

Basic psychological need fulfillment in human–pet relationships and well-being



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ABSTRACT

According to self-determination theory (SDT; Deci & Ryan, 2000), fulfillment of the basic psychological needs for autonomy, competence, and relatedness within close relationships are essential for well-being. In the current research, we sought to further explore this association as regards human–pet relationships. Drawing on recent studies that have documented the benefits pet owners can derive from their relationship with a pet, we examined the extent to which perceived need support by a pet can facilitate well-being and allay psychological distress. Participants were 206 pet owners (dog or cat). Results of a SEM analysis indicated that perceived needs support by a pet significantly predicted higher well-being but did not predict level of psychological distress. These associations were found over and beyond needs support by a close human other. The implications of the uniqueness of human–pet relationships to well-being through the lens of SDT are discussed.

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1. Introduction

Pet owners invest a tremendous amount of time, energy, and money on their pets, often treating animals as though they were their own kin. In 2014, Americans spent over \$58 billion dollars annually on their pets (American Pet Products Association, 2014). One reason that pet keeping is a widespread phenomenon is that most pet owners believe that their companion animals are good for them (Amiot & Bastian, 2015) and can satisfy their owners' psychological needs (Kurdek, 2008). Although this makes intuitive sense, the psychological needs that a pet can fulfill and the extent to which a pet can fulfill needs related to their owners' well-being remain unclear. Moreover, little is known as to whether pets can support their owners' needs above and beyond need fulfillment in a relationship with a close other. The present study used concepts and methods from self-determination theory (SDT; Deci & Ryan, 2000) to tackle these questions and investigate the unique effect of pet need fulfillment on everyday people's well-being and level of psychological distress.

1.1. Background

The idea that living with an animal can improve human health and psychological well-being is known as the “pet effect” (Allen, 2003; Herzog, 2011). An accumulating body of research has shown

that pets can have a positive physiological impact especially for people facing major life challenges. For instance, Friedmann and Thomas (1995) reported that pet owners' survival rates were higher a year after of having a heart attack than those who did not own pets. Similarly, in clinical trials, pets were found to buffer increases in blood pressure among hypertensive stockbrokers (Allen, Shykoff, & Izzo, 2001). In terms of psychological well-being, Epley, Akalis, Waytz, and Cacioppo (2008) found that when people were experimentally induced to feel lonely, they were more likely to view their pets as a source of support. Similarly, pets were found to stave off negativity caused by social rejection (McConnell, Brown, Shoda, Stayton, & Martin, 2011). However, despite claims related to the medical and psychological benefits of living with animals, several problems limit the utility of this literature. For instance, research that supports the pet effect usually show that people in distress tend to find their pets to be a source of psychological support but there is little data as to whether pets have the same effect for the non-distressed.

1.2. Self-determination theory

SDT is made up of six mini-theories, each of which explains a different set of motivationally based phenomena (see Deci & Ryan, 2000). Together, SDT is a powerful framework for studying well-being and functioning in various areas, including close relationships (La Guardia, Ryan, Couchman, & Deci, 2000; Patrick, Canevello, Knee, & Lonsbary, 2007). SDT's Basic Psychological Need sub-theory (BPNT; Vansteenkiste & Ryan, 2013) suggests that there are three basic psychological needs—autonomy, competence, and relatedness—that are

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essential for growth and development. Autonomy refers to one's volition and endorsement of one's own actions. The need for competence involves a desire to feel capable and accomplished. The need for relatedness reflects one's proclivity for strong interpersonal relationships.

Needs are defined as universal psychological nutriment essential to a living entity's well-being in the same way that a plant needs water, sunlight, and specific minerals to grow (Deci & Ryan, 2000). Deci and Ryan (2000) extended this reasoning to close relationships. They argued that need satisfaction arises out of certain supportive social contexts. Although need satisfaction can be influenced by social context-specific factors, across time interpersonal experiences shape and stabilize into individual differences in the tendency to be more or less need satisfied (Deci & Ryan, 2000; Weinstein, Przybylski, & Ryan, 2012). Therefore whether basic needs are satisfied across important relationships consequently determines whether well-being will prosper.

The importance of close relationships is highlighted by findings that indicate that need fulfillment within these relationships is vital to well-being and relational functioning. For example, Patrick et al. (2007) showed that the more needs are fulfilled in people's romantic relationships, the better their relationship functioning. La Guardia et al. (2000) found that within-person variability in need satisfaction among primary close figures such as the mother, father, romantic partner, and best friend is related to within-person variability in attachment. Correlatively, when basic needs are not satisfied, psychological distress is more likely. Bartholomew, Ntoumanis, Ryan, Bosch, and Thøgersen-Ntoumani (2011) reported that athletes' need frustration was associated with greater ill-being.

Despite this extensive work on need satisfaction in various domains, scant research has been conducted on the ways in which pets can potentially satisfy basic needs. However, certain findings indirectly support the utility of basic need satisfaction to well-being. For instance, in human–pet relationships the need for autonomy can be supported by experiencing unconditional regard (Kanat-Maymon, Roth, Assor, & Reizer, *in press*) as well perceiving the pet as uncritical (Kurdek, 2008). Studies have shown that perceiving pets as nonjudgmental and uncritical facilitated young adults' psychological development and well-being (Archer, 1997). Similarly, a recent study suggested that pets can facilitate competence need support (Amiot & Bastian, 2015). For instance an experimental study with pet owners found that a pet's physical or cognitive presence increased self-confidence in goal attainment (Zilcha-Mano, Mikulincer, & Shaver, 2012). Finally, there is evidence suggesting that pets satisfy relatedness needs through owners' experiences of care and concern for their pet. Studies indicate that pet owners see themselves as though they were in a relationship with their pet (McConnell et al., 2011). In fact, pet owners tend to describe and experience their pets as a source of acceptance, support and love (Kurdek, 2008; Zilcha-Mano, Mikulincer, & Shaver, 2011b). This type of felt belongingness has been associated with greater well-being and lower psychological-distress (McConnell et al., 2011).

1.3. Current research

The main goal of the current research was to examine whether basic psychological needs satisfaction for autonomy, competence and relatedness in a relationship with a pet is associated with well-being and psychological-distress above and beyond basic need satisfaction with a significant other. To date, there has been little research on the association between SDT basic need satisfaction through pets and well-being or psychological-distress. Specifically, only one study has applied the SDT basic need conceptualization to the human–pet relationship. Kurdek (2008) found that need satisfaction by pets was associated with global attachment. However, he did not examine whether need satisfaction by a pet had any unique effect beyond need satisfaction by close human figures. McConnell et al. (2011), who investigated both humans and pets as sources of social support, found that pets made a

unique contribution to their owners' well-being. However, this study was limited to social support and utilized a small sample ($n = 56$).

Here, we investigated the association between the SDT basic need satisfaction and well-being and psychological-distress in pet and close human relationships. Although well-being and psychological distress are negatively associated, there is convincing evidence indicating that they are not merely two extremes of the same continuum but rather somewhat two distinct phenomena (Ryff et al., 2006); therefore, we assessed them separately. Fig. 1 depicts the research hypotheses. We posited that basic need satisfaction by close humans would be associated with greater well-being and lower psychological distress. More importantly, we hypothesized that need satisfaction through a pet would have a unique positive effect on well-being and a negative effect on psychological distress.

2. Method

2.1. Participants & procedure

The sample was composed of 222 Israeli pet owners. The participants were recruited over the course of 2011–2012 through online social networks (Facebook, emails, etc.) to take part in a study about pets and relationships. Sixteen participants (13.9%) did not complete the questionnaires and were subsequently dropped from the analyses. In total, data from 206 participants (167 women and 39 men ranging in age from 18 to 76, $M = 32.15$, $SD = 9.26$) were included in the analyses. Sixty-seven percent of the participants were owners of a dog, and the remaining participants were owners of cats. All participants volunteered to participate in the study without monetary reward. After providing informed consent, participants completed the well-being measure, the need satisfaction measures, and demographic information. The study was approved by the Institutional Ethics Committee.

2.2. Measures

2.2.1. Need Satisfaction Scale

Participants completed the 9-item Need Satisfaction Scale (La Guardia et al., 2000). This scale has been used to assess the extent to which participants feel there is support for their autonomy, competence, and relatedness needs from their pet and significant close humans (Kurdek, 2008). In the present study, when participants were asked to think of a significant human, 55% percent thought of their romantic partner, 17% a close friend, 13% a parent, 9% a sibling and the remaining 6% other relationships. Participants who had more than one pet were asked to rate their closest pet. Participants indicated how true it was (1 = not at all true, 7 = very true) that their pet or close other met needs for autonomy (3 items, e.g., "When I am with my pet, I am free to be who I am"), competence (3 items, e.g., "When I am with my pet, I feel like a competent person"), and relatedness (3 items, e.g., "When I am with my pet, I feel loved and cared for"). The Need Satisfaction Scale was translated into Hebrew using the Brislin (1970) guidelines for translation, where two independent bilingual translators who were familiar with the SDT translated the items into Hebrew and back to English. Any discrepancies occurring during the process were negotiated until accuracy and equivalence was achieved. The

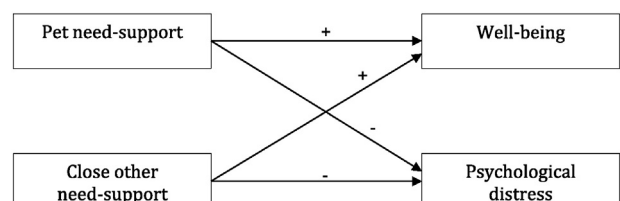


Fig. 1. The proposed model.

Cronbach's alphas for need satisfaction from the pet was .82 and from the close other was .86.

2.2.2. Mental Health Inventory

The Mental Health Inventory (Veit & Ware, 1983) was validated in Hebrew by Florian and Drori (1990). It consists of 38 items measuring different aspects of psychological distress (i.e., depression, anxiety, and loss of behavioral/emotional control) and well-being (i.e., positive affect, emotional ties, and life satisfaction). Items are scored on a 6-point Likert scale ranging from 1 ("strongly disagree") to 6 ("strongly agree"), according to the frequency of occurrence over the past month; for example, "During the past month, how often did you feel isolated from others?" Florian and Drori reported that all item clusters showed a high reliability with a one-year test-retest. Convergent validity tests were also reported to show convincing results with anxiety and depression. In the current study, the Cronbach's alphas for psychological distress and well-being were .93 and .86, respectively.

2.3. Statistical analysis

Structural Equation Modeling (SEM; Arbuckle, 2009) with a maximum-likelihood estimation method in AMOS 21 was used to test the hypotheses. The analysis was conducted in two phases. Phase 1 applied confirmatory factor analysis (CFA) to test the measurement model. This model included four latent factors pertaining to need support by pet and human, well-being, and psychological distress.

A parceling procedure was undertaken for the subscales of all the latent factors. Parceling serves to create several measures for each latent construct, thereby reducing measurement error and risk of spurious correlations, and increasing scale points (Little, Cunningham, Shahar, & Widaman, 2002). Items were assigned to parcels using the Little et al. (2002) procedure in which scale items were first subjected to exploratory factor analysis with extraction of a single unidimensional factor. Then, items were assigned based on their factor loading such that parcels had similar numbers of items and similar mean loadings. None of the parcels was found to be severely non-normally distributed (Lei & Lomax, 2005).

Phase 2 used SEM analysis to estimate the unique statistical effects of the latent factors of need support by pet and human on well-being and psychological distress. The model also statistically controlled for participants' age, gender and type of pet to account for their potential covariates. In addition, the correlation between the DVs was modeled through their error terms. A-posteriori power analysis indicated that the model had an adequate power of .90 that exceeded the recommended .80 (MacCallum, Browne, & Sugawara, 1996).

To assess model fit the following indices were used: χ^2 , χ^2/df index, Normed Fit Index (NFI), Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA). Model fit with NFI, CFI, and TLI equal to or greater than .95, RMSEA equal to or less than .06, and χ^2/df index < 3 are indicative of an adequate fit to the data (Hu & Bentler, 1999; Tabachnik & Fidell, 2007). Ideally, the chi-square statistic is expected to be non-significant in the case of adequate fit; generally, however this index is no longer

used to evaluate fit because of its hypersensitivity to sample size (Hu & Bentler, 1999).

3. Results

Before turning to the primary model exploring the unique relations of pet and human need satisfaction with well-being and distress, the associations between the variables were examined. As shown in Table 1, pet need satisfaction was significantly related to well-being but not to psychological distress. Thus, pet owners who perceived their pets as more need-supporting also reported experiencing greater well-being. Need satisfaction from a close other covaried significantly with both well-being and psychological distress. Thus, participants who experienced more need support from a close other reported greater well-being and were less distressed. Moreover, pet need satisfaction and human need satisfaction were moderately related, which justified accounting for one another.

Confirmatory factor analysis (CFA) was used to establish the measurement model. The measurement model showed an adequate fit to the data ($\chi^2(48) = 64.34$, $p = .058$, $\chi^2/df = 1.34$, NFI = 0.96, CFI = 0.99, TLI = .99, and RMSEA = 0.04). The loadings of the manifest indicators onto their respective latent variables were all strong and statistically significant, ranging from 0.74 to 0.97.

To assess the ability of human and pet sources of need fulfillment to uniquely predict well-being and psychological distress, we modeled the need fulfillment latent factors as predictors of the well-being and psychological distress factors. The model had adequate fit to the data with $\chi^2(72) = 110.97$, $p < .01$, $\chi^2/df = 1.54$, NFI = .94, CFI = .98, TLI = .96, and RMSEA = .05. The results of SEM analysis are presented in Fig. 2. A number of statistically significant associations between the latent factors were found. Need support by close human was inversely related to psychological distress ($\beta = -.29$, $p < .001$) and positively associated with well-being ($\beta = .34$, $p < .001$). That is, people who reported greater need support from a close other were less distressed and experienced greater well-being. More importantly, the model showed that when pet owners experienced greater need support from their pet, they had higher well-being ($\beta = .18$, $p < .05$). However, pet need support was not related to psychological distress ($\beta = -.04$, NS). It is important to note that these relationships emerged while statistically controlling for human need support and participants' age, gender and type of pet.

4. Discussion

The aim of this study was to examine whether pet psychological need satisfaction has a unique effect on the well-being of pet owners. In line with previous research on SDT, need support from a close other was significantly linked to higher well-being and less psychological distress. More importantly, pet need satisfaction indicated an additive pathway to well-being but not to psychological distress, beyond need satisfaction from a close human.

In line with SDT, the significant positive relationship for both pets and significant others between psychological need satisfaction and well-being can be explained by the fact that need satisfaction is essential for psychological growth and functioning. The positive relationship between need support from a close other and well-being is well documented in the SDT literature (e.g., Deci & Ryan, 2000); however, the expansion of this effect to pet-human relationships is an understudied topic. The fact that we removed the variance attributable to need satisfaction with close human others suggests that the effect of pet need satisfaction is not merely a projection of human-human relationships onto human-pet relationships. Hence, human pet relationships may be an independent potential source of need satisfaction.

The SDT's concept of need satisfaction may be an important additional explanation for understanding the widespread phenomenon of pet ownership, especially since many scholars have conceptualized

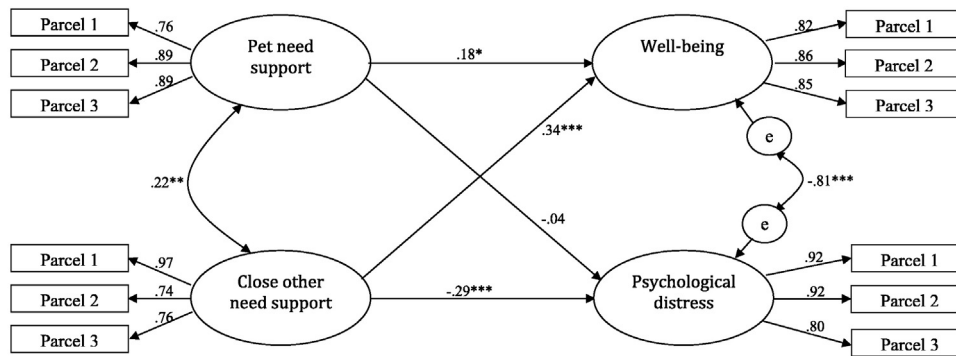
Table 1
Descriptive statistics and correlations between variables.

	M	SD	1	2	3
1. Pet need support	4.95	0.97			
2. Close other need support	4.98	0.93	.24**		
3. Well-being	4.51	0.90	.22**	.32***	
4. Psychological distress	2.44	0.95	-.08	-.25***	-.73***

Note:

** $p < .01$.

*** $p < .001$.



Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Fig. 2. Standardized SEM coefficients of pet and close other need support as predictors of well-being and psychological distress. Note: * $p < .05$; ** $p < .01$; *** $p < .001$.

the human–pet bond within Attachment Theory (e.g., Zilcha-Mano, Mikulincer, & Shaver, 2011a). According to Bowlby (1982), the attachment system emerged over the course of evolution because it increases the likelihood of survival. Encounters with physical or psychological threats automatically activate the attachment system and the individual is driven to maintain or restore proximity to an attachment figure for security. Pets thus may serve as an attachment figure because they function as stress relievers and a secure base (Kurdek, 2008). However, many individuals and families own a pet because interacting with pet is personally satisfying, not necessarily for security or survival goals. Thus, according to SDT, pets may not only function as a “friend in need” but rather be a source of need satisfaction that fosters psychological growth and well-being.

Another interesting finding was that need satisfaction from a close other was negatively associated with psychological distress, whereas no such effect was found for need satisfaction from a pet. One possible explanation may have to do with the difference in potential for humans and pets to cause distress. Although people can be need supporting, they are also capable of frustrating basic needs and thus causing great distress. For instance, Bartholomew et al. (2011) showed that basic need thwarting led to ill-being. However, the potential of pets to cause distress may be more limited. It is possible that through evolutionary processes such as animal selection, humans have favored pets that had a greater potential for companionship and lacked the power to be judgmental or critical (Serpell, 2002). Therefore over time, pets have become more endearing and less aggressive. In fact, when people consider choosing a pet, they usually pick pets that are characterized as cute and attentive and not aggressive or depressed (Podberscek & Blackshaw, 1988; Weiss, Miller, Mohan-Gibbons, & Vela, 2012). Furthermore, people who generally tend to perceive pet companionship as adverse may be less likely to have a pet. Therefore while human basic need fulfillment can be looked at along the lines of being supported or thwarted, pet relationships at least in this study remain mostly satisfying, with a minimal ability to harm.

The results also indicated that need satisfaction with a pet was positively associated with need satisfaction with a close other. This finding is in line with research (McConnell et al., 2011) suggesting that a relationship with a pet may complement relationships with close humans such as family and friends rather than compensate for them. In other words, people may engage in a relationship with a pet because it is a need satisfying relationship in its own right and not because it supplements an unsatisfied need for human support.

4.1. Limitations and future studies

The current research has several limitations. First, the correlational nature of the study, with data obtained via questionnaires, limits causality. Future research should complement the current findings by adding

behavioral observations or employing experimental designs. Second, the participants were self-selected, predominantly female and middle aged volunteers, which also limits generalizability. However, this community sample provides greater diversity than samples of undergraduate pet-owner participants, which is a notable strength of the study. Third, the study focused on owners of dogs and cats, which although mirroring the most common pets found in society, still limits the results. Future research is needed to assess whether these findings would be replicated for other pets such as birds or horses. Moreover, because SDT assumes that needs are fulfilled through a social interaction with the pet, pets that are less capable of interacting with humans in a significant way might also be less need fulfilling. For example, whereas dogs' behaviors are more easily interpretable as indicating various human-like behaviors such as care, playfulness, sympathy, and fear, it might be more difficult to interpret ants' behavior in a similar way. Future studies should investigate whether pets that are more capable of reciprocal interaction with humans are more likely to be considered as need fulfilling. Furthermore, this study did not address how aspects of personality might explain the choice of type of pet. For instance, most of the participants had a dog; however, some dogs are considered as family companions and others are seen as more aggressive. It is reasonable to assume that companion dogs may better support relatedness needs than guard or hunting dogs. Therefore need fulfillment might be different for different type of pets. Future studies might investigate whether personality affects choice of pet. In line with this notion, another line of research might look at whether need fulfillment is a function of the congruence between the individual personality and pet's characteristics or even their compensation.

Finally the unique effects of each need were not tested separately. However, it is important to note that cumulative research within SDT has shown that the three needs are highly correlated and tend to converge (Deci & Ryan, 2000). Developing need measures which can capture the distinctive aspects of each need within a human–pet relationship may shed light on the specific role of each need.

4.2. Conclusion

From a theoretical point of view, this study is one of the first to apply the SDT framework of need support to human–pet relationships. Applying a grounded theoretical framework to studying human–pet relationships may help build a systematic and progressive body of literature and can pave the way for new lines for research. The findings suggest that therapeutic interventions that use pets may be more effective when designed to support all the basic autonomy, competence, and relatedness needs. While most pet based interventions stress relatedness (Fine, 2010), the results here suggest that a pet can also be a useful source for competence and autonomy needs. For instance, dogs' ability to love unconditionally may serve to promote feelings of self-worth and

competence. Whereas previous work has focused primarily on the “pet effect” for individuals with significant health challenges (e.g., Friedmann & Thomas, 1995), the present study highlights the beneficial impact of perceived need support from pets for people who are not in crisis. The findings also hint that pet ownership may prevent ill-being. That is, pets may not only facilitate owner recovery from certain types of ailments, but may also prevent owners from becoming ill. In line with the current results, there is evidence that pet owners, especially dog owners as a group are healthier than non-owners and that pet owners have fewer health problems following the acquisition of a pet (Friedmann & Thomas, 1995; Wilson & Turner, 1997).

In summary, a human–pet relationship is, to some extent, a two-way street involving mutual interdependence. Although there is still much to be learned, this study shows that pets may serve as a unique source of need fulfillment for their owners and that SDT is a useful model for mapping important dimensions of human–pet relationships.

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