

## Research Article

# Loving Others: The Impact of Compassionate Love on Later-Life Psychological Well-being

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## Abstract

**Objectives:** Existing scholarship in social gerontology has paid relatively little attention to broader loving emotions, such as compassionate and altruistic love, as potentially meaningful mechanisms for improving later-life psychological well-being outside a family framework.

**Method:** Drawing from a 3-wave longitudinal survey of community-dwelling older residents ( $n = 334$ ) of Miami, Florida, we utilized generalized estimating equation models to examine the influence of changes in compassionate love (i.e., feeling love toward other persons and experiencing love from others) on depressive symptoms over time. We also explored cross-sectional relationship between compassionate love and positive and negative affects.

**Results:** An increase in the feeling of being loved ( $\beta = -0.77, p < .001$ ) and feeling love for others ( $\beta = -0.78, p < .001$ ) led to a decline in odds of reporting greater levels of depressive symptoms over time. The odds of reporting higher level of positive affect were significantly greater for older adults who reported feeling loved by others ( $\beta = .63, p < .001$ ) and expressed love for other people ( $\beta = 0.43, p < .05$ ). Older adults who felt loved and expressed love for other people, respectively, had 0.71 and 0.54-point lower ordered log odds of reporting higher negative affect than those who reported lower levels of love. The statistically significant impact of feeling loved on all well-being outcomes was maintained even after adjustment for altruistic attitudes and emotional support. Except for depressive symptoms, such adjustments explained the positive influence of love for others on well-being outcomes.

**Discussion:** Our findings underscore the powerful influence of both receiving and giving loving emotions for the maintenance of later-life psychological well-being.

**Keywords:** Compassionate love, Connectedness, Loving kindness, Mattering, Mental health

“All awakening to love is spiritual awakening. Love empowers us to live fully and die well.” bell hooks

Searches of research databases for prior studies with key words of “older adults and love,” “elderly and love,” “aging and love,” and “ageless love” reveal relatively few scientific studies that address broad concepts of love in relation to older adults. Previous studies on love among older couples

have focused on feeling loved and self-love among older married couples (Sabey & Rauer, 2018). Other related research explored love in the context of romantic or sexual relationships (e.g., Chopik et al., 2013). Consideration of broad loving emotions that reflect human connectedness has been limited in studies of later-life psychological well-being. Love represents the “supreme emotion” that makes us

“come most fully alive and feel most fully human” and has been recognized as the “most essential emotional experience for thriving and health” (Fredrickson, 2013, p. 10). The current study examines the significance of giving and receiving compassionate love for psychological well-being in later life. This type of love is other-centered and is focused on the good of the other (Underwood, 2008).

Our findings are based on data collected prior to the Covid-19 pandemic. However, their relevance is further underscored during the current natural disaster (Ayalon, 2020). During the physical and social distancing necessitated by the pandemic, human need for connectedness becomes ever more important. Further, at the current historical time, when expressions of anger and hate pose major societal challenges (Soroka et al., 2015) and when our social solidarity is being dismantled by increasing hyper-individualism or the tendency to “bowl alone” (Putnam, 2000), it is particularly timely to explore the positive role of compassionate love or loving kindness in our social world (Fredrickson, 2013; Sprecher & Fehr, 2005).

Reciprocal exchanges of loving emotions that include both feeling love from others and expressing love toward others among older adults have primarily been studied in the context of marital dyads (Sabey & Rauer, 2018; Sabey et al., 2016; Traupmann, & Hatfield, 1981). Studies of compassionate love among older married couples have found caring for physical health of their spouse and performing household tasks to be examples of giving and receiving compassionate love in old age (Sabey et al., 2016). In diverse recent studies, attention has also been directed at receiving and, to a lesser extent, to giving compassionate love and to the psychological benefits of loving emotions. Although existing studies are generally cross-sectional (with a few short-term longitudinal), and are often based on young respondents, they offer useful background, pointing to the value of exploring loving emotions both within and outside the family context. The value of feeling loved or perceptions of receiving positive emotions from others has been recently explored. Barrett and his colleagues (2019) considered such perceptions in the framework of developing a measure of feeling loved and cross-sectionally linking it to positive mental health outcomes among middle-aged and older adults. The authors used visual analogue scales to assess feeling loved and self-love. They report strong convergent validity of feeling loved, based on correlations with mental health and social support. In a study conducted over 4 weeks, Oravec and colleagues (2020) documented greater emotional well-being among university staff, and undergraduate students who reported higher felt love at baseline.

Another recent line of research deals with compassionate emotions that are not labeled as love. Lopez and colleagues (2018) conducted research focused on adults in the Netherlands and found in a cross-sectional study that psychological well-being outcomes are associated with compassion for others and self-compassion. The studies

reviewed offer an important glimpse into growing recognition of the value of loving emotions. Yet, their exclusive focus on bivariate relationships limits our understanding of the role of other positive emotions (e.g., altruistic attitudes and emotional support) in shaping the relationship between compassionate love and psychological well-being in later life. Furthermore, focus on the positive influence of love for others on later-life psychological well-being using longitudinal data is largely absent.

In this study, we endeavored to move beyond love in close relationships to encompass the broader social meaning of the term. We thus considered related concepts of compassionate or altruistic love (Post, 2002; Sprecher & Fehr, 2005), social support (Chen & Feeley, 2014), and altruistic attitudes (Kahana et al., 2013). These concepts reflect positive regard for others (Hetts et al., 1999) and positive attachments (Baumeister & Leary, 1995). Although these definitions refer to diverse constructs, one noteworthy similarity is the shared expression of positive attitudes toward others and the perception that one is the recipient of such expressions. Loving relationships also relate to the nature of social networks that older adults are embedded in (Ashida & Heaney, 2008). Such networks define the opportunities for meaningful and beneficial attachments. Such attachments are also necessary for receipt of social support in late life (Stephens et al., 2011). Compassionate love refers to emotions, such as caring, trust, understanding, and wanting to spend time with the other (Fehr & Sprecher, 2009).

There might be expectations that suggest that older adults are unlikely recipients of love by others and that they may have limited opportunities and resources for loving others. Older adults have fewer opportunities for attachment to others due to death of friends and family. Loss of social roles may also contribute to fewer opportunities for social interactions in late life (Kirkevold et al., 2013). Chronic illnesses and functional limitations may sap emotional energy needed for investing in social relationships in late life (Kahana et al., 2019). Older adults may also be expected to receive less love and affection due to the stigma of having a limited future, and thus be unable to reciprocate kindness and love (Midlarsky et al., 2015). Given that both potential sources and recipients of love are likely to shrink in old age, our interest extended to considering the degree to which giving and receiving love are reported by older adults.

We note that even in the face of shrinking social opportunities, it is evident that older adults are capable of positive attachments and exhibit diverse manifestations of love (Rook & Charles, 2017). For example, there is a robust literature on elderly grandparents expressing love while raising grandchildren (Fuller-Thomson et al., 1997; Mansson, 2016). Loving relationships with siblings have also been reported and were found to contribute to psychological well-being in late life (Cicirelli, 1989). Compassionate love is viewed as a key element of vital involvement in

old age (Erikson et al., 1994). For older adults living in long-term care facilities, having a positive relationship with their health care providers has been found to enhance their psycho-spiritual health and healing (Haugan, 2014).

The desirability of having compassionate love for others is discussed in all religious traditions. The adage to love your fellow humans as you love yourself is noted in Judaism, Islam, Hinduism, and Christianity. Love, in a relational context, assumes a “sharing of destinies” (Brittis, 1996). We feel that bonds of love in the form of “shared destinies” are important for mentoring, caregiving, and friendship formation. Accordingly, we see love as encompassing positive attitudinal, emotional, and behavioral components. Our paper seeks to explore the impact of giving and receiving love on psychological well-being of community-dwelling older adults. Furthermore, we examine whether the impact of compassionate love on psychological well-being transcends the influence of other related concepts of positive attachments such as social support and altruistic attitudes. In terms of giving love, prior research has called attention to the important roles that helping and prosocial behaviors play in enhancing the well-being of older adults (Midlarsky et al., 2015). Beyond the well-recognized value of helping behaviors, studies have also documented the benefits of altruistic attitudes that can enhance well-being of older adults, even in the absence of engaging in helping behaviors (Kahana et al., 2013). Accordingly, directing positive emotions toward others may play a valuable role in maintaining good mental health and quality of life in old age. Similarly, feeling positive emotions and regard from others can also reduce depression and loneliness in late life (Pinquart, 2002).

Such expectations are supported by research documenting that a sense of belonging is a fundamental motivation for humans (Baumeister & Leary, 1995). This is manifested in establishment of concern for each other’s welfare that may be viewed as feeling love from and towards significant others (Zahn-Waxler & Radke-Yarrow, 1990). Studies of compassionate love in younger age groups (e.g., among college students) have revealed benefits both from directing such love toward others and being a recipient of such love (Sprecher & Fehr, 2005). There were greater benefits of directing compassionate love toward close individuals but expressing love toward more distant figures also benefited those expressing love. Furthermore, giving and receiving love resulted in benefits, such as greater self-esteem. Layous and her colleagues (2017) documented a positive influence of gratitude and kindness on psychological well-being. It is noteworthy that definitions of wisdom, that have been viewed as a unique psychological strength of late life, encompass an affective component that is based on compassionate love (Ardelt, 2003).

Scientific studies of receiving warm emotions in late life primarily focus on social support (Chen & Feeley, 2014) and caregiving (Fauziana et al., 2018; Li & Loke, 2013). In the case of social support, the literature emphasizes

benefits to recipients (Chen & Feeley, 2014; Kelly et al., 2017). When focusing on caregiving, the burdens endured by providers are emphasized (Li & Loke, 2013). Both social supports and caregiving assume an imbalance in the power relationship. They are predicated on need, disability, or frailty of the older adult and imply the availability of resources among providers of support or care. The construct of love does not presuppose differential resources or status between givers and recipients and, as such there is no implication of burden.

Feeling loved by others as well as expressing love towards others also relate to concepts of mattering. The desire by older adults for continued mattering has been documented in prior studies (Dixon, 2007). Older persons desire to be valued and cared about by others, including friends, family, and society at large. Although the benefits of positive attachments and interactions are generally recognized in social science literature, hardly any scientific studies address the broader and less technical concept of love in relation to experiences of older adults and consider the impact of experiencing love for and by others on maintenance of late-life psychological well-being. Our study aims to fill this gap based on longitudinal data obtained from community-dwelling older adults.

## Research Questions

We propose three research questions pertinent to linking experiences and perceptions of love toward others and love received from others and psychological well-being indicators among community-dwelling older adults. Specifically, our study addresses the following research questions:

1. Does report of receiving love from others have a positive influence on psychological well-being in later life?
2. Does report of providing love to others have a positive influence on psychological well-being in later life?
3. Does the impact of compassionate love persist even after the influence of related measures of positive attachment such as social support and altruistic attitudes are adjusted for?

We hypothesize that there will be a positive effect of self-reported experiences of both giving and receiving love on psychological well-being of older adults. We anticipate that both obtaining and providing love will diminish depressive symptomatology and enhance experiences of positive affect among community-dwelling older adults. The positive impact of love should extend to older adults regardless of their demographic characteristics, altruistic attitudes, and emotional support.

## Data and Methods

The data for this study came from our three-wave longitudinal study of community-dwelling elderly persons,

conducted in Miami-Dade County, Florida from 2006 to 2009. This panel study of successful aging conducted by the Elderly Care Research Center (ECRC) had 340 participants and was focused on late-life adaptation of community-dwelling older adults. The dataset used in our study was part of a larger NIH-funded longitudinal study of successful aging. The original study was based on residents of a Clearwater Florida retirement community. The study was later expanded to include ethnically more heterogeneous samples in Cleveland, Ohio and later in Miami-Dade County, Florida. The larger study provided evidence of proactive late-life adaptations and their positive impact on well-being. The salutary effect of altruistic attitudes was also noted in our prior research based on data from a Clearwater Florida retirement community, underscoring the value of positive emotions for late-life well-being (Lee et al., 2015; Kahana et al., 2012, 2013, 2018). Our sample was racially heterogeneous, including White, African American, and Latinx (Cuban) participants. A majority of respondents were Cuban Latinx (41.03%) followed by Whites (34.29%) and Blacks (24.68%). With age spanning from 61 to 99 years, the average age of respondents was 75 years. Further 61% of respondents were female and 38% reported that they were married. A great majority of respondents (82.26%) had living children. Only 26% of respondents reported to have earned at least a college education (see Table 1).

This survey employed a multistage sampling procedure. The first stage involved identification of eligible households from Miami-Dade County tax records, which then were used to randomly select sample respondents. Data were

obtained through in-person interviews with older adults living independently in the community (age 60+ years at baseline). The structured interviews were 60–90 min in duration and were conducted in respondent's homes by trained interviewers after obtaining informed consent. The necessary ethical approval was obtained from the Institutional Review Board (IRB) of Case Western Reserve University, and all respondents signed written informed consent forms. We fitted an attrition model to assess the likelihood of missing in dependent variable for each wave. The estimates from the attrition model (not shown in the tables) show that women, married, respondents with higher levels of education, and Latinx respondents were more likely to remain in the study. By contrast, Blacks were less likely to remain in the survey than Whites. The difference in the likelihood of remaining in the survey was statistically significant only for Latinx (relative to Whites) respondents.

## Measures

### Psychological well-being

We used three psychological well-being outcomes as our dependent variables: positive affect, negative affect, and depressive symptomatology. Depressive symptoms were measured in all three waves, while positive and negative affect were only assessed at the first wave. This allowed us the opportunity to explore the proposed relationship between compassionate love and well-being in a longitudinal as well as cross-sectional context.

### Depressive symptomatology

The short-version (10-item) CESD (Center for Epidemiological Studies Depression) Scale was used to measure depressive symptoms (Andresen et al., 1994). The instrument measures frequency of specific emotions (e.g., "had the blues"), with responses ranging from 1 (=Never or rarely) to 5 (=All of the time). A high Cronbach's alpha ( $\alpha = .84$ ) indicated strong interrelationship among indicators of depressive symptoms at baseline. We summed responses on each item and divided by total number of items (i.e., mean response for each respondent) to create a single score ranging from 1 to 5, with higher scores indicating greater depressive symptoms. Since only about 2% respondents in our sample had mean depressive symptoms score beyond 3, we recoded the scale to limit its range to 3 (i.e., the six respondents reporting scores 4 and 5 were top-coded as 3). Such recoding improved our model fit, resulting in a significant reduction of quasi-likelihood under the independence model criterion (QIC) from 1739.43 to 1697.73 for feeling loved and from 1745.58 to 1704.31 for love for others.

### Positive and negative affect

We used a validated brief PANAS scale, which contains 10 words to describe different emotions (Kercher, 1992). The brief scale uses five items each for both positive (feeling excited, enthusiastic, alert, inspired, and determined) and

**Table 1.** Descriptive Statistics of Study Variables

	Mean (SD) or percentage ( $n = 334$ )
Age (range: 61–99 years)	75 (7.75)
Gender (1 = female)	60.78
Marital status (1 = married)	38.11
Race	
White	34.29
Black	24.68
Cuban Latinx	41.03
Education	
Less than high school	26.69
High School and some college	47.24
College and beyond	26.07
Living child (1 = have at least one child)	82.26
Disability (range: 0–36)	2.22 (5.48)
Altruism (range: 6–30)	23.84 (3.25)
Emotional support (range: 4–20)	16.85 (3.07)
Feeling loved (1 = much or very much)	88.3
Love for others (1 = much or very much)	92.7
Depressive symptoms (range: 1–5)	1.75 (0.68)
Positive affect (range: 1–5)	3.57 (0.95)
Negative affect (range: 1–5)	1.72 (0.85)

negative affects (feeling distressed, upset, scared, nervous, and afraid). Respondents reported the feeling of specified emotions during the past year on a 5-point scale. A high Cronbach's alpha for both positive ( $=.77$ ) and negative ( $=.83$ ) affect suggests that the indicators of respondents' emotions were strongly interrelated. The responses on each item were summed by total number of items to create a single score that reflects positive affect and negative emotions of each respondent. A higher score was reflective of greater affect levels for both scales.

### Compassionate love

Our main explanatory variable of interest assessed at each wave aimed to capture the experience of love that older adults receive from others and offer to others. Perceived love from others was measured by the question: "To what extent do you feel loved by others?" Love expressed towards others was measured by the question: "To what extent do you feel love for others?" Responses ranged from 1 (=Not at all) to 5 (=Very much). While we recognize the limitations of a single item assessment of compassionate love, we note that these questions demonstrate the high face validity as they tap into constructs similar to recently developed validated scales of compassionate or universal love (Barrett et al., 2019; Sprecher & Fehr, 2005; Trent et al., 2020). The logical relationship to other positive emotions such as altruism and emotional support establish the predictive value of our love items.

### Covariates

The likelihood of association of variables such as demographic characteristics, health status, altruistic attitudes, and emotional support with both love and psychological well-being guided our consideration of them as covariates.

#### Demographic characteristics

Respondents' age, gender (female = 1 and male = 0), marital status (married = 1, not married = 0), race (three dummy variables; Black = 1 vs else = 0, Cuban Latinx = 1 vs else = 0, and White = 1 vs else = 0, with White as reference category), educational attainment (levels of education; 1 = less than high school; 2 = high school and some college; 3 = college and beyond), and living child (have at least one child = 1, no children = 0) were included in the analyses as potential predictors of compassionate love and psychological well-being. Age was measured in years and ranged from 61 to 99 years. We treated education as an ordinal variable in our regression analysis.

#### Disability

We utilized six activities of daily living (ADL) items (e.g., trouble washing and bathing; trouble getting in/out of chair) and six instrumental ADL (IADL) items (e.g., trouble walking up and down stairs; trouble shopping for groceries) to construct a summary disability score at each

wave (Katz et al., 1963; Lawton & Brody, 1969). The response categories on all items range from never having difficulty (0) to having difficulty all of the time (3). The indicators used to measure disability demonstrated excellent internal consistency (Cronbach's alpha = .94). We summed responses on 12 items for each respondent to calculate a disability measure ranging from no difficulty on any items (0) to having difficulty on all items all of the time (36).

#### Altruistic attitudes

We utilized a six-item Elderly Care Research Center (ECRC) altruism scale. The respondents were asked on a 5-point Likert-type scale to what extent they agreed with items intended to capture altruistic attitudes (e.g., seeing others prosper makes me happy; I enjoy doing things for others; I try to help others, even if they do not help me). One of the six items (i.e., I come first and should not have to care so much for others) was reverse coded so that a higher score reflected more altruistic attitudes. A high Cronbach's alpha ( $=.79$ ) demonstrates that the indicators of altruism were strongly interrelated. All items were summed to create a single score ranging from 6 to 30, with higher scores indicating more altruistic attitudes.

#### Emotional support

We assessed emotional support by asking respondents about emotional support they received from friends and family during the past year. Their responses were sought on two items (e.g., showed concern for you as a person and expressed affection toward you) that measured emotional support both from family, and friends and neighbors. Their response ranged from 1 (=None) to 5 (=Very much). All highly interrelated items (Cronbach's alpha = .74) were summed to create a single score ranging from 4 to 20, with higher scores indicating more emotional support.

### Statistical Analysis

Our preliminary analysis involved calculation of descriptive statistics (e.g., mean, standard deviation, and frequency) to evaluate the distribution of the study variables at baseline. We also conducted bivariate statistical tests (e.g., chi-squared test, *t*-test) to explore the relationship between our confounders and compassionate love variables at baseline. Subsequent to our exploratory analysis, we employed generalized estimating equation (GEE) models to investigate the relationship between feeling loved and love for others, and depressive symptoms. These models helped us account for dependency in longitudinal outcomes and the influences of confounders. We fit two models to estimate the population average change in depressive symptoms with the changes in feeling of love and love for others. Model 1 adjusted for health, and demographic characteristics to examine the relationship between changes in compassionate love and depressive symptoms over time. Model

2 incorporated two additional variables (i.e., emotional support and altruistic attitudes) to assess whether the influences of compassionate love on depressive symptoms persists even after the adjustment for the influence of other related concepts of positive attachments.

We utilized inverse probability weights (IPWs) to adjust for the impact of attrition on the relationship between compassionate love and depressive symptoms over time. Based on the logistic regression model, we estimated the likelihood of respondents remaining in the study, conditional on variables such as race and gender. The probability of remaining in the study was then used to calculate IPWs. IPWs obtained by taking the inverse of the probability of being in the study (Rosenbaum & Rubin, 1983) for missing respondents by down-weighting groups who are more likely to remain in the study. For our cross-sectional analysis, we utilized ordinal logistic regression to examine the relationship between compassionate love and affect (i.e., positive and negative) levels. We first adjusted for health, and demographic characteristics to assess the influence of compassionate love on affect levels. Subsequently, we adjusted for the influences of two additional variables of emotional support and altruism to examine whether the impact of compassionate love on the affect levels was maintained.

We performed statistical tests to assess the proportional odds assumption of our ordinal logistic models for all three psychological well-being outcomes. Those statistical tests were administered to examine whether the parameter estimates were the same across all response categories. Nonsignificant  $p$  values (depressive symptoms: feeling of love = 0.60, love for others = 0.15; positive affect: love for others = 0.18; negative affect: feeling of love = 0.40; love for others = 0.22) indicate that this assumption was not violated for all models except for a model that examined the relationship between feeling loved and positive affect. Despite the violation of proportional odds assumption, we proceeded to fit our models by assuming an equivalence of estimates across all responses' categories, because the  $p$ -value suggested a weak statistical significance (positive affect: feeling of love = 0.01). We should also note that the test of proportional odds assumption tends to be very anticonservative. In other words, the likelihood of rejecting the null hypothesis exists even when the proportional odds assumption can be considered reasonable. The likelihood of rejection is more pronounced in models that tends to contain large number of explanatory variables (Brant, 1990).

## Results

Table 1 shows that the overwhelming majority of respondents reported that they feel much or very much (92.70%) love for other people. Similarly, the vast majority reported that they feel loved by others much or very much (88.30%). Nevertheless, we found that feeling of love and love for others differ significantly by our covariates (not

presented in Table 1). Married respondents are significantly more likely to feel loved ( $\chi^2 = 4.02, p = .04$ ), but their love for others was not statistically different ( $\chi^2 = 0.10, p = .75$ ) from their nonmarried counterparts. Older adults who express higher level of altruism report feeling more loved ( $r = .16, p < .01$ ) and love for others ( $r = .25, p < .001$ ) than those with lower level of altruism. Similarly, older adults with higher level of emotional support report feeling more loved ( $r = .44, p < .001$ ) and love for others ( $r = .45, p < .001$ ). The respondents with higher level of disability were less likely ( $r = -.25, p < .001$ ) to report feeling loved and to express love for others ( $r = -.16, p < .01$ ).

The estimates displayed in Table 2 illustrate the influence of feeling loved and love for others on changes in depressive symptoms. The estimates for love in Model 1 show statistically significant negative influence of feeling of love and love for others on depressive symptoms. The increase in feeling of love and love for others over time led to on average 0.77 ( $p < .001$ ) and 0.78 ( $p < .01$ ) point decline in ordered log odds of reporting greater level of depressive symptoms over time, respectively. As indicated by statistically not significant interaction effects of age and love (feeling of love:  $\beta = -0.02, p = .65$ ; love for others:  $\beta = 0.01, p = .71$ ), the negative influence of love on depressive symptoms persisted as respondents grew older (not presented in Table 2). Model 2 shows that the magnitude of the estimates for feeling of love and love for others weakened after the inclusion of emotional support and altruistic attitudes. However, the statistically significant negative influence of feeling of love and love for others on depressive symptoms was maintained. Model 2 also documents statistically significant residual influence of emotional support with statistically significant lower ordered log odds of reporting higher level of depressive symptoms among older adults with higher levels of emotional support (feeling loved:  $\beta = -0.09, p < .05$ ; love for others:  $\beta = -0.09, p < .01$ ). Furthermore, Model 2 shows that the ordered log odds of reporting greater level of depressive symptoms increased ( $\beta = 0.09, p < .001$ ) for older adults who experienced increase in disability over time.

The ordinal logistic regression model estimates presented in Table 3 provide assessment of the influence of feeling loved and love for others on positive affect. Model 1 shows that the log odds of reporting higher level of positive affect were significantly greater for older adults who reported feeling more loved by others ( $\beta = 0.63, p < .001$ ) and expressed more love for other people ( $\beta = 0.43, p < .05$ ). The positive influence of feeling loved weakened, but remained statistically significant ( $\beta = 0.32, p < .05$ ) when emotional support and altruistic attitudes were included in Model 2. The inclusion of emotional support and altruistic attitudes in Model 2 did, however, render the positive influence of love for others statistically not significant ( $\beta = 0.03, p = .86$ ). While both emotional support and altruistic attitudes had a positive residual influence on positive affect, only the influence of emotional support was statistically

**Table 2.** GEE Estimates Representing the Influence of Feeling Loved and Love for Others on Changes in Depressive Symptoms

	Feeling loved		Love for others	
	Model 1	Model 2	Model 1	Model 2
	Estimates (SE), n = 299		Estimates (SE), n = 299	
Intercept 3	1.60* (0.77)	3.79** (1.10)	1.88* (0.91)	4.06** (1.22)
Intercept 2	4.43*** (0.82)	6.68*** (1.17)	4.67*** (0.95)	6.92*** (1.28)
Love	-0.77*** (0.13)	-0.67*** (0.13)	-0.78*** (0.17)	-0.66*** (0.16)
Age	-0.004 (0.01)	-0.005 (0.01)	-0.005 (0.01)	-0.006 (0.01)
Gender	0.61** (0.22)	0.75** (0.22)	0.63** (0.21)	0.77** (0.22)
Marital status	-0.08 (0.23)	-0.01 (0.23)	-0.14 (0.23)	-0.06 (0.23)
Race <sup>a</sup>				
Black	-0.31 (0.32)	-0.16 (0.33)	-0.24 (0.32)	-0.10 (0.32)
Cuban Latinx	0.17 (0.25)	0.40 (0.29)	0.27 (0.24)	0.49 (0.29)
Education	-0.44** (0.15)	-0.38* (0.15)	-0.51** (0.15)	-0.44** (0.15)
Living child	-0.18 (0.28)	-0.01 (0.28)	-0.21 (0.28)	-0.04 (0.28)
Disability	0.09*** (0.02)	0.09*** (0.02)	0.09*** (0.02)	0.09*** (0.02)
Altruistic attitudes		-0.07 (0.04)		-0.07 (0.04)
Emotional support		-0.09* (0.04)		-0.09* (0.04)
QIC	1714.45	1697.73	1723.70	1704.31

Notes: GEE = generalized estimating equation; QIC = quasi-likelihood under the independence model criterion.

<sup>a</sup>Reference = White.

\*p < .05. \*\*p < .01. \*\*\*p < .001.

**Table 3.** Ordinal Regression Model Estimates Representing the Influence of Feeling Loved and Love for Others on Positive Affect

	Feeling loved		Love for others	
	Model 1	Model 2	Model 1	Model 2
	Estimates (SE), n = 298		Estimates (SE), n = 297	
Intercept 5	-4.80** (1.45)	-7.27*** (1.72)	-3.62* (1.44)	-6.15*** (1.68)
Intercept 4	-2.88* (1.43)	-5.26** (1.70)	-1.74 (1.43)	-4.16* (1.67)
Intercept 3	-0.89 (1.43)	-3.17 (1.68)	0.17 (1.43)	-2.15 (1.65)
Intercept 2	1.01 (1.47)	-1.24 (1.71)	2.08 (1.47)	-0.23 (1.69)
Love	0.63*** (0.15)	0.32* (0.16)	0.43* (0.18)	0.03 (0.19)
Age	-0.01 (0.01)	-0.01 (0.01)	-0.02 (0.01)	-0.02 (0.01)
Gender	-0.08 (0.23)	-0.19 (0.24)	0.02 (0.23)	-0.13 (0.24)
Marital status	0.001 (0.24)	-0.15 (0.25)	0.14 (0.24)	-0.05 (0.25)
Race <sup>a</sup>				
Black	0.01 (0.32)	-0.19 (0.33)	-0.01 (0.32)	-0.15 (0.33)
Cuban Latinx	0.07 (0.27)	-0.14 (0.32)	-0.02 (0.27)	-0.19 (0.32)
Education	0.48** (0.16)	0.42* (0.17)	0.48** (0.16)	0.40* (0.16)
Living child	0.19 (0.29)	-0.06 (0.30)	0.22 (0.29)	-0.02 (0.30)
Disability	-0.03 (0.02)	-0.03 (0.02)	-0.04 (0.02)	-0.03 (0.02)
Altruistic attitudes		0.07 (0.05)		0.08 (0.05)
Emotional support		0.17*** (0.04)		0.18*** (0.04)
Model fit	761.50	742.41	770.43	748.39
-2Log likelihood				

Notes: <sup>a</sup>Reference = White.

\*p < .05. \*\*p < .01. \*\*\*p < .001.

significant (Model 2 for “feeling loved”:  $\beta = 0.17, p < .001$ ; Model 2 for “love for others”:  $\beta = 0.18, p < .001$ ).

Table 4 presents ordinal logistic regression estimates that depict the relationship between feeling loved and love for others, and negative affect. The estimate in Model 1 suggests statistically significant negative relationship between feeling loved and negative affect. Older adults who feel more loved had 0.71-point lower ordered log odds of reporting higher negative affect than those who reported lower level of love. Although the magnitude of the estimate for love for others was weaker than that for feeling loved, the influence of love for others on negative affect was also statistically significant ( $\beta = -0.54, p < .01$ ). As depicted in Model 2, the magnitude of the estimates for both feeling loved and love for others declined, but the influence of feeling loved remained statistically significant ( $\beta = -0.64, p < .001$ ) even after controlling for the influence of emotional support and altruistic attitudes. Model 2 also shows that the residual influences of emotional support and altruistic attitudes on negative affect were not statistically significant.

## Discussion

Our study documents that both experience and expression of love are reported by the vast majority of community-dwelling older adults in our study. Our findings underscore the value of “love in the lives of older adults” by offering strong evidence of beneficial effects of feeling loved by

others as well as having loving emotions toward others. The longitudinal nature of our design helps confirm the directionality of influences and reduces the chance that those with more depressive symptoms would describe their social environment as devoid of loving emotions. Our study diverges from the focus of previous studies on the physical expressions of love at the expense of broader loving emotions. We offer support for the expectation that love is a significant force in the lives of older adults that transcends intimate relationships. Furthermore, the human capacity for giving and receiving love remains strong well into old age and cuts across personal resources and family circumstances.

The concept of loving human interactions transcends traditional considerations of love as a dyadic phenomenon and reflects the almost universal potential of older adults for loving and being loved. The high prevalence of love in the lives of diverse older adults and the enduring nature of love over time support the view that love is a universal cultural phenomenon (Jankowiak, 2008). Our findings are consistent with work of Lopez and her colleagues (2018) regarding the positive influence of compassion for others and self-compassion on psychological well-being outcomes among community-dwelling adults in Netherlands. Similarly, our findings support recent work by Trent and her colleagues (2020) on college students that found significant influence of universal love on psychological well-being. Furthermore, our findings are at variance

**Table 4.** Ordinal Regression Model Estimates Representing the Influence of Feeling Loved and Love for Others on Negative Affect

	Feeling loved		Love for others	
	Model 1	Model 2	Model 1	Model 2
	Estimates (SE), $n = 298$	Estimates (SE), $n = 298$	Estimates (SE), $n = 297$	Estimates (SE), $n = 297$
Intercept 5	-1.49 (1.66)	-0.14 (1.91)	-2.44 (1.66)	-0.79 (1.88)
Intercept 4	0.56 (1.53)	1.93 (1.80)	-0.39 (1.52)	1.27 (1.76)
Intercept 3	1.97 (1.52)	3.34 (1.80)	0.99 (1.51)	2.67 (1.76)
Intercept 2	4.06* (1.54)	5.43** (1.82)	3.01* (1.52)	4.72* (1.77)
Love	-0.71*** (0.16)	-0.64*** (0.17)	-0.54** (0.18)	-0.38 (0.20)
Age	-0.03 (0.02)	-0.03 (0.02)	-0.02 (0.02)	-0.02 (0.02)
Gender	1.44*** (0.26)	1.52*** (0.27)	1.40*** (0.26)	1.52*** (0.27)
Marital status	0.11 (0.26)	0.18 (0.27)	0.01 (0.26)	0.09 (0.26)
Race <sup>a</sup>				
Black	-0.61 (0.35)	-0.56 (0.35)	-0.52 (0.35)	-0.44 (0.35)
Cuban Latinx	-0.25 (0.29)	-0.03 (0.34)	-0.11 (0.28)	0.07 (0.33)
Education	0.09 (0.17)	0.13 (0.18)	0.05 (0.17)	0.11 (0.17)
Living child	0.34 (0.32)	0.41 (0.33)	0.20 (0.31)	0.33 (0.32)
Disability	0.03 (0.02)	0.02 (0.02)	0.04 (0.02)	0.03 (0.02)
Altruistic attitudes		-0.06 (0.05)		-0.06 (0.05)
Emotional support		-0.03 (0.04)		-0.08 (0.04)
Model fit	614.72	612.48	623.07	617.87
-2Log likelihood				

Notes: <sup>a</sup>Reference = White.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .



with ageist views, that older adults are unlovable and incapable of giving love (Bytheway, 2005). Additionally, our findings speak to subjective experiences of social connectedness among older adults (Baumeister & Leary, 1995). Our findings confirm prior research that suggests good social relationships as the most prevalent indicator of having good quality of life among older adults (Gabriel & Bowling, 2004).

Key findings of our study confirm the connection between the experience of giving and receiving love and psychological well-being in late life, both cross-sectionally and longitudinally. Thus, love appears to foster both increase in positive affective states and decrease in negative affect among older adults. Our finding clearly demonstrates that changes in the feeling of love and love for others lead to statistically significant reduction in depressive symptoms. This influence persists even as respondents grow older (as indicated by statistically not significant interaction between age and love). These findings offer a resounding confirmation of key tenets of positive psychology (Seligman & Csikszentmihalyi, 2014) regarding the salutary value of positive emotions as exemplified by love. They are also consistent with Erik Erikson's notions about vital involvement in old age (Erikson et al., 1994).

Our findings regarding the role of emotional support and altruistic attitudes in impacting the link between loving emotions and psychological well-being provide evidence about the influence of these characteristics on mental health indicators, but they also reaffirm the enduring impact of loving emotions. The consideration of both altruistic attitudes and emotional support weakened the influence of feeling loved and love for others on depressive symptoms, but its strong statistical significance was maintained. Although weakened, the significant influence of feeling loved on positive and negative affects is maintained even after controlling for altruistic attitudes and emotional support. These findings reflect some conceptual overlaps between loving emotions, altruism, and social support. Altruism reflects some loving emotions toward generalized others. Reported receipt of emotional support is also likely to reflect loving orientations of friends and family providing support.

The persistence of positive influences of love suggest that feelings of being loved and expressions of love for others could impact psychological well-being through other positive emotions, including trust, and hopefulness (Kahana et al., 2011). It may also reflect the influence of love on neurobiological mechanisms that have been found to positively impact health. Positive emotions such as feeling love have been shown to increase vagal tone and oxytocin level in the body (Fredrickson, 2013; Shiota et al., 2011). The increase in vagal tone is associated with better physical and mental health (Kok et al., 2013), whereas increase in oxytocin is related to higher trust towards others and lower level of fear or perceived threat (Fredrickson, 2013).

Our findings also support the literature on the critical importance of social relationships on health of older adults (Cornwell et al., 2008). We found continued expression and experience of love not to be impeded by old age. However, frailty as indicated by functional limitations did diminish expressions of loving and feelings of being loved. The latter finding may indicate perceived social exclusion among older adults with physical disabilities (Kahana & Kahana, 2017). It is possible that challenges of care-getting and burdens generally found among caregivers may negatively impact the perceptions of experiencing love by care recipients (Kahana et al., 2010). In a society where ageism has been widely documented (Palmore, 2005), it is important to focus on extending love to older members of our society. Given that we are living in a world where longevity allows for more people to reach old age, extending love to our older community members becomes an important challenge to maintaining a civil society. A major challenge to a science of love relates to taking initiatives to eradicate indifference as a major enemy of love.

On the individual level, our findings offer important confirmation on contributions of experiencing love to psychological well-being in late life. On a macro level, older adults can be great resources in society's common quest for love. Hence, it is important to extend warmth and loving care to older adults in the context of caring communities that foster love for our fellow human beings (Fredrickson, 2013). With more and more people living to reach old age, recognizing the persistence of older adults' capacity to make loving connections with others can help in disavowing ageism and contribute to maintaining a civil society (Bellah et al., 2007).

We have noted unique strengths of our study based on a diverse sample of community-dwelling older adults and a longitudinal study design. Nevertheless, it is also important to acknowledge some methodological limitations. Despite strong face validity, we recognize the limitation of our measure of experience and expression of love as being based on single item indicators. A single item is less likely to capture different dimensions of compassionate love (e.g., love for family, friends, and neighbors vs. love for humanity as a whole) and hence, is likely to introduce measurement error. Future studies would benefit from comprehensive measures of giving of love to others and being recipients of love to provide more adequate assessment of compassionate love. In terms of our dependent variables of psychological well-being, longitudinal data were only available for depressive symptomatology and were absent for indicators of positive and negative affect. Longitudinal exploration of all of our dependent variables would be of value. Finally, our sample of Latinx participants was limited to Cuban older adults.

Despite these limitations, we report data based on a unique and innovative conceptualization of love that brings scientific exploration closer to common sense understandings. Our study also expands the horizons for understanding the range

of positive influences that contribute to late life psychological well-being. Social scientists have long reported findings that recognize the value of social connectedness (Cornwell et al., 2008), social supports and social capital for enhancing psychological well-being in late life (Rook & Charles, 2017). Expanding these understandings to encompass love makes a contribution to synthesizing findings in the emotion and relation sciences (Oravecz et al., 2020).

Our research also has important policy and practice implications that go beyond community-dwelling and relatively healthy older adults. Our findings underscore the need for extending opportunities for feeling loved and offering love to others to older adults living with disabilities and in long-term care institutional settings. We believe that calling attention to the salutary role of simple loving emotions in late life can help reduce isolation and marginalization of older adults.

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## Conflict of Interest

None declared.

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## Author Contributions

E. Kahana was PI of the original study collecting the data. She took the lead in conceptualization of the paper, writing of the literature review, and discussion. T. R. Bhatta contributed to conceptualization, literature review, and discussion. He conducted the data analysis and wrote the results. B. Kahana played a major role in conducting the original study, and provided critical revisions of the literature review and discussion. N. Lekhak contributed to the write-up of the introduction, literature review, and discussion.

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