STUDIA UBB PSYCHOL.-PAED., LXX, 2, 2025, p. 29-66
(Recommended Citation)
DOI:10.24193/subbpsyped.2025.2.02

The Role of Pet Attachment, Emotion Regulation and Perceived Parental Practices in Adults' Psychological Well-Being. A Pilot Study

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ABSTRACT. Psychological well-being is widely regarded as a robust indicator and precursor of mental health. It is shaped by personal (e.g., emotion regulation strategies) and interpersonal factors, as well as life experiences encountered during development (e.g., used parental practices, emotional climate in the family, quality of social ties, etc.). Supportive parenting in childhood promotes better life-long mental health, whereas controlling or neglectful parenting practices increase vulnerability. Adequate attachment to pets may buffer unmet needs of belonging and foster resilience. The major objective of the present pilot study was to investigate the relationship and explicative power in adult psychological well-being of remembered early parental practices, pet-related variables (childhood desire for pet, current pet ownership) and adult psychological mechanisms, such as cognitive emotion regulation strategies and current attachment to pets. A total of 196 female participants were included in the study and were assessed along the following dimensions: psychological well-being, remembered parental practices, cognitive emotion regulation strategies (CERQ), current pet attachment, childhood desire to have pets, current pet ownership. We conducted three 2x2x2 ANCOVAs examining the dichotomized version (low vs. high) of each of the three remembered parental practices (warmth, rejection, overprotection), childhood desire to have pets (desired and owned vs. desired and not owned), and current pet ownership (yes-no), with emotion regulation strategies and current pet attachment entered as covariates, on psychological well-being. Across the tested models, adaptive and maladaptive cognitive emotion regulation strategies emerged as the most powerful predictors of adult psychological well-being. We also found that pets may function as significant emotional resources, especially for those participants who remember to have experienced high levels of parental rejection in childhood. The results of this study may have valorous

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theoretical and practical implications by shedding further light on the relative importance of distal (remembered parental practices) and proximal factors (emotion regulation strategies, current pet ownership) in predicting psychological well-being.

Keywords: psychological well-being, parental practices, emotion regulation, pet ownership, pet attachment.

According to the global Burden of Disease Study (GBD, 2019), the investigation of mental health related factors has become increasingly important in the early 21st century. This growing scientific attention is partially attributable to observed increases in dysfunctions deriving from inadequate adaptation to the major changes in human life circumstances (e.g., better daily life-conditions in most parts of the world, more facile access to education and health-care, but also more frequent climate-change related stressors, economic insecurity and polarization, increases in job strain, social disconnection, health problems derived from intense digitization, secularization of value systems) (Fassi et al., 2024; Halman & van Ingen, 2015; Karanikolos et al., 2013; Man et al., 2022; Romanello et al., 2021; Van Daalen et al., 2024). As the rising trends in mental dysfunctions (stress, anxiety, depression) indicate, a significant number of individuals do not always employ the adequate means to efficiently confront these challenges (Kieling et al., 2024; McGorry et al., 2024; Mewes et al., 2021; Paul & Moser, 2009). Failure of successful confrontation with these provocations has significant consequences not only on the individual's physical/psychological/social functioning and quality of life, but also imposes significant costs on society (GBD, 2019; Greenberg et al., 2021; Zhang et al., 2023).

Mental health, both a necessity and a "basic human right" (WHO, 2022, p. xiv), encompasses (*i*) the absence of symptoms (e.g., anxiety, depression), and (*ii*) the presence of positive functioning (emotional, psychological and social well-being) (Westerhof & Keyes, 2009), and it becomes highly important for individual functioning and for national economies as well. Under the present life-conditions, a salient question concerns what constitutes a well-lived life. A key component involved both in the experiencing and maintenance of mental health and optimal functioning is represented by the concept of well-being, mostly conceptualized as a combination of emotional, psychological and social well-being (Keyes & Lopez, 2002; Keyes et al., 2020; Ryff, 2023). Emotional well-being usually is associated with the presence of positive and absence of negative emotions, as well as satisfaction with life (Kahneman et al., 1999). On the other hand, psychological (eudaimonic: purpose, autonomy, personal growth) and social (integration, coherence) well-being go beyond the ephemeral experiences

of positive affective states. In research they may be considered both as indicators of positive mental health and mechanisms that build and sustain capabilities necessary for long-term optimal functioning (Pedrotti et al., 2025; Ryff, 2014).

Adult well-being is closely related to how people remember the emotional climate of their childhood. The way individuals recall their parents' behavior toward them during childhood shapes the way mental health develops across the lifespan. Research indicates that supportive parenting practices foster healthier emotional functioning, while controlling or neglectful practices increase long-term vulnerability (Harris et al., 2017; Lan & Wang, 2023; Orth et al., 2015). Empirical evidence also suggests that unmet belonging needs may be buffered by adequate attachment to pets in childhood, as animal companions may provide secure, comforting relationships that may support resilience in adulthood (Beetz et al., 2012; Hawkins et al., 2022; Lindsey, 2021).

INTRODUCTION

Psychological well-being

Many contemporary approaches to psychological well-being (PWB) draw on Aristotle's (2014) view of eudaimonia (i.e., the highest human good), conceived as activity in accordance with human virtues, distinguishing these endeavors from momentary states of pleasure (Ryan & Deci, 2001; Ryff, 2014). Based on the analysis and points of consensus of the prior literature on this topic (e.g., Erikson, 1959; Maslow, 1968; Rogers, 1961), Ryff (1989) proposed a theory-driven, six-dimensional model of psychological (eudaimonic) well-being (Ryff et al., 2021). Each of the six dimensions (positive relations with others, purpose in life, personal growth, self-acceptance, autonomy, environmental mastery) represents capacities needed to adapt to challenging situations in which people try to thrive (Ryff et al., 2021). The dimension of *positive relations with others* has to do with the capacity to understand the importance of trust and reciprocity in human relationships, and to act with empathy and affection to build and maintain close relationships. This component of PWB usually functions as a protective factor in adverse confrontations as well (Acoba, 2024; Wang et al., 2021). Those who score high on this component of PWB usually report superior psychological and social functioning (Mertika et al., 2020; Ryff, 2023). *Purpose in life* reflects one's capacity to find direction, sense and meaning in past and present life, thus facilitating the development and maintenance of objectives and motivation even in harsh circumstances. This component of PWB was found to be associated with better psychological functioning (Boreham & Schutte,

2023; Sutin et al., 2024). *Personal growth* encompasses the feeling that one can continuously develop, being important in trying to reach one's potential. Those people who frequently experience personal growth have the conviction that improvement is always possible. This makes them more open to new experiences, which in turn foster mental health (Ryff, 2023). *Self-acceptance* refers to the non-judgmental acceptance of oneself, i.e., the integration of positive and negative qualities and development of a positive attitude towards the self, thus facilitating positive feelings about one's past life. Higher levels of self-acceptance are usually associated with better mental and emotional functioning (Cordaro et al., 2024; Huang, 2025; Ruan et al., 2023). *Autonomy* represents one's capacity to regulate emotions and behaviors from within, according to personal standards. Those who score high on this component of PWB are more resistant to the pressures of society, thus being able to function well independently, with self-determination (De-Juanas et al., 2020; Ryff, 2023). *Environmental mastery* refers to one's competence to create and manage personal environment and effectively use forthcoming opportunities in accordance with personal values (Misuraca et al., 2024; Nezlek et al., 2025; Ryff et al., 2021). Research indicates that those persons who report higher levels of environmental mastery, personal growth and autonomy tend to react more adaptively during hardships (De-Juanas et al., 2020; Ryff, 2014).

A plethora of research demonstrates a significant relationship between psychological well-being and emotion regulation strategies (Aka & Gencoz, 2014). Individuals who habitually use adaptive emotion regulation strategies (e.g., positive reappraisal, acceptance) report higher life satisfaction, greater optimism, and fewer symptoms of mental illness (Garnefski & Kraaij, 2006; Troy et al., 2010). In contrast, those who heavily rely on maladaptive emotion regulation strategies (e.g., rumination, catastrophizing) tend to experience more intense negative affect, decreased well-being, and greater vulnerability to psychopathology (Aldao et al., 2010). Aldao et al. (2010) further found that emotion regulation strategies account for a substantial amount of variance in mental health outcomes, suggesting that the way people manage emotions matters as much as the confrontation with the adverse events themselves.

Several studies indicate that the capacity to adequately manage affective states is a critical predictor of well-being (Balzarotti et al., 2016; Sanchez-Sanchez et al., 2025), while other research suggests that greater baseline well-being fosters the use of more adaptive emotion regulation strategies (Gross & John, 2003; Keyes et al., 2002; Ryff & Singer, 2008). More recent longitudinal studies document a bidirectional relationship and provide support for the existence of a positive feedback loop between psychological well-being and emotion regulation strategies (Schwarzer et al., 2024).

Emotion regulation strategies

According to Gross and Thompson (2007), emotion regulation (ER) strategies refer to those processes through which people influence when and which emotions they have, and how they experience and manifest them, thus including the capacity to monitor, evaluate and change emotional reactions. ER strategies may be both conscious and automatic and can manifest before (antecedent-focused) or after (response-focused) the emotion arises.

From a theoretical standpoint, models such as Gross's Process Model of Emotion Regulation (1998) provide a framework for understanding how individuals engage with emotions across a timeline, from situation selection and modification to attentional deployment, cognitive change, and response modulation. These stages help illustrate why early and flexible engagement with emotions is more effective than late-stage suppression, which often worsens emotional outcomes. Despite increased awareness, emotion regulation is not equally developed across individuals or supported within societal systems. Furthermore, cultural norms often discourage open emotional expression, especially among certain genders or communities, reinforcing maladaptive strategies like avoidance or internalization (Gross & Thompson, 2007).

Another approach to ER strategies is that of Garnefski and colleagues (Garnefski et al., Garnefski & Kraaij, 2006; Kraaij & Garnefski, 2019) who propose a 9-dimensional cognitive and a 5-dimensional behavioral ER model. The same authors have also developed psychometrically sound instruments to measure both major types of strategies (CERQ-Cognitive Emotion Regulation Questionnaire, and BERQ-Behavioral Emotion Regulation Questionnaire).

Cognitive emotion regulation strategies were defined as "*the cognitive way of managing the intake of emotionally arousing information*" (Garnefski et al., 2001, p. 1313), and identify nine major cognitive emotion regulation strategies that were grouped on theoretical considerations in two groups: (i) *adaptive/functional* (*acceptance* = reconciliation with the confrontation and implications of the adverse event; *positive refocusing* = the capacity to focus on other events in order to distract thinking from the present confrontation; *refocus on planning* = the ability to identify actions that could facilitate the confrontation with the negative event; *positive reappraisal*= finding positive aspects in an adverse confrontation, thus sustaining personal growth; *putting into perspective* = reducing the gravity of an event by comparing it to other, more important situations), and (ii) *maladaptive/dysfunctional* (*self-blame* = blaming oneself for the occurrence of the negative event; *rumination* = repetitive thoughts and feelings related to the adverse confrontation; *catastrophizing* = exaggerating the implications of the stressful situation and/or its consequences;

other-blame = attributing the causes of the adverse event and/or its consequences to others) strategies. Research indicates that adaptive strategies are related to better adjustment, resilience and psychological well-being, while maladaptive strategies may lead to serious psychological dysfunctions (anxiety, depression, distress) (Domaradzka & Fajkowska, 2018; Kraiss et al., 2020; Nolen-Hoeksema et al., 2008; Sanchez-Sanchez et al., 2025; Schäfer et al., 2017; Yu & Liu, 2025).

The way adults regulate their emotions is highly dependent on their emotion regulation current competences as well as early childhood experiences, particularly the emotional climate of the household. Parents, siblings, friends, society, but also animal companions may participate in the process of emotion regulation and co-regulation (Hawkins et al., 2022; Lindsey, 2021). Families offering supportive caregiving foster adaptive emotion regulation strategies, while rejection and overprotection was found to be linked to frequent use of emotion regulation strategies that thwart adaptation both in short- and long-term (Chaplin & Mauro, 2022). In the case of children and adolescents who live in emotionally unstable and inconsistent families, the presence of a companion animal may be a significant source of comfort and security, participating in the process of emotion co-regulation (Beetz et al., 2012).

Next, we will present in more detail the concepts of parental practices and pet-attachment and their relationship with psychological well-being and emotion regulation strategies**.**

Parental practices

Parenting appears to be a pivotal factor in shaping children's cognitive, emotional and social development, influencing their well-being and personality all throughout their lifespan (Belsky & Cassidy, 1994; Chaplin & Mauro, 2022). Parental practices are mostly defined as a set of behaviors involving caring for, guiding and educating children, to prepare them for the roles they will play both in society and their personal lives (Alwin, 2004). From birth, early interactions with caregivers lay the foundation for affect regulation, cognitive schemas and behavioral patterns, as well as form internal working models that influence later interpersonal relationships and psychological functioning (Bowlby, 1982; Rohmalimna et al., 2022).

Parental practices are often conceptualized along specific dimensions, including emotional warmth, rejection, and overprotection (Arrindell et al., 1999). While these practices may exist within broader parenting styles, each dimension exerts distinct and measurable effects on developmental outcomes (Goagoses et al., 2023).

Parental emotional warmth, as described by Liu and Wang (2021) and Tani et al. (2017), encompasses admiration, approval, unconditional affection, and consistent responsiveness to a child's needs. This emotional warmth manifests in parental behaviors such as praise, interest in the child's activities, and emotional availability (Buckley et al., 2024). It facilitates secure attachment relationships, which in turn promote self-regulation, empathy, and resilience (Pastorelli et al., 2021; Parsons et al., 2010). Furthermore, it serves as a protective factor against adverse experiences, fostering trust, reciprocity, and a positive self-concept (Anthony et al., 2019; Pinquart & Gerke, 2019).

In contrast, *parental rejection* is characterized by inattentiveness, criticism and emotional unavailability. This often leads to emotional deprivation and psychological maladjustment (Rohner et al., 2005; Wu et al., 2023). From the sociometer theory of self-esteem (Leary, 2012), rejection signals interpersonal devaluation, diminishing self-esteem, and increasing vulnerability to internalizing problems. Empirical research links perceived rejection to lower resilience (Parental Acceptance-Rejection Theory; Rohner et al., 2005), reduced emotional intelligence, and higher risk for negative self-schemas (Campos et al., 2013; Jopling et al., 2020).

Parental overprotection involves excessive control, intrusion, and restriction of a child's autonomy beyond their developmental needs (Bernstein & Triger, 2010; Parker et al., 1979). While often motivated by concern for safety, overprotection can limit opportunities for competence-building and independent problem-solving (Ungar, 2009). Manifestations of overprotection include excessive monitoring, disapproval of friendships, unsolicited assistance, and overindulgence (Gumber et al., 2024). Theoretical perspectives, such as Self-Determination Theory, suggest that thwarting autonomy and competence needs can impair motivation, resilience and emotional adjustment (Ryan & Deci, 2001). Empirically, overprotection has been associated with increased internalizing problems (Segrin et al., 2013) and, in some cases, elevated antisocial behaviors (Arslan et al., 2023).

Parenting dimensions operate within diverse cultural, familial, and contextual frameworks. For instance, in families affected by paternal alcoholism, children often report lower parental warmth and higher rejection (Suneel et al., 2022). Cultural context also shapes the meaning and impact of parenting practices. In collectivist societies, gender norms may influence differential treatment, with girls receiving more warmth and boys experiencing stricter discipline (Barnhart et al., 2013; Craig, 2006). Across contexts, maternal and paternal roles may differ in emotional involvement and behavioral expectations, though some studies find parallel patterns of overprotection and warmth across parents (Fagan et al., 2014). Furthermore, developmental outcomes associated with these practices extend beyond childhood. Longitudinal evidence suggests

that warmth predicts higher self-esteem and psychological well-being into adolescence and adulthood (Harris et al., 2017; Orth et al., 2015), while rejection forecasts poorer mental health and maladaptive coping (Lan & Wang, 2023). The long-term effects of overprotection remain inconsistent, with some evidence for short-term impacts on internalizing symptoms but weaker longitudinal associations (De Roo et al., 2022). Nonetheless, empirical evidence suggests that parental practices are strongly associated with emotion regulation. For instance, a warm and supportive parent-child relationship establishes a secure relational context that promotes optimal emotion regulation and empathic capacities (Pastorelli et al., 2021). Conversely, parental overprotection constrains children's autonomy, reducing self-efficacy and limiting their ability to acquire adaptive coping strategies (Segrin et al., 2013).

Empirical findings indicate that unmet needs for belonging in childhood may be buffered by adequate attachment to pets, as animal companions can offer secure and comforting relationships that foster resilience and well-being into adulthood (Beetz et al., 2012; Hawkins et al., 2022; Lindsey, 2021).

Pet attachment

Human-animal relationships have existed for millennia, evolving from primarily utilitarian roles to emotionally significant bonds, with companion animals, such as dogs and cats, holding a special place in these relationships (le Roux & Wright, 2020). Archaeological and anthropological evidence demonstrates that these relationships have served functional purposes across cultures for thousands of years (Boonzaier, 1997; le Roux & Wright, 2020), whereas, in modern contexts, pets are frequently viewed as family members, while their owners constantly invest considerable time, money, and emotional energy in their care (Adrian et al., 2009).

The concept of pet attachment explores the emotional bond between humans and their companion animals, mirroring elements found in human-human relationships (Blanchard et al., 2024). This bond includes proximity seeking, a secure base, a safe attachment figure, and separation distress (Zilcha-Mano et al., 2011). Pets can serve as attachment figures, providing comfort, security and emotional support, especially during stressful times (Zilcha-Mano et al., 2012). Attachment theory (Bowlby, 1982) has been applied to human-animal relationships as well, suggesting that secure attachment to pets may enhance well-being (Teo &Thomas, 2019). However, insecure attachment, characterized by anxiety or avoidance, may influence owner behavior and emotional responses differently (Zilcha-Mano et al., 2011). Measuring these bonds is crucial and tools such as the Lexington Attachment to Pets Scale (LAPS)

(Johnson et al., 1992) operationalize these attachment relationships, enabling research on cultural, demographic, and psychological correlates. Johnson et al. (1992) define pet attachment as a reciprocal interaction and emotional connection between family members and their pets. This relationship involves mutual attention and dependence between the owner and their pet. The LAPS proposes that pet attachment comprises three dimensions: *general attachment* (e.g., feeling happy near pets, spending time with them and believing they understand emotions); *people substituting* (e.g., the role of pets in the owner's life); and *animal rights/animal welfare* (e.g., the status of pets in the owner's home, expressed through individual knowledge and views on their rights and welfare).

Empirical research has shown a considerable, but not systematic link between human-pet attachment and various psychosocial benefits. These benefits include emotion regulation, increased social support, reduced loneliness, as well as physiological changes such as decreased blood pressure and cortisol, and increased levels of oxytocin (Barker et al., 2010; Friedmann et al., 2011; Hawkins et al. 2022). Pets can also enhance owners' self-esteem, life satisfaction, and coping capacity (Crawford et al., 2006; Hart & Yamamoto, 2015), although findings are not universally consistent. For instance, while some studies suggest a positive association between higher attachment and lower perceived stress (Lee & Chai, 2015; Wu et al., 2018), others have found no significant relationship between pet attachment and stress levels (Koontz, 2009; Wen Li et al., 2017). Beyond the direct benefits, attachment to pets indirectly promotes well-being through enhanced social connectedness (Brooks et al., 2018). Pets serve as social catalysts, aiding individuals in forming new human connections and fostering community engagement. Research found that pet ownership increases the likelihood of interactions within neighborhoods, facilitating friendships and informal social networks (Wood et al., 2015). Enhanced social support systems, fostered indirectly by pets, represent protective factors against depression, anxiety, and loneliness (McConnell et al., 2011). Nonetheless, pet attachment provides adults with an accessible, practical, and emotionally fulfilling way of managing daily stressors, contributing to a more balanced and emotionally stable life.

Demographic factors appear to influence pet attachment, although results are inconsistent across studies. Women often report higher attachment scores with pets than men do, possibly due to socialized caregiving roles (Andreassen et al., 2013; Martens et al., 2016). Single individuals and those without children frequently demonstrate higher attachment, sometimes viewing pets as fulfilling nurturing roles (Bodsworth & Coleman, 2001; Peterson & Engwall, 2019). Species differences are also noted: dogs generally elicit higher attachment scores than cats, possibly due to their behavioral responsiveness

and sociability (Sandøe et al., 2023). Cultural variations further shape pet attachment patterns. For example, in France, adapting the LAPS revealed that household composition, education, and gender influenced attachment differently compared to other countries, reflecting localized meanings of "pet" and varying norms of animal care (Blanchard et al., 2024). Lastly, although human-animal bond research has proliferated, findings on the influence of pet attachment on mental health are mixed. Some studies emphasize clear therapeutic benefits, such as reduced loneliness, lower depression, and enhanced social support (Beetz et al., 2012; Borgi et al., 2020; Ein et al., 2018), whereas others caution that excessive pet dependency may reflect or exacerbate underlying attachment insecurities (Zilcha-Mano et al., 2011). Despite substantial evidence of positive associations between pet attachment and psychosocial well-being, findings remain mixed, indicating the need for context-sensitive research. Variability in outcomes may depend on the interplay between attachment style, cultural expectations, demographic characteristics, and the specific role the pet plays in the owner's life.

The prerequisites of mental health – such as adaptive psychological reactions (e.g., emotion, behavior regulation) and well-being – are mostly shaped by the emotional climate in the family one is raised, with parenting practices playing a pivotal role in this process across development (Morris et al., 2007). Recent research shows that all around the world, the way adults consider the quality of the relationship they had in childhood with their parents and caregivers has a life-long importance in contouring their mental health (Rothwell & Davoodi, 2024). Parenting appears to be a pivotal factor in shaping a child's cognitive, emotional and social development, influencing their well-being and personality all throughout their lifespan (Belsky & Cassidy, 1994; Chaplin & Mauro, 2022). Furthermore, one of the most fundamental human motivations, the need to belong, is also experienced and shaped within the family context (Baumeister & Leary, 1995). Warm, responsive parental reactions help children develop appropriate emotion regulation strategies and sustain well-being, while harsh, controlling or neglectful parental practices increase long-lasting vulnerability for psychological maladjustment (Cui et al., 2014; Cui et al., 2022; Morris et al., 2007). In this way, parents, with the specific actions, strategies and behaviors they use in daily interactions can satisfy or undermine their children's need to belong (Allen & Miga, 2010). Literature indicates that thwarted needs may have significant long-term consequences for interpersonal relationships and mental health across the life-span (Allen & Tan, 2016; Cui et al., 2020). Fortunately, our needs to belong may not exclusively be met by humans. Along evolution, companion animals, religious, cultural practices (e.g., through shared identity by group belonging), etc. (Allen & Tan, 2016; Chen & Li, 2021; Herzog, 2014;

Lu, 2025; McCornell et al., 2011) proved to be useful substitutes for satisfying belonging. More specifically, companion animals in childhood may help children develop social and emotional skills that foster better adaptation in adulthood (Wanser, 2019). Thus, owning pet(s) in childhood may offer secure relationships based on trust, a sense of meaningful connection, and emotional comfort and may become significant attachment figures (Kurdek, 2009). Consistent retrospective and longitudinal research indicate that adequate (i.e., secure) attachment to pets may have a buffering role in stressful situations, thus enhancing mental health and well-being (Beetz et al., 2012; Northrope et al., 2025; Zilcha-Mano, et al., 2011).

OBJECTIVES

The major objective of the present pilot study was to investigate the relationship and explicative power in adult psychological well-being of remembered early parental practices, pet-related variables (childhood desire for pet, current pet ownership) and adult psychological mechanisms, such as cognitive emotion regulation strategies and current attachment to pets.

STUDY

Design

The current study employed a cross-sectional, correlational design with three analyses of covariance. The dependent variable consisted of psychological well-being, independent variables were parental practices (parental emotional warmth, parental rejection, and parental overprotection), childhood desire for pet and current pet ownership, and covariates were cognitive emotion regulation (adaptive and maladaptive), and pet attachment (general attachment, and people substituting).

Procedure

The research protocol of the present study was approved by the Ethics Committee of the Babes-Bolyai University, Cluj-Napoca, Romania [Research Ethics Approval No. 356/26.03.2025). Data was collected via an online questionnaire consisting of the instruments presented in the Materials section and administered through Google Forms. The link was disseminated by posting an invitation on social media platforms (such as Facebook and Instagram) and

university-affiliated groups (WhatsApp), encouraging participants to share the link with others. Upon accessing the survey link, participants first saw a brief introduction explaining the purpose of the study and what the participation entailed. Afterwards they were presented with a consent form. Those who agreed to participate (by checking the consent box) proceeded to the questionnaire pages. Next, participants answered a set of demographic questions regarding age, gender, area of residence, current pet ownership status, etc. After demographics, participants completed the set of psychological measures. On average, the survey took about 25-30 minutes to complete. The research was conducted in accordance with the ethical principles and with relevant data protection regulations.

Participants

A total number of 286 individuals initially accessed the online form. Since the number of male participants was very low, and we intended to keep a more homogenous sample, the final group investigated consisted of 196 female participants from Romania, with ages ranging between 18 to 63 years (M = 24.06, SD = 9.73). The majority, 74% (N = 145), resided in urban areas while 26% (N = 51) lived in rural areas. Of the 196 participants 145 wished for a pet in childhood and did have one (74%), while 51 wished for, but did not have (24%).

Based on this information, we constituted two groups (1= wished and had in childhood; 2=wished but did not have in childhood). Related to pet ownership in the present, 65% of our participants reported to own a pet, and 35% that they do not own one.

Due to the exploratory nature of the present study and the relatively reduces sample size, in order to maintain consistency with our design and enhance the interpretability of the interactions between parental practices and pet-related variables, each dimension of parental practices was dichotomized into two groups, namely: low vs. high parental warmth, low vs. high parental rejection, and low vs. high parental overprotection. In this way, we could provide more stable and interpretable estimates in the same time maintaining the consistency with the study's conceptual framework.

In order to estimate the minimum sample size, an a priori power analysis was conducted using G*Power 3.1.9.7 (Faul et al., 2013) for a between-subjects 2x2x2 ANCOVA. Assuming a small to medium effect size ($f^2 = 0.25$), $\alpha = .05$, power $(1-\beta) = 0.95$, the analysis indicated a minimum N = 153. Our obtained sample thus exceeded this threshold, providing adequate statistical power. A relatively high desired power (95%) was chosen to reduce the risk of Type II errors and ensure sensitivity to detect differences in psychological well-being.

Instruments

Perceived parenting practices were assessed with the modified version of the EMBU scale (EMBU-A, Egna Minnen Beträffande Uppfostran - Adult version, Castro et al., 1993; Muris et al., 2003). The EMBU-A measures perceptions of adolescents and adults regarding their upbringing by mother and father. The original scale was developed by Perris et al. (1980) and contains 81 items, each rated on a Likert-type scale (e.g., 1 = "No, never" to 4 = "Yes, always"), administered separately for each parent. These items yield four key dimensions of perceived parental rearing: *emotional warmth*, *rejection*, *overprotection*, and *favoring subject* (Perris et al., 1980; Arrindell et al., 1999). The current study used a Romanian version of the EMBU-A. An abbreviated 40-item version regarding both mother and father was administered, preserving the core content of the four EMBU-A dimensions. Participants were instructed to recall their childhood experiences with each parent and rate each statement accordingly. Higher scores on each of the subscales indicate greater perceived frequency of that specific set of parenting behavior (for example, a high *rejection* score means the participant recalls a high degree of parental rejection in childhood). In the current sample, the EMBU-A demonstrated adequate psychometric properties, with a strong internal consistency, Cronbach's α ranging from .77 to .95 on the four dimensions. Since most participants did not have siblings, we did not take into consideration the *favoring subject* subscale of the EMBU.

Psychological well-being was measured using Ryff's Psychological Well-Being Scale (Ryff, 1989). This instrument assesses six dimensions of positive psychological functioning: *autonomy*, *environmental mastery*, *personal growth*, *positive relations with others*, *purpose in life*, and *self-acceptance*. We employed a 44-item Romanian version of the scale, each item rated from 1 ("Strongly disagree") to 6 ("Strongly agree") (Kállay & Rus, 2014). The scale presents well-established psychometric properties, with Cronbach's α ranging from .80 to .91.

Cognitive emotion regulation strategies were assessed using the Cognitive Emotion Regulation Questionnaire (CERQ, Garnefski et al., 2002). The CERQ is a 36-item self-report measure that encompasses nine distinct cognitive coping strategies people use after experiencing negative life events. These strategies include adaptive (*positive reappraisal*, *positive refocusing*, *planning*, *acceptance*, *rumination)* and maladaptive ones (*catastrophizing*, *self-blame*, *other-blame*, and *putting into perspective)*, each item rated on a 5-point Likert

scale (1 = "Almost never" to 5 = "Almost always"). The present study used a Romanian version of the CERQ (Perţe & Miclea, 2011), which has shown overall satisfactory psychometric characteristics in Romanian samples. Several studies (Kállay & Visu-Petra, 2014; Kállay & Cheie, 2022) further suggested the exclusion of the *acceptance* dimension from the adaptive strategies, since it demonstrated poor correlation with the other dimensions. In the current dataset, the CERQ also demonstrated good properties. The individual CERQ subscales in our data had Cronbach's α ranging from .66 to .91, indicating adequate internal consistency (with slightly lower reliability for certain subscales).

Attachment to pets was measured by using the Lexington Attachment to Pets Scale *(*LAPS, Johnson et al., 1992). The LAPS consists of 23 items that assess emotional attachment to companion animals. Each item is a statement about feelings or behaviors exhibited by owners towards their pets. Respondents indicate their agreement on a 4-point Likert scale (1 = "Strongly disagree" to 4 = "Strongly agree"), with higher scores reflecting stronger bond with their pet. The LAPS incorporates three subscales: *general attachment*, *people substituting* and *animal rights*, although often the total score is used as an overall indicator of pet attachment (Johnson et al., 1992). Participants who currently owned a pet filled out the LAPS with reference to their pet, whereas those without one were instructed to skip these items. In the current study, the scale yielded a high reliability, Cronbach's α ranging from .86 to .93. The study used a Romanian version of the LAPS (the scale was translated and back-translated, as well as peer-reviewed for this research). Two items (item 8 and item 21) were reverse-coded during data processing so that higher scores consistently indicated greater attachment. Participants with missing values were excluded from the study.

RESULTS

Data were analyzed using IBM SPSS Statistics (Version 26) (IBM Corp, 2019). Table 1 presents means/medians, standard deviation, minimum-maximum scores, and indicators of internal consistency for all the assessed variables.

Table 1. Means/medians, standard deviation, minimum-maximum scores, and indicators of internal consistency for all the assessed variables

Variables	Cronbach's α	Mean/Median	SD	Min	Max
1. EMBU-Warmth	.95	85.83/90.00	18.98	35	112
2. EMBU-Rejection	.92	52.35/49.90	15.31	22	100
3. EMBU-Overprotection	.77	30.01/30.00	6.58	14	45
4. Psychological Well-being	.96	211.78/216.50	31.77	109	264
5. CERQ-Adaptive	.91	58.99/60.00	10.91	26	80
6. CERQ-Maladaptive	.82	46.42/46.00	8.77	25	74
76. LAPS	.93	70.60/75.00	16.48	26	92

Next, we conducted three separate univariate ANCOVA analyses, with psychological well-being as dependent variable. In each model we entered as a primary predictor one of the parental practices (high-low, warmth, rejection, overprotection) as dichotomous variable (high-low), along with the childhood desire to own a pet in (1 = desired and owned, 2 = desired but did not own), and current pet ownership (1 = own, 2 = not own). Adaptive and maladaptive emotion regulation strategies and adult pet attachment were included as covariates.

Table 2. Means and standard deviations of psychological well-being depending on parental warmth (low-high), childhood desire for pets (wished and had, wished and did not have), and current pet ownership (yes-no)

Dependent Variable: PWB				
EMBU-Warmth	**Childhood desire for pet**	**Current Pet Ownership**	**Mean**	**SD**
Low Warmth	Wished and had	NO	217.13	30.25
Low Warmth	Wished and had	YES	194.58	35.87
Low Warmth	Wished NOT had	NO	194.50	35.42
Low Warmth	Wished NOT had	YES	210.50	36.90
High Warmth	Wished and had	NO	217.90	26.51
High Warmth	Wished and had	YES	219.98	26.89
High Warmth	Wished NOT had	NO	203.00	48.56
High Warmth	Wished NOT had	YES	215.88	33.14

Thus, in the first step, we conducted a 2 x 2 x 2 ANCOVA in order to examine the effects of parental warmth (low vs. high), childhood desire for pet (wished and had vs. wished and not had), and current pet ownership (yes vs. no) on psychological well-being, controlling for adaptive and maladaptive emotion regulation strategies, and adult pet attachment (general attachment and people substituting). Levene's test was not significant, $F(7, 162) = 1.18$, $p = .317$, indicating that the assumption of homogeneity of variance was met. Results are presented in Tables 2 and 3.

Table 3. Effects of parental warmth, childhood desire for pet, current pet ownership, and covariates (emotion regulation strategies and pet attachment) on psychological well-being

	Adj. mean	SE	95% CI lower	95% CI upper	F	p	η^2p
CERQ-ADAPTIVE					43.88	<.001	.217
CERQ-MALADAPTIVE					14.27	<.001	.083
LAPS General attachment					5.38	.022	.033
LAPS People substitution					.96	.329	.006
EMBU Warmth					.00	.98	.000
EMBU Warmth Low	212.70	4.43	203.93	221.46			
EMBU Warmth High	212.86	4.76	203.45	222.26			
Childhood desire for pet					0.08	.76	.001
Wished and had	213.72	2.65	208.48	218.96			
Wished and did not have	211.83	5.87	200.24	223.43			
Current pet ownership					0.60	.43	.004
Yes	215.33	5.92	204.09	226.57			
No	210.22	3.17	203.95	216.50			
Main effects							
EMBU-Warmth-Categ					.00	.980	.000
Childhood desire for pet					.08	.769	.001
Current Pet Ownership					.60	.438	.004
Two-way Interactions							
EMBU-Warmth-Categ* Childhood desire for pet					1.52	.219	.010
EMBU-Warmth-Categ* Current Pet Ownership					.22	.638	.001
Childhood desire for pet* Current Pet Ownership					1.11	.294	.007
Three-way interactions							
EMBU-Warmth-Categ* Childhood desire for pet* Current Pet Ownership					.003	.954	.000

Note: Model Total R^2=.352, Error df=158

Our results indicated no significant main effect of parental warmth on psychological well-being was found, whilst controlling for the covariates, $F(1, 158) = .00$, $p = .980$, partial $\eta^2 = .00$. Similarly**,** no significant main effect of childhood desire for pet on psychological well-being was found, whilst controlling for the covariates, $F(1, 158) = .08$, $p = .769$, partial $\eta^2 = .00$. Neither was the main effect of current pet ownership on psychological well-being, whilst controlling for the covariates, $F(1, 158) = 0.60$, $p = .438$, partial $\eta^2 = .00$.

As for the two-way interactions, no significant one emerged between parental warmth and childhood desire for pet, $F(1, 158) = 1.52$, $p = .219$, partial $\eta^2 = .01$, nor did between warmth and current pet ownership, $F(1, 158) = 0.22$, $p = .638$, partial $\eta^2 = .00$, whilst controlling for the covariates. The effect of the interaction between childhood desire for pet and current pet ownership on psychological well-being was also not significant, whilst controlling for the covariates $F(1, 158) = 1.11$, $p = .294$, partial $\eta^2 = .00$.

The three-way interaction among parental warmth, childhood desire for pet, and current pet ownership, was not significant $F(1, 158) = .00$, $p = .954$, partial $\eta^2 < .00$**.**

Among covariates, adaptive emotion regulation, $F(1, 158) = 43.88$, $p < .001$, partial $\eta^2 = .21$, maladaptive emotion regulation, $F(1, 158) = 14.27$, $p < .001$, partial $\eta^2 = .08$, and general attachment, $F(1, 158) = 5.38$, $p = .022$, partial $\eta^2 = .03$) were significant predictors of well-being, while people substituting was not ($p = .329$).

The model explained 35.2% of the variance in psychological well-being (R^2=.352).

Next, a 2 x 2 x 2 ANCOVA was conducted in order to examine the effects of parental rejection (low vs. high), childhood desire for pet (wished and had vs. wished and not had), and current pet ownership (yes vs. no) on psychological well-being, while controlling for adaptive and maladaptive emotion regulation, and pet attachment, respectively general attachment and people substituting. Although Levene's test was significant, indicating unequal variances [$F(7, 162) = 2.42$, $p = .022$], the ANCOVA could be considered robust enough to proceed. Results are presented in Tables 4 and 5.

Table 4. Means and standard deviations of psychological well-being depending on parental rejection (low-high), childhood desire for pets (wished and had, wished and did not have), and current pet ownership (yes-no)

Dependent Variable: Psychological Well-Being (PWB)				
EMBU-rejection	**Childhood desire for pet**	**Current Pet Ownership**	**Mean**	**SD**
Low rejection	Wished and had	NO	216.90	27.25
Low rejection	Wished and had	YES	225.50	22.39
Low rejection	Wished NOT had	NO	183.00	32.52
Low rejection	Wished NOT had	YES	234.50	28.00
High rejection	Wished and had	NO	218.64	29.42
High rejection	Wished and had	YES	194.91	34.56
High rejection	Wished NOT had	NO	204.20	41.55
High rejection	Wished NOT had	YES	204.88	34.31

Table 5. Effects of parental rejection, childhood desire for pet, current pet ownership, and covariates (emotion regulation strategies and pet attachment) on psychological well-being

	Adj. mean	SE	95% CI lower	95% CI upper	F	p	η^2p
CERQ-ADAPTIVE					41.96	<.001	.210
CERQ-MALADAPTIVE					6.36	.013	.039
LAPS General attachment					6.47	.012	.039
LAPS People substitution					1.45	.230	.009
EMBU rejection					0.57	.45	.004
EMBU rejection Low	215.91	5.59	204.87	226.95			
EMBU rejection High	210.74	3.88	203.06	218.42			
Childhood desire for pet					0.14	.70	.001
Wished and had	214.62	2.54	209.60	219.63			
Wished and did not have	212.03	6.26	199.67	224.39			
Current pet ownership					0.01	.89	.000
Yes	212.88	5.96	201.10	224.65			
No	213.77	3.30	207.23	220.39			
Main effects							
EMBU-Rejection -Categ					.57	.451	.004
Childhood desire for pet					.14	.702	.001
Current Pet Ownership					.54	.897	<.001
Two-way Interactions							
EMBU-Rejection -Categ* Childhood desire for pet					.54	.460	.003
EMBU-Rejection -Categ* Current Pet Ownership					5.71	.018	.035
Childhood desire for pet* Current Pet Ownership					3.44	.065	.021
Three-way interactions							
EMBU-**R**ejection -Categ* Childhood desire for pet* Current Pet Ownership					1.07	.301	.007

Note: Model Total R^2=.395, Error df=158

After adjusting for covariates, no significant main effects on psychological well-being were found for parental rejection [$F(1, 158) = .57$, $p = .451$, partial $\eta^2 = .00$], childhood desire for pets[$F(1, 158) = .14$, p = .702, partial $\eta^2 = .00$], or current pet ownership [$F(1, 158) = .54$, $p = .897$, partial $\eta^2 < .00$].

The two-way interaction between parental rejection and current pet ownership interaction was observed, $F(1, 158) = 5.71$, $p = .018$, partial $\eta^2 = .03$. Further analyses indicated that among individuals with lower scores of perceived parental rejection, current pet owners reported lower well-being (Madj = 197.56), compared to non-owners (Mean = 214.84). Conversely, among those high in

parental rejection, current pet ownership (Mean = 226.37) was associated with slightly higher well-being compared to those who do not currently own a pet (Mean = 214.08). Next, a trend level interaction was observed between childhood desire for pet and current pet ownership, $F(1, 158) = 3.44$, $p = .065$, partial $\eta^2 = .02$. Among those participants who wished for and had a pet in childhood, current non-pet owners (Mean= 217.58) indicated slightly higher levels of psychological well-being than current owners (Mean = 211.68). Conversely, for those who wished but did not have a pet in childhood, current pet ownership (Mean = 212.61) was associated with somewhat higher levels of psychological well-being than no pet ownership (Mean = 198.14). Lastly, no significant two-way interaction emerged between parental rejection and childhood desire for pet, $F(1, 158) = 0.54$, $p = .460$, partial $\eta^2 = .00$.

As for the three-way interaction between parental rejection, childhood desire for pet, and current pet ownership, the effect on well-being, whilst controlling for covariates did not reach significance, $F(1, 158) = 1.07$, $p = .301$, partial $\eta^2 = .00$.

Significant covariate effects emerged for adaptive emotion regulation [$F(1, 158) = 41.96$, $p < .001$, partial $\eta^2 = .21$], maladaptive emotion regulation [$F(1, 158) = 6.36$, $p = .013$, partial $\eta^2 = .03$], and general attachment [$F(1, 158) = 6.47$, $p = .012$, partial $\eta^2 = .03$], while people substituting was not significant ($p = .230$).

The model explained 39.5% of the variance in psychological well-being ($R^2 = .395$).

Table 6. Means and standard deviations of psychological well-being depending on parental overprotection (low-high), childhood desire for pets (wished and had, wished and did not have), and current pet ownership (yes-no)

Dependent Variable: PWB				
EMBU-Overprotection	**Childhood desire for pet**	**Current Pet Ownership**	**Mean**	**SD**
Low Overprotect	Wished and had	NO	218.70	25.31
Low Overprotect	Wished and had	YES	217.20	31.10
Low Overprotect	Wished NOT had	NO	205.60	39.46
Low Overprotect	Wished NOT had	YES	210.00	37.88
High Overprotect	Wished and had	NO	215.33	33.08
High Overprotect	Wished and had	YES	205.72	32.71
High Overprotect	Wished NOT had	NO	179.50	37.47
High Overprotect	Wished NOT had	YES	216.00	32.01

Finally, we conducted a 2 x 2 x 2 ANCOVA in order to examine the effects of parental overprotection (low vs. high), childhood desire for pet (wished and had vs. wished but did not have), and current pet ownership (yes vs. no) on

psychological well-being, while controlling for adaptive and maladaptive emotion regulation, and pet attachment (general attachment and people substituting). Levene's test was not significant [$F(7, 162) = 1.16$, $p = .328$], indicating that the assumption of homogeneity of variance was met. Results are presented in Tables 6 and 7.

Table 7. Effects of parental overprotection, childhood desire for pet, current pet ownership, and covariates (emotion regulation strategies and pet attachment) on psychological well-being

	Adj. mean	SE	95% CI lower	95% CI lower	F	p	η^2p
CERQ-ADAPTIVE					52.45	<.001	.249
CERQ-MALADAPTIVE					16.66	<.001	.095
LAPS General attachment					5.58	.019	.034
LAPS People substitution					1.38	.241	.009
EMBU Overprotection					0.29	.58	.002
EMBU Overprotection Low	212.93	3.90	205.21	220.65			
EMBU Overprotection High	216.76	5.85	205.20	228.32			
Childhood desire for pet					0.01	.96	.000
Wished and had	215.02	2.73	209.62	220.41			
Wished and did not have	214.68	6.46	201.90	227.45			
Current pet ownership					0.84	.36	.005
Yes	218.17	6.42	205.48	230.86			
No	211.52	3.13	205.33	217.71			
Main effects							
EMBU- Overprotect -Categ					.29	.587	.002
Childhood desire for pet					.00	.961	.000
Current Pet Ownership					.84	.360	.005
Two-way Interactions							
EMBU- Overprotect -Categ* Childhood desire for pet					.73	.392	.005
EMBU- Overprotect -Categ* Current Pet Ownership					.61	.434	.004
Childhood desire for pet* Current Pet Ownership					.36	.547	.002
Three-way interactions							
EMBU- Overprotect -Categ* Childhood desire for pet* Current Pet Ownership					.02	.874	.000

Note: Model Total R^2=.342, Error df=158

No significant main effects on psychological well-being were found for parental overprotection[$F(1, 158) = .29$, $p = .587$, partial $\eta^2 = .00$], childhood desire for pet [$F(1, 158) = .00$, $p = .961$, partial $\eta^2 < .00$], and **c**urrent pet ownership [$F(1, 158) = .84$, $p = .360$, partial $\eta^2 = .00$], whilst controlling for the covariates.

As for the two-way interactions, no significant interaction emerged between parental overprotection and current pet ownership [$F(1, 158) = .61$, $p = .434$, partial $\eta^2 = .00$], parental overprotection and childhood desire for pet [$F(1, 158) = .73$, $p = .392$, partial $\eta^2 = .01$], and between childhood desire for pet and current pet ownership [$F(1, 158) = .36$, $p = .547$, partial $\eta^2 = .00$].

The three-way interaction among parental overprotection, childhood desire for pet, and current pet ownership was not statistically significant [$F(1, 158) = .02$, $p = .874$, partial $\eta^2 = .00$].

Significant covariate effects emerged for adaptive emotion regulation [$F(1, 158) = 52.45$, $p < .001$, partial $\eta^2 = .24$], maladaptive emotion regulation [$F(1, 158) = 16.66$, $p < .001$, partial $\eta^2 = .09$], and general attachment [$F(1, 158) = 5.58$, $p = .019$, partial $\eta^2 = .03$], while people substituting was not significant ($p = .241$).

The model explained 34.2% of the variance in psychological well-being (R^2=.324).

DISCUSSION

Psychological well-being has emerged as a central construct in contemporary mental health research (Ryff, 2014). Exploring the factors that may be associated with psychological well-being is particularly relevant given the increasing burden of mental health difficulties globally (GBD, 2019). Research has consistently emphasized the role of early parenting, emotion regulation strategies, and close relational bonds, including those with companion animals, as factors associated with patterns of well-being across the lifespan. It is well known that parental practices represent a pivotal developmental context through which individuals tend to develop emotion regulation skills and internal working models of relationships (Belsky & Cassidy, 1994; Rohmalimna et al., 2022). Warm and supportive caregiving is associated with secure attachment, empathy, and resilience (Pastorelli et al., 2021), while rejection and overprotection are associated with vulnerability to maladjustment, including heightened risk for internalizing symptoms (Rohner et al., 2005; Segrin et al., 2013).

Similarly, emotion regulation has been shown to be a powerful correlate of psychological well-being. Literature has constantly demonstrated that adaptive strategies are related to higher resilience and life satisfaction (Garnefski & Kraaij,2006), whereas maladaptive strategies are associated with distress and psychopathology (Aldao et al., 2010). Nonetheless, beyond human caregiving, the human-animal bond provides another context in which emotional needs are experienced. Companion animals often act as attachment figures, offering comfort, security, and a sense of belonging (Kurdek, 2009; Zilcha-Mano et al., 2012).

Adequate attachment to pets has been shown to buffer stress, enhance social support, and contribute to greater life satisfaction (Beetz et al., 2012; Brooks et al., 2018). Taken together, parental practices, cognitive emotion regulation, and pet attachment represent interrelated, yet distinct correlates of psychological well-being.

Our findings indicated that recollections of parental practices, respectively warmth, rejection, and overprotection, did not significantly explain psychological well-being in adulthood when controlling for emotion regulation strategies and dimensions of pet attachment (general attachment and people substituting). These results contradict theoretical perspectives that underline the proposed relevance of parenting recollections on adult psychological well-being (Wu et al., 2023) and suggest that proximal processes such as current emotion regulation strategies could be more strongly associated. As argued by Halverson Jr (1988), adult recollections of parenting may be shaped by biases and reinterpretations, reducing their reliability and predictive value compared to current psychological processes. Adaptive and maladaptive emotion regulation strategies and general attachment to pets consistently explained psychological well-being across all models, whereas recalled parenting practices did not. This suggests that adult well-being may be more strongly related to current coping capacities and relational resources than in memories of distant caregiving.

Across all three ANCOVA models, adaptive and maladaptive cognitive emotion regulation strategies emerged as the most powerful predictors of adult psychological well-being. Empirical research supports this conclusion: adaptive strategies, such as positive reappraisal are positively associated with life satisfaction and psychological well-being, whereas maladaptive strategies, such as rumination and catastrophizing, predict higher levels of distress and psychopathology (Aldao et al. 2010; Garnefski & Kraaij, 2006). In line with these findings, the present results reinforce the idea that the way adults tend to regulate their emotions in their daily life is a central feature associated with well-being. The strength of emotion regulation predictors also reflects the temporal proximity of measurement. While parental practices were assessed retrospectively, emotion regulation strategies and psychological well-being were measured as current processes. Proximal variables tend to show stronger associations with outcome measures than distal recollections, which are prone to bias (Gibson & Kim, 2010; Hagerty, 2003). This methodological factor, combined with the theoretical centrality of regulation, may explain why emotion regulation accounted for the largest proportion of variance.

In addition to emotion regulation strategies, the general attachment dimension of pet attachment emerged as a significant correlate of psychological well-being. This finding is consistent with previous research emphasizing that the quality of the emotional bond with pets is associated with psychosocial

adjustment (Wanser et al., 2019). Importantly, the results also revealed that the people substituting dimension of pet attachment did not significantly predict psychological well-being. This finding aligns with cautionary perspectives in the literature suggesting that substituting human social bonds with animal relationships may not consistently lead to adaptive outcomes (Barklam & Felisberti, 2023; Dowsett et al., 2020). While pets can function as complementary elements for lack of adequate human attachments, relying on them as replacements may reflect underlying relational insecurities or limited access to supportive social networks, which could limit their contribution to psychological well-being.

In contrast to emotion regulation strategies and pet attachment, in our sample of female participants neither childhood desire for a pet nor current pet ownership showed significant main effects on adult psychological well-being. Consequently, childhood pet experiences may not reliably translate to adult well-being outcomes once other factors, such as emotion regulation and current pet-attachment bonds, are taken into account. Similarly, current pet ownership did not directly explain well-being. This aligns with previous findings that pet ownership alone is not uniformly beneficial and may even be associated with stressors linked to caregiving responsibilities (Northrope et al., 2025). In the present study, pet ownership became meaningful only in combination with parental rejection.

Of the three parenting dimensions, only parental rejection showed a significant interaction with the pet-related variables associate to psychological well-being. This underscores the fact that rejection, as a particularly salient aspect of parenting that may be connected with the way individuals relate to pets later in life. Findings indicated that current pet ownership interacted with rejection such that individuals with lower levels of recalled rejection reported lower well-being as pet owners compared to non-owners, while those with higher levels of rejection reported slightly higher well-being as owners compared to non-owners (even if results were statistically significant, effect sizes were small). This finding may appear counterintuitive, but a plausible explanation could be the tendency to generalize attachment experiences from parent-child relationship to other relationships (Feeney, 2004). Individuals exposed to more rejection may develop insecure attachments but can nonetheless experience pets as more reliable and less threatening sources of comfort, thus deriving compensatory benefits from pet ownership. Conversely, for those who experienced less rejection and presumably developed secure attachment patterns, the relative value of pet companionship for psychological well-being may be diminished or even complicated by the additional responsibilities of pet ownership.

A trend-level interaction further suggested that the combined effect of childhood desire for pet and current pet ownership was significantly associated with psychological well-being in adulthood. Specifically, those who wished for

and had a pet in childhood but did not currently own a pet indicated slightly higher levels of psychological well-being than current owners, perhaps because the benefits of early bonds had already been internalized, making current ownership less essential. Conversely, for those who wished for, but did not have a pet in childhood, current pet ownership was associated with somewhat higher levels of psychological well-being, suggesting that current ownership may function as a potential source of unmet connection, related to addressing unmet attachment desires. Since this effect was not significant, but marginally close, results should be interpreted with extreme caution.

Limitations and future directions

While the present study employs valuable insight, several limitations must be acknowledged when interpreting the findings. First, our chosen design was cross-sectional and relied on retrospective self-reports of parenting practices, which limits any causal conclusions. We assumed that perceived parental practices had an effect on adult psychological well-being, but it is also conceivable that individuals' current dispositions or mental states determine how they remember their parents. For example, a currently depressed young adult might recall their childhood more negatively, exaggerating memories of parental rejection. Although our focus remained on perceptions of parental practices, which are inherently subjective, the possibility of recall bias remains, as well as the issue of confounding factors such as current mental health, which has not been measured.

Additionally, we mainly focused on variables regarding pet attachment and ownership, but other factors may also play a role in how parental practices translate to adult psychological well-being. For instance, we did not measure the presence of other supportive relationships, like close friends, siblings, or romantic partners. It may be that some individuals without pets presented higher well-being scores by leaning on human sources of support instead. A person with a very warm and understanding friend or partner might show resilience to parental rejection without necessarily needing or relying on a pet. Including a measure of social support or current attachment figures in future studies would help distinguish these: do pets uniquely influence psychological well-being, or would any secure relationship do? We also did not account for individuals' baseline attachment style, which could influence how they relate to both parents and pets. In short, there may be other variables affecting these dynamics.

Another limitation involves the characteristics of our sample, which constrain generalisability. The sample size was relatively small and our participants were primarily young female university students living in Romania, not representative of all age groups or levels of education. Replicating this

research in more diverse samples, including other cultural settings, gender, age groups, is an important next step. Cross-cultural comparisons would be enlightening to determine how universally applicable the pet as protective factor model may be.

The influence of a pet may depend on numerous factors: the type of pet (dog, cat, etc.), the length of ownership, the daily interactions and caregiving activities, as well as the compatibility of both pet and owner personality. In our study, due to the small variability, we pooled all pet owners together and did not analyze differences by pet type or other nuances. Furthermore, our pet attachment scale was a self-report of the owner's feelings toward the pet; we did not have supplementary sources to verify the quality of the reported human-animal bond. People might overstate their attachment or have biases in reporting it. Behavioral indicators (e.g., time actually spent interacting with the pet), or physiological stress relief when spending time with the pet, were not measured. Future research should delve deeper into the nature of the pet-owner relationship, such as comparing different kinds of pets, assessing attachment through both surveys and observable behaviors, and possibly considering the pet's behavior towards the owner as well.

For a better understanding of the relationships investigated, future research should employ longitudinal designs that follow participants from childhood into adulthood. Such an approach would also help clarify whether having a pet before or during stressful periods can alter the impact of those stresses, rather than relying on retrospective accounts. Moreover, all data in this study were collected via self-report questionnaires at a single point in time. Future studies would benefit from experimental designs and multi-method, multi-informant assessments. Using observational or biological data alongside self-reports could provide more convergent evidence and reduce concerns that the results reflect subjective bias. We also suggest that future research on these relationships could yield more refined insights by including indicators of social and subjective well-being.

Implications

Our findings highlight the importance of effective emotion management in the way psychological well-being is contoured. Preventive mental health programs (e.g., in schools, universities, workplaces) could incorporate training in coping skills like mindfulness, emotion regulation skills, problem-solving, and seeking social support. Strengthening individuals' ability to handle stress and regulate negative emotions may enhance their immediate quality of life and help them better deal with the effects of past adversities. For those coming from difficult family backgrounds in particular, acquiring adaptive emotion regulation

strategies may foster resilience. Learning such skills may empower individuals to manage their reactions more effectively and maintain equilibrium in the face of challenges, thereby promoting well-being.

Another practical implication involves considering the human-pet bond within therapeutic or supportive contexts. Although, in the present study, the interaction effect between parental rejection and current pet ownership cannot establish causality, it suggests that for some individuals, an appropriate relationship with companion animals may be associated with higher levels of well-being. Mental health professionals might consider, where appropriate, incorporating animals into therapy as an adjunct source of emotional support.

Finally, the predictive power of emotion regulation highlights its role as a modifiable target for intervention. Whereas parental practices cannot be altered retrospectively, adaptive regulation skills can be strengthened through training and psychotherapy, leading to measurable improvements in well-being. This practical implication reinforces the importance of focusing on emotion regulation in both research and applied settings when aiming to enhance adult mental health.

CONCLUSIONS

The results of our pilot study indicated that for the assessed sample of young adult women, cognitive emotion regulation strategies were the strongest correlates of psychological well-being among the variables examined. Even if early family climate cannot be changed retrospectively, emotion regulation strategies can be continuously and actively modified during development both by the individual and by current environment (human and animal agents). Our results also indicate that pets may also be important complementary sources of emotional support and security, especially for those individuals who remember experiencing high levels of parental rejection during childhood.

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