.705 | -0.480 | -7.728 | < .001 | R² = .231 |
| Regression 2 (DV = Self-Esteem) | Pet Attachment | 0.525 | 0.352 | 4.901 | < .001 | R² = .213 |
|  | Loneliness | -0.177 | -0.174 | -2.422 | .016 |  |
| Mediation | Total effect | 0.650 | 0.436 | — | < .001 | 95% CI [.463, .836] |

| Model | Predictor/Path | B | β | t | p | R² / 95% CI |
|---|---|---|---|---|---|---|
| | Direct effect | 0.525 | 0.352 | — | < .001 | 95% CI [.314, .736] |
| | Indirect effect | 0.125 | 0.084 | — | .002 | 95% CI [.003, .167] |

**Note:** B = unstandardized regression coefficient; $\beta$ = standardized regression coefficient; * p < .05, ** p < .01.

**Figure 3**

*Mediation Effects of Pet Attachment on Self-esteem via Loneliness, with Unstandardized Coefficients (B) and 95% Confidence Intervals*
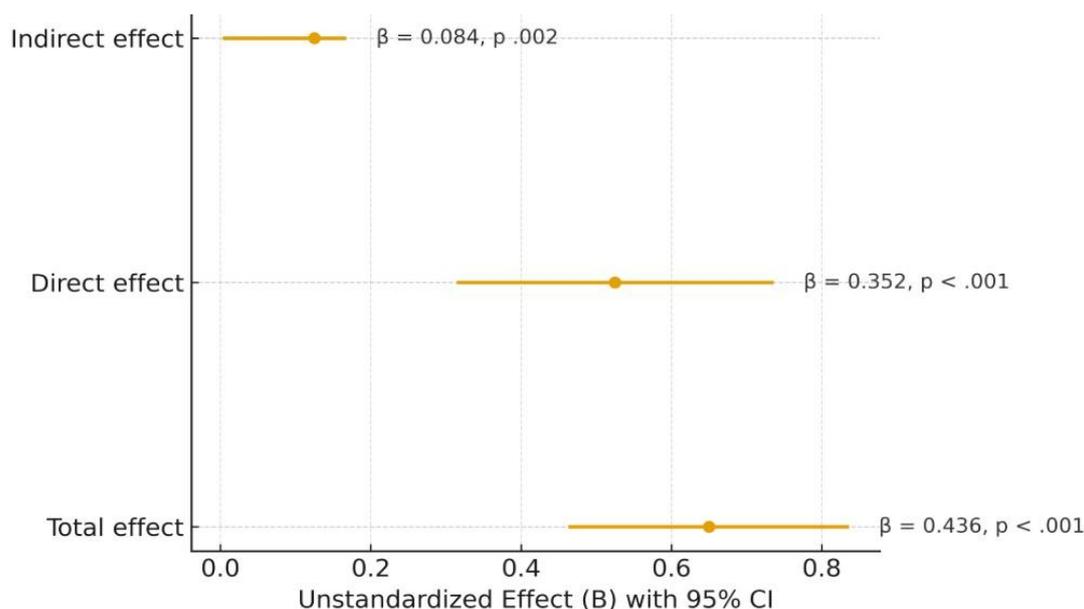


## Discussion

Using a sample of 201 Chinese female pet owners, this study examined the relationships among self-esteem, loneliness, and pet attachment. The findings showed that pet attachment significantly and positively predicted self-esteem, consistent with previous research indicating that pet owners generally report higher self-esteem than non-owners (McConnell et al., 2011). Pets serve as stable emotional partners that provide unconditional acceptance, thereby enhancing women's self-perception and sense of belonging (Archer, 1997; N. Zhang et al., 2018). In the context of traditional Chinese society, where Confucian patriarchy has historically emphasized women's subordination within family and marital roles (Shu et al., 2013), these findings are particularly relevant. Despite modernization, women's self-worth is still influenced by cultural norms surrounding marriage, parenthood, and household duties. Therefore, by providing companionship and psychological support, pets may serve as substitute sources of

emotional fulfillment, balancing these cultural demands (Antonacopoulos & Pychyl, 2010; Xu et al., 2023).

The study also found that pet attachment was a significant negative predictor of loneliness ($\beta = -0.480$, $p < .01$), while loneliness negatively predicted self-esteem ($\beta = -0.174$, $p < .05$). These results are consistent with earlier studies showing that self-esteem is negatively related to loneliness (Al Khatib, 2012; Geukens et al., 2022). Within the Chinese cultural context, women's self-esteem is often closely tied to their family and marital status (Zhan & Montgomery, 2003), and collectivist social norms may exacerbate the effects of social comparison (Triandis, 2001). Participants in this study were predominantly young women aged 18–35, a developmental stage characterized by identity formation, career development, and intimacy exploration (Erikson, 1956, 1994). These women may not yet have stable social support networks, making them more vulnerable to loneliness while also more reliant on pets for stable emotional companionship.

Mediation analysis confirmed that loneliness partially mediated the relationship between pet attachment and self-esteem ($\beta = 0.084$, $p < .05$). Participants demonstrated moderate levels of loneliness (M = 2.339), yet also reported willingness to engage in social interaction, with relatively high scores on items such as "I can find companionship when I need it." These findings suggest that pets can supplement social support by reducing feelings of isolation and strengthening community connections, consistent with earlier research highlighting the role of pets as a unique form of social support (Fu & Zheng, 2009; McConnell et al., 2011). Although some women in this study still reported experiencing interpersonal alienation, pets appeared to serve as emotional bridges, alleviating isolation and providing a sense of stability amid cultural and social pressures.

## Conclusion and Recommendations

The findings of this study demonstrate that pet attachment significantly enhances women's self-esteem both directly and indirectly by alleviating loneliness. For many Chinese women, especially those navigating the competing pressures of family responsibilities, career development, and cultural expectations, pets provide critical emotional companionship and support. These results underscore the potential of human–pet relationships as meaningful contributors to women's psychological well-being.

From a practical perspective, these findings suggest several implications. Mental health practitioners may consider incorporating pet companionship into counseling and intervention strategies for women struggling with loneliness or diminished self-esteem. Encouraging women to recognize the supportive role of pets could provide a supplementary avenue for emotional regulation and resilience. At the community and policy levels, initiatives that promote pet-friendly environments and responsible ownership—such as public adoption programs,

community pet care services, and pet-inclusive housing—could expand access to the psychological benefits of pet companionship.

In sum, this study enriches the understanding of the relationship between pet attachment, loneliness, and women's self-esteem within the Chinese cultural context. Pets not only provide direct emotional companionship but also function as bridges to social connectedness, thereby alleviating loneliness and enhancing self-worth. By recognizing and supporting these dynamics, both practitioners and policymakers may better address the mental health needs of contemporary women.

## Research limitations

This study has several limitations. The sample was primarily online-recruited female cat and dog owners with higher education, which may limit generalizability and introduce self-selection bias. The cross-sectional, self-report design restricts causal inference and may be influenced by social desirability. Single-scale measures, though reliable, may not capture the full complexity of the variables. Potential confounders, including personality, mental health history, interpersonal relationships, and marital status, were not examined. Finally, the researcher's personal experience with pets may have influenced interpretation despite efforts to remain objective. Future studies should consider longitudinal, multi-method designs and broader, more diverse samples.

## Recommendations for future research

Future studies should consider using longitudinal designs to follow participants over time. This approach would help clarify whether the benefits of pet attachment on women's mental health, particularly improvements in self-esteem, are sustained in the long term. Researchers could also adopt mixed-method strategies. Combining self-report questionnaires with interviews or behavioral observations may provide richer insights into how women emotionally interact with their pets.

It is also important to broaden the demographic scope of participants. Including women from rural areas, different age groups, unmarried or childless women, and individuals from diverse cultural backgrounds could improve the generalizability of the findings and highlight subgroup differences. In addition, future research may explore potential moderating factors, such as the type of pet, duration of ownership, living arrangements, or individual attachment style. Examining these variables could clarify the conditions under which pet attachment is most beneficial for women's mental health.

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