



The Love Skills Assessment: Development, Validation, and Properties

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Abstract

Background: While the capacities to love self and others are universally recognized as essential for health and well-being, no simple, reliable, and valid assessment exists for measuring these capacities.

Methods: Alpha and beta versions of the love skills assessment (LSA), comprised of three subscales (lovability/ intrinsic self-esteem, love for self, and love for others) were administered to 251 respondents in two waves along with the UCLA loneliness scale, the Level of Personality Functioning Scale—Self Report (LPFS-SR), and a relationship satisfaction assessment. Items were successively eliminated from the alpha and beta versions to create a 15-item assessment that demonstrated adequate convergent validity of items with other items from their parent subscale, lesser correlation with different subscale items, and convergent validity with relationship satisfaction, loneliness, and personality problems, but not to a larger degree than with their parent subscale.

Results: The coefficient alpha internal consistency of the subscales ranged from .791 to .831. The three subscales demonstrated significant intercorrelation. All LSA scores were positively correlated with relationship satisfaction, with the Self-Love subscale yielding the largest values. The LSA scores were inversely related to both personality problems and to loneliness. The LSA Love for Others subscale was most strongly (inversely) related to Empathy and Intimacy problems. Lovability was most associated with lack of problems with Identity and Self-Direction, while Self-Love was strongly inversely related to Loneliness.

Conclusions: The LSA is a simple, easy to use, reliable and valid self-assessment for measuring lovability, self-care/self-love, and loving behavior towards others. Because of its brevity and simplicity, clinicians can easily use the LSA to assess these dimensions and efficiently track changes in these skills over time with treatment.

Introduction

Throughout the ages many have written on the centrality of love for a happy and fulfilled life [1]. Many definitions for various forms of love exist [2,3]. Several authors have written about various types of love and theories of love [4-6].

Love is used in this paper to mean a profound valuing of self, others and all of life that inspires actions to benefit self, others and all of life [7-9]. As used here, love is not so much a feeling as it is a sustained attitude of commitment to and adherence to loving actions towards oneself and others consistently over time [8].

Love as expressed in pair bonding has played a critical role in human evolution [10]. Many authors who write on the topic of love note problems with feeling lovable, being loved, and loving others as contributing to problems with depression, anxiety, addiction, and loneliness [11-13].

Many studies support the importance of loving relationships, forgiveness, and altruism for health, well-being, and reduced mortality [14-24]. Conversely, deficits in the capacity to love and be loved as evidenced by divorce, conflict, loneliness, and social isolation are risk factors for morbidity and mortality, including depression and anxiety [25,26].

Aristotle and St. Thomas Aquinas both saw self-love, or a sense of one's lovability, as the basis for loving others [27,28]. Bransen understands self-love as promoting the selflessness of loving others [29]. Yet self-esteem per se doesn't necessarily predict positive life outcomes [30]. Recent research suggests that self-esteem and social relationships enhance each other reciprocally [31]. Optimal self-esteem is in part implicit in nature and is characterized by the capacity for authenticity, which enhances relationships [32]. The importance of a sense of one's lovability for protecting health and well-being is supported by research that associates a lack

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of feeling lovable with vulnerability to depression and anxiety [33]. Taken as a whole, this research suggests that core to the capacity to love and be loved is a sense of one's lovability.

Given the evidence base suggesting the importance of lovability, loving, and being loved for health and well-being, an assessment of one's sense of their lovability and their skill at loving would provide objective data for use in clinical treatment for assessment and tracking of progress over time. Loving is a skill, sometimes referred to as the capacity for secure attachment, that is learned in early childhood from caregivers and can be habilitated through treatment [34-37]. Unfortunately, no brief and simple assessment of lovability and of one's ability to love oneself and others exists to our knowledge. The Multidimensional Self-Esteem Inventory by O'Brien and Epstein has a subscale for lovability but does not measure the capacity to love oneself or others [38]. The Rosenberg Self-Esteem Scale similarly does not measure the capacity to love self and others [39]. The Love Attitudes scale based on Lee's love typology does not measure either lovability or love skills [40]. The Capacity to Love inventory measures interest in others, basic trust, humility and gratitude, common ego ideal, sexual passion, and acceptance of loss/jealousy/mourning [41]. This instrument does not measure lovability. It is focused on the capacity for a committed romantic relationship rather than loving relationships in general. Similarly, Yela's Evaluation of Love measures erotic passion, romantic passion, intimacy, and commitment, but does not measure lovability, self-love, or loving relationships in general [42].

This paper discusses the development of the Love Skills Assessment (LSA), which seeks to provide a comprehensive measure of these skills by assessing lovability, self-love, and love for others. We describe the refinement and psychometric properties of the LSA, and examine the nature of its relationships to three potential indicators of impaired love skills: loneliness, problematic personality functioning, and satisfaction with key relationships.

Methods

Subjects

A total of 256 participants were recruited through Amazon Mechanical Turk (mTurk), an online platform for people to participate in studies researchers post to the site. Past research has demonstrated that mTurk samples offer a diverse and more accurate representation of the general United States population than other sources, such as college student sample pools [43]. Participants were recruited in two waves. The first wave included 52 individuals (54% male, 79% White/Caucasian, 47% between age 35 and 54, 41% between 18 and 34), and the second group included 199 respondents (62% male, 68% White/Caucasian, 48% between ages 18 and 34, 40% between 35 and 54). Participants were limited to IP addresses within the United States, and respondents included in the first wave were not permitted to enroll in the second wave sampling.

Measures

Love Skills Assessment: This paper discusses the development of the Love Skills Assessment (LSA), which measures lovability, self-love, and love for others. The first author generated a 128-item alpha version of the Love Skills Assessment by creating 25 items which had face validity for the construct of feeling lovable, 42 items which had face validity for the construct of loving behavior towards oneself, and 61 items which had face validity for the construct of

loving behavior towards others. The alpha version was refined in the first wave of testing to create a 33-item beta version as described below. The beta version was further revised to create the final 15-item version of the LSA.

UCLA Loneliness Scale [44]: This scale was used to measure loneliness levels, anticipated to be an outcome of impaired love skills. The UCLA measure is a 20-item questionnaire assessing social isolation and the personal perceptions of loneliness, with higher scores representing stronger feelings of loneliness. In this study, the coefficient alpha internal consistency of the UCLA scale was .959.

Level of Personality Functioning Scale-Self Report [45]: The LPFS-SR is an 80-item self-report instrument that assesses disturbances in self and interpersonal functioning on a global severity continuum, representing Criterion A of the Alternative Model of Personality Disorders (AMPD) of the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5) Section III. The LPFS-SR comprises four personality function components, including Identity (21 items) and Self-Direction (16 items) as subsets of self-functioning, and Empathy (23 items) and Intimacy (20 items) as subsets of interpersonal functioning. The measure utilizes a 4-point response scale (1 = Totally False, not at all True, 2 = Slightly True, 3 = Mainly True, and 4 = Very True), with an algorithm for weighting item scores as a function of theoretical level of personality dysfunction (weights ranging from $-.5$ for Level 0 "little or no impairment" items to $+3.5$ for Level 4 "extreme impairment" items). The LPFS-SR was highly internally consistent in the initial validation study [45] for the total score ($\alpha = .96$) and component scores (Identity: $\alpha = .89$, Self-Direction: $\alpha = .88$, Empathy: $\alpha = .82$, Intimacy: $\alpha = .88$), as well as in the validation study conducted by Hopwood et al. [46] (LPFS-SR total: $\alpha = .95$, Identity: $\alpha = .86$, Self-Direction: $\alpha = .86$, Empathy: $\alpha = .86$, Intimacy: $\alpha = .80$). It was anticipated that problems in key personality functions would lead to impairment in love skills, such that higher scores on the LPFS-SR (representing personality dysfunction) would be associated with less well-developed love skills.

Relationship Satisfaction: Participants' satisfaction with various forms of relationships were assessed with 5-point items that ranged from "very satisfied" to "very dissatisfied". Of particular interest for convergent validation were items tapping three specific types of relationships: those with spouse/partner, those with friends, and those with work/school colleagues. It was expected that problems in love skills would impede relationship formation and lead to lowered satisfaction with such relationships.

Procedure

The alpha version of the LSA was comprised of 128 items organized into the three domains described previously: 25 items on the Lovability subscale, 42 on the Self-Love subscale, and 61 on the Love for Others subscale. This alpha version was administered to the 52 participants in the first wave of sampling with the aim of ascertaining the preliminary psychometrics of the LSA and using those data as a guide to selecting items to be retained for further testing. The three subscales measured by the alpha version of the LSA demonstrated quite high internal consistency: coefficient alpha values of .926 for Section 1, .924 for Section 2, and .933 for section 3. These very high coefficient alphas supported the conclusion that the subscales could be appreciably shortened with little loss of reliability. It was also observed that, as predicted, all three subscales

correlated positively with different types of relationship satisfaction (correlations ranging from .203 to .695) and inversely with loneliness (correlations ranging from -.479 to -.710) and personality problems (correlations ranging from -.358 to -.373). However, the major shortcoming noted with the alpha version was potentially problematic discriminant validity, in particular very high association (correlation = .862) between the lovability and the loving towards self subscales. Thus, items were eliminated from the alpha version on the basis of the following item parameters: 1) items must demonstrate adequate convergent validity with other items from their parent subscale; 2) items must not be correlated to a larger degree with a different subscale than with their parent subscale; 3) items should demonstrate convergent validity with relationship satisfaction, loneliness, and personality problems, but not to a larger degree than with their parent subscale. Upon application of these rules, 95 items were eliminated to form a 33-item beta version of the LSA.

The beta version of the LSA was thus comprised of 33 items organized into the domains described previously, with 7 items on the lovability subscale, 13 items on the loving towards self subscale, and 13 items on the loving towards others subscale. These LSA-beta subscales, although substantially reduced in length from the alpha version, continued to demonstrate substantial internal consistency: coefficient alpha values of .816 for Section 1, .760 for Section 2, and .824 for section 3. As had been found with the alpha version, the LSA subscales all correlated positively with different types of relationship satisfaction (correlations ranging from .191 to .470) and inversely with loneliness (correlations ranging from -.384 to -.637) and personality problems (correlations ranging from -.349 to -.365). As intended, the associations

between the subscales were not as large as had been noted in the alpha (values ranging from .311 to .697), indicating that the beta revisions had successfully sharpened the discrimination between scales without sacrificing convergent validity with other indicators.

Because the goal for the LSA was to create a brief instrument that could easily and quickly be self-administered and scored, further item evaluation and elimination was conducted with the goal of selecting the best five items from each subscale, to produce a 15-item final version of the LSA. Similar principles as used above were applied in item selection to create the final version; although nearly all of the items met the three listed criteria, items were selected that maximized the desirable parameters, reflecting the best combination of both convergent and discriminant validity. This process resulted in the final 15-item version of the LSA, whose properties are described below.

Results

After completing the item selection procedures described above, 15 items—5 for each subscale—were retained for the final version of the LSA. These items, and various item parameters including endorsement rates, part-whole correlations, and factor loadings, are presented in Table 1. Items tended to demonstrate considerable correlations with their parent subscale score, and a factor analysis of these items (involving a principle component extraction with oblimin rotation) yielded three factors that collectively accounted for roughly 55% of the variation in item responses. The factor loadings for these factors reflected the conceptual grouping of the items (Factor I showing high loadings on lovability items, Factor II with loving towards others items, and Factor III with loving towards self items), with the largest factor loadings corresponding to the LSA subscales.

Table 1. LSA Item properties.

Item	Item content	Percent "true"	Corrected item/scale correlation	Factor Loadings		
				I	II	III
1	I feel good about myself.	76%	0.740	0.806	0.139	0.534
2	I feel adequate despite my faults and flaws.	75%	0.646	0.793	0.040	0.312
3	I feel worthy of being loved.	80%	0.653	0.815	0.159	0.251
4	I am of equal worth as others.	81%	0.602	0.771	0.311	0.227
5	I am basically a winner.	54%	0.537	0.633	0.236	0.459
6	I exercise regularly.	60%	0.416	0.262	0.151	0.811
7	I surround myself with good people who are good to me.	84%	0.535	0.610	0.274	0.544
8	I develop close friendships with healthy people who care for me.	82%	0.590	0.535	0.336	0.695
9	I am able to be in a healthy intimate partnership.	76%	0.495	0.492	0.336	0.617
10	I work on developing better habits.	84%	0.449	0.499	0.450	0.431
11	I think about other people's feelings.	87%	0.516	0.123	0.730	0.114
12	I do things for others without expecting anything in return.	84%	0.487	0.167	0.696	0.038
13	I show other people I appreciate them.	85%	0.573	0.231	0.754	0.326
14	I frequently praise others.	71%	0.432	0.153	0.617	0.163
15	I am devoted to the people I care about.	93%	0.434	0.099	0.639	0.229

Table 2. LSA means for total sample and demographic subgroups

Group	LSA Scale	LSA Mean	LSA SD
Total sample	Total score	11.71	3.44
	Lovability subscale	3.67	1.67
	Self-Love subscale	3.85	1.43
	Love for Others subscale	4.19	1.24
Men (n = 158)	Total score	11.72	3.40
	Lovability subscale	3.72	1.61
	Self-Love subscale	3.95	1.34
	Love for Others subscale	4.05	1.32
Women (n = 91)	Total score	11.67	3.57
	Lovability subscale	3.58	1.76
	Self-Love subscale	3.66	1.57
	Love for Others subscale	4.43	1.09
Age < 35 (n = 126)	Total score	11.40	3.39
	Lovability subscale	3.44	1.70
	Self-Love subscale	3.74	1.41
	Love for Others subscale	4.21	1.20
Age > 35+ (n = 129)	Total score	12.02	3.47
	Lovability subscale	3.88	1.61
	Self-Love subscale	3.96	1.44
	Love for Others subscale	4.17	1.28
Ethnicity White (n=185)	Total score	11.66	3.51
	Lovability subscale	3.62	1.77
	Self-Love subscale	3.78	1.48
	Love for Others subscale	4.25	1.22
Ethnicity Nonwhite (n=70)	Total score	11.84	3.26
	Lovability subscale	3.79	1.36
	Self-Love subscale	4.03	1.27
	Love for Others subscale	4.03	1.29

Table 3. LSA Internal consistency and external correlates

	Total score	Lovability	Self-Love	Love for Others
LSA Total score	<i>.851</i>	<i>.838</i>	<i>.876</i>	<i>.637</i>
LSA Lovability subscale	<i>.838</i>	<i>.831</i>	<i>.654</i>	<i>.227</i>
LSA Self-Love subscale	<i>.876</i>	<i>.654</i>	<i>.729</i>	<i>.399</i>
LSA Love for Others subscale	<i>.637</i>	<i>.227</i>	<i>.399</i>	<i>.719</i>
Rel. Satisfaction-Friends	<i>.544</i>	<i>.457</i>	<i>.572</i>	<i>.235</i>
Rel. Satisfaction-Partner	<i>.379</i>	<i>.314</i>	<i>.381</i>	<i>.192</i>
Rel. Satisfaction-Work	<i>.392</i>	<i>.344</i>	<i>.352</i>	<i>.219</i>
LPFS-SR Identity Problems	<i>-.445</i>	<i>-.427</i>	<i>-.353</i>	<i>-.252</i>
LPFS-SR Self-direction Problems	<i>-.422</i>	<i>-.371</i>	<i>-.330</i>	<i>-.291</i>
LPFS-SR Empathy Problems	<i>-.344</i>	<i>-.228</i>	<i>-.230</i>	<i>-.382</i>
LPFS-SR Intimacy Problems	<i>-.458</i>	<i>-.313</i>	<i>-.372</i>	<i>-.420</i>
LPFS-SR Total Problems	<i>-.453</i>	<i>-.370</i>	<i>-.352</i>	<i>-.353</i>
UCLA Loneliness	<i>-.667</i>	<i>-.591</i>	<i>-.632</i>	<i>-.328</i>

Note: Internal consistency estimates for LSA scores are italicized.

However, there were noteworthy cross loadings of the items from the LSA section II subscale with the factor representing the LSA section I subscale, suggesting that those two concepts are appreciably related.

The mean scores for the LSA scale and subscales are presented in Table 2, along with descriptive data for various demographic subgroups. In general, the mean scores for the subscales and the total score were roughly one standard deviation below the maximum possible score for the scale, suggesting that in this community sample the normative pattern involved general endorsement of higher love skills. This result was intended, as assessing the degree of deficiency in these love skills was of primary concern. For all three of the subscales, a score of 2 fell one standard deviation below the mean of the combined samples, suggesting potential deficits in these skills, while scores of zero fell two standard deviations below the mean, reflecting marked such deficits.

Table 2 reveals that demographic influences on LSA scores tended to be small. Independent sample t-tests indicated that across the four LSA scores and the three demographic variables, only two mean comparisons achieved statistical significances: Women obtained slightly higher scores on Love for Others than men ($t(247) = -.232, p < .03$, Cohen's d effect size = $-.30$), while participants age 35 and older demonstrated slightly higher Lovability scores than younger participants ($t(253) = -.212, p < .04$, Cohen's d effect size = $-.26$). In both instances, the observed effect sizes would be considered small [47]. No significant effects of ethnicity were observed on LSA scores.

Table 3 provides information about the internal consistency reliability of the LSA scores, as well as information about validity correlates with related measures. The coefficient alpha internal consistency of the subscales ranged from .719 to .831, substantial values for 5-item scales, and the value for the total score was .851. The three subscales demonstrated significant intercorrelation, with the Lovability and Self-Love subscales showing considerable association at .65. All LSA scores were positively correlated with relationship satisfaction of various types, with the Self-Love subscale yielding the largest values. The LSA scores were inversely related both to personality problems and to loneliness. The LSA Love for Others subscale was most strongly (inversely) related to Empathy and Intimacy problems, as might be expected. Lovability was most associated with lack of problems with Identity and Self-Direction, while Self-Love was strongly inversely related to Loneliness.

Discussion

The LSA measures the constructs of lovability, self-love, and love for others, doing so with brief 5-item subscales that demonstrate robust internal consistency. Lovability highly correlates with the degree to which individuals care for themselves, suggesting that feeling unlovable may cause impairments in self-care and/or vice versa. As might be expected from the self-esteem literature, feeling unlovable is also associated with impairments in loving others, although subjects with impaired lovability tended to be more loving towards others than they were to themselves.

The LSA subscales correlate reasonably well with relationship satisfaction, particularly with friends. This suggests the LSA demonstrates convergent validity in measuring the capacity for satisfying relationships. Of note is the particularly high correlation of self-love with satisfaction with friends. This appears to be due in part to items which ask about connecting with "good people" and developing healthy friendships as

aspects of self-love/self-care. The correlation of lovability (as a measure of intrinsic self-esteem) and satisfaction with relationships is also consistent with findings that people with low self-esteem have impairments in their relationships.

The results also indicate that the greater one's sense of one's lovability and self-love, the less lonely subjects were. Taken as a whole, these data suggest that the LSA has good convergent validity with the capacity to develop satisfying relationships that buffer against loneliness.

As expected, impairment in lovability is associated with personality problems in identity and self-direction. Impairments in self-love correlated with impairments in intimacy, which would be expected since self-love is in part defined by the capacity to form positive and sustaining social relationships. Impairments in love for others also correlated well with empathy and intimacy problems, suggesting the LSA constructs converge on the capacities for empathy and intimacy in relationships.

Overall, the results suggest that the LSA has validity in measuring lovability (intrinsic self-esteem), love for self, and love for others as a way of measuring relationship functioning, relationship satisfaction, and self-care.

How might the LSA inform intervention/treatment? The LSA is designed to measure the degree of reverence subjects feel for themselves and others and the degree they act on the experience of reverence in loving themselves and others, and these initial data suggest that it is able to do so reliably and efficiently. As discussed, low self-esteem correlates with clinical problems of anxiety, depression and addiction, the three most common psychiatric conditions. We also know that low self-esteem often results from trauma and neglect. Nonetheless, love reflects implicit skills or capacities learned in early development from our caregivers that can be developed [48]. Much of our clinical work with patients experiencing psychiatric illness is addressing the underlying impairments in patients' love skills caused by trauma and neglect. The LSA gives clinicians and patients a short, simple, easy-to-use tool for measuring patients' love skills, communicating the results to patients, and then measuring changes over time with treatment.

Conclusion

The LSA is a simple, easy to use, reliable and valid self-assessment for measuring lovability, self-care/self-love, and loving behavior towards others. Together, these are called "love skills," and impairments in these skills are associated with relationship difficulties and personality problems. Because of its brevity and simplicity, clinicians can easily use the LSA to assess these dimensions and efficiently track changes in these skills over time with treatment.

Declarations

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Availability of data and material: Available from corresponding author.

Code availability: Not applicable.

Authors' contributions: Initial alpha version created by MM. Test administration and data collection performed by MM. Psychometric analyses performed by LM. All authors have read and approved the manuscript.

Ethics approval: Not applicable. The authors conducted this study independently and not as part of an institution. There is no Institutional Review Board. The need for ethics approval was waived because it was deemed unnecessary according to national regulations. (See Electronic Code of Federal Regulations (eCFR), §46.104 Exempt research. Electronic Code of Federal Regulations (eCFR))

Consent to participate: This was an online survey in which the authors paid respondents to participate. Because nobody can coerce someone to do an online survey, and because it is anonymous, (we don't know the respondents' identities) it is exempt from IRB review according to the regulations. (See Electronic Code of Federal Regulations (eCFR), §46.104 Exempt research. Electronic Code of Federal Regulations (eCFR))

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