The Revised UCLA Loneliness Scale: Concurrent and Discriminant Validity Evidence

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The development of an adequate assessment instrument is a necessary prerequisite for social psychological research on loneliness. Two studies provide methodological refinement in the measurement of loneliness. Study 1 presents a revised version of the self-report UCLA (University of California, Los Angeles) Loneliness Scale, designed to counter the possible effects of response bias in the original scale, and reports concurrent validity evidence for the revised measure. Study 2 demonstrates that although loneliness is correlated with measures of negative affect, social risk taking, and affiliative tendencies, it is nonetheless a distinct psychological experience.

Social relationships are at the core of human life. Not surprisingly, problematic aspects of relationships have been a major focus of psychological research. Psychologists have undertaken careful analyses of aggression, competition, crowding, and other negative factors in social relations. Some problems of social relations have, however, been emphasized to the neglect of others. Researchers have investigated instances where there are "too many" people, and individuals feel subjectively "crowded" (e.g., Freedman, 1975; Stokols, 1972). However, little attention has been given to the other end of the continuum where social relationships are "too few," and people feel subjectively "lonely."

The importance of research on loneliness lies not only in its potential for shedding light on basic aspects of social relations but also in the fact that loneliness is a common and distressing problem for many people. In one national survey (Bradburn, 1969), 26% of Americans reported having felt "very lonely or remote from other people" during the past few weeks. Loneliness has been linked to a variety of other serious individual and social problems, including alcoholism (Nerviano & Gross, 1976), adolescent delinquent behavior (Brennan & Auslander, Note 1), suicide (Jacobs, 1971; Wenz, 1977), and physical illness and overutilization of health care services (Lynch, 1976).

Empirical research on loneliness has been hampered by a variety of problems (see reviews by Peplau & Perlman, 1979; Peplau, Russell, & Heim, 1978). A major hindrance is that loneliness, unlike aggression, competition, and crowding, cannot be readily manipulated by researchers. Thus, the crucial task for investigators is not the development of an experimental paradigm to produce loneliness in differing degrees under controlled conditions but rather the development of instruments to detect variations in loneliness that occur in everyday life.

Our research on loneliness led initially to the development of a 20-item, self-report measure, the UCLA (University of California, Los Angeles) Loneliness Scale (Russell, Pepl-
lau, & Ferguson, 1978). In studies using college samples, the scale showed high internal consistency (coefficient alpha of .96). Concurrent validity was indicated by relationships between scores on the loneliness scale and other indicators of loneliness, social relationships, and affective states.

Research by several other investigators has also supported the adequacy of the UCLA Loneliness Scale as a measure and has begun to provide a more detailed description of the experience of loneliness. Loneliness is related to a number of personal characteristics, including low self-esteem, shyness, feelings of alienation, external locus of control, and belief that the world is not a just place (Jones, Freemon, & Goswick, in press). Lonely students report experiencing problems of inhibited sociability (Horowitz & French, 1979) and, in dyadic interactions, rate both themselves and their partners more negatively than do nonlonely students (Jones et al., in press). Among both students and older adults, loneliness is linked to negative affects, including boredom, restlessness, and unhappiness, and to dissatisfaction with social relationships (Perlman, Gerson, & Spinner, 1978; Russell et al., 1978).

Although the UCLA Loneliness Scale is a reasonably adequate measure, several potential problems with the scale are apparent. First, all items on the scale are worded in the same direction, with high scores reflecting feelings of social dissatisfaction. Any systematic response bias toward high or low scores, irrespective of item content, would influence the total scale score. A second potential problem concerns the discriminant validity of the scale. Substantial correlations (ranging from .4 to .5) have been found between loneliness scores and the Beck Depression Inventory (Bragg, 1979) and the Coopersmith measure of self-esteem (Jones et al., in press). Conceptually, it is reasonable that loneliness might co-occur with depression and low self-esteem, and such findings support the validity of the UCLA Loneliness Scale. At the same time, however, these findings indicate a need to demonstrate the discriminant validity of the scale by showing that loneliness is distinct from related constructs. A final concern is the potential confounding of loneliness scores with social desirability. Since there is a social stigma attached to loneliness (Gordon, 1976), individuals who want to appear in a positive light might underreport their experience of loneliness.

The two studies reported here address these potential problems with the original UCLA Loneliness Scale and provide clarification concerning the nature of loneliness. In the first study, a revised version of the UCLA Loneliness Scale is developed, incorporating new positively worded items. The concurrent validity of the revised scale is established by relating loneliness scores to the experience of affects that have been linked both empirically (Russell et al., 1978) and theoretically (Weiss, 1973) to loneliness. A second study provides a further test of the concurrent validity of the revised scale by examining relationships between loneliness and social behavior. In addition, Study 2 addresses the discriminant validity of the revised scale by demonstrating that loneliness scores are distinct from measures of social desirability, social risk taking, negative emotional states, and affiliative motivation.

**Study 1**

The first study had several goals. First, it was designed to revise the UCLA Loneliness Scale by incorporating new, positively worded items. The internal consistency of this revised measure was assessed, and the correlation between scores on the original and the revised scale was calculated. Finally, the concurrent validity of the revised loneliness scale was investigated.

**Method**

The 162 students (64 males and 98 females) who voluntarily participated in Study 1 were all tested in the spring of their first year at UCLA. They completed an extensive questionnaire; pertinent to this research were the measures of loneliness and emotional states. **Loneliness measures.** The original UCLA Loneliness Scale (Russell et al., 1978) was given, followed by 19 new items written by the authors. These new items measured satisfaction with social relationships and represented, as nearly as possible, opposite wordings of the original scale items.
A second set of measures assessed explicit self-labels of loneliness. Examples of such questions are "During your lifetime, how often have you felt lonely?" and "During the past two weeks, how lonely have you felt?" Six such questions were asked, all involving the student identifying himself or herself as lonely. Responses to each of these six questions were summed to form a single self-labeling of loneliness index (coefficient alpha = .78).

Emotional state. The questionnaire contained three mood measures assessing anxiety and depression. The Beck Depression Inventory (BDI; Beck, 1967) consists of 21 symptoms or attitudes characteristic of clinical depression. Each item has several alternatives describing manifestations of each symptom that vary in intensity. Scoring on each item ranges from 0 to 3, depending on the severity of the symptom manifestation that is selected by respondents as being self-descriptive. The BDI was found to be quite reliable with clinical populations, with a Spearman-Brown split-half coefficient of .93 being reported. Validity for the measure has been indicated by relating BDI scores to clinical judgments of the severity of depression: Correlations of .65 and .67 were found in two studies. The BDI has also been shown to assess validly the severity of depression in college populations (Bumberry, Oliver, & McClure, 1978).

The Costello-Comrey Depression and Anxiety scales were also administered (Costello & Comrey, & McClure, 1978). To develop these scales, a variety of factor analytic studies were conducted with both normal and clinical populations. The goal of these analyses was the construction of factorially "pure" anxiety and depression scales, which minimized the intercorrelation of the two measures; the final anxiety and depression scales were found to correlate .40 for males and .50 for females. Validity for the two scales has been indicated by relationships with clinical diagnoses and other measures of anxiety and depression. Split-half reliabilities of .90 for the depression scale (14 items) and .70 for the anxiety scale (9 items) have been reported.

In addition to these mood measures, students also rated on 9-point scales the intensity of their current experience of 25 emotions. These included such affects as bored, empty, hopeless, and satisfied, along with a set of affects believed to be unrelated to loneliness, such as resigned, embarrassed, and confident.

Results

Data analyses had two goals: to develop a revised loneliness scale and to assess the concurrent validity of the revised scale.

Revised UCLA Loneliness Scale. Prior to data analysis, it was decided that the new scale should consist of 20 items, half reflecting satisfaction with social relationships and half reflecting dissatisfaction. Accordingly, 10 of the new positively worded items were selected for the final scale, along with 10 of the original negatively worded items. The criterion for selecting these items was their correlation with the self-labeling loneliness index. The 10 positively worded and 10 negatively worded items that had the highest correlations (all greater than .40 in magnitude) with the self-labeling index were selected for the final instrument. The revised UCLA Loneliness Scale items and scoring format are given in Table 1. Note that the original and new items are randomly intermixed in the revised scale.

The internal consistency of the revised measure was high (coefficient alpha of .94) and compared favorably with the alpha coefficient of .96 obtained for the original scale. The correlation between the revised and original scales for the present sample was .91.

Tests for sex differences were also conducted, comparing the scores of male and female students on the revised measure. A significant sex difference was found, $t(157) = 3.20, p < .001$, with men scoring significantly lonelier than women ($Ms = 36.23$ and $31.12$, respectively). However, including sex

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1 From the current data, we have also developed a 4-item survey version of the UCLA Loneliness Scale, consisting of two positively worded and two negatively worded items. Using optimal subset regression procedures, the set of four items that best predicted scores on the self-labeling loneliness index were selected. The items chosen were Numbers 1, 13, 15, and 18 from Table 1. This four-item loneliness scale had a coefficient alpha of .75 in the current study. We recommend that investigators who want a shortened version of the loneliness scale use these four items. Normative data and a bibliography of research using both versions of the scale are also being compiled by the authors. Investigators using the measures are urged to send us summary data from their samples as well as a brief description of their research and findings.

2 Since previous research has not indicated any sex differences in loneliness, this result suggests a possible sampling bias. The participants in Study 1 were originally tested in the fall of their first year at UCLA, and returning versus nonreturning students were compared on their loneliness scores from this earlier testing. No significant differences were found for women. In contrast, men who returned for retesting were lonelier than nonreturning men, $t(143) = 2.45, p < .02$, which could have created the observed sex differences. Because of this possible sampling bias, data from the participants in Study 1 were not included in the normative statistics presented in Table 2.
THE REVISED UCLA LONELINESS SCALE

Table 1

The Revised UCLA Loneliness Scale

Directions: Indicate how often you feel the way described in each of the following statements. Circle one number for each.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I feel in tune with the people around me^a</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. I lack companionship</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. There is no one I can turn to</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. I do not feel alone^a</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. I feel part of a group of friends^a</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. I have a lot in common with the people around me^a</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. I am no longer close to anyone</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. My interests and ideas are not shared by those around me^a</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. I am an outgoing person^a</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. There are people I feel close to^a</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. I feel left out</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. My social relationships are superficial</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. No one really knows me well</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14. I feel isolated from others</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. I can find companionship when I want it^b</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16. There are people who really understand me^a</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17. I am unhappy being so withdrawn</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18. People are around me but not with me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19. There are people I can talk to^a</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20. There are people I can turn to^a</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Note. The total score is the sum of all 20 items.
^a Item should be reversed (i.e., 1 = 4, 2 = 3, 3 = 2, 4 = 1) before scoring.

as a variable in the analyses indicated that sex did not mediate any of the findings.

Loneliness and emotional state. To assess the concurrent validity of the revised scale, the relationship of loneliness scores to measures of emotional states was examined. Loneliness scores were significantly correlated with scores on the Beck Depression Inventory ($r = .62$) and with the Costello-Comrey Anxiety ($r = .32$) and Depression ($r = .55$) scales. Loneliness scores were also significantly correlated (all $rs$ above .40) with feeling abandoned, depressed, empty, hopeless, isolated, and self-enclosed and with not feeling sociable or satisfied. Loneliness scores were not significantly correlated with such conceptually unrelated affects as feeling creative, embarrassed, sensitive, surprised, or thoughtful.

Study 2

Having obtained evidence concerning the psychometric properties and concurrent validity of the revised UCLA Loneliness Scale, we undertook a second study to investigate issues of validity in greater detail. The goal of Study 2 was to demonstrate that loneliness, as measured by the revised scale, is discriminable from measures of other, conceptually related constructs such as depression, lack of affiliative motivation, and low social risk taking. Study 2 also replicated the internal consistency analyses reported in Study 1 with a new sample and provided additional tests of concurrent validity.

Method

To increase the generality of the findings, a broader sample of college students was recruited. One third of the students were enrolled in introductory psychology classes at the University of Tulsa, one third were enrolled in introductory psychology classes at UCLA, and the remaining students were drawn from upper division psychology classes at UCLA. All students received partial course credit for their participation. The total sample of 237 students (107 males and 130 females) each completed a questionnaire containing the following materials, with the order of the materials randomly varied.
Loneliness measures. The original UCLA Loneliness Scale was administered, along with the 10 positively worded items included in the revised scale. The self-labeling loneliness questions from Study 1 were also given, and a self-labeling loneliness index was again created by summing the responses to these six items (coefficient alpha = .72).

Social activities and relationships. Students were asked how frequently they had engaged in a variety of solitary activities (e.g., eaten dinner alone) and social activities (e.g., done something with a friend) during the previous 2 weeks. Students also indicated how many close friends they had and the nature of their current dating or marital status.

Mood and personality measures. Seven measures of mood and personality were administered. To assess depression, the Beck Depression Inventory (Beck, 1967) was given. State anxiety was measured using the State–Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, & Lushene, 1970). This scale consists of a set of affective statements (e.g., "I feel calm") that are used by respondents to describe their current feelings. Validity evidence for this measure consists of correlations with other anxiety measures and scores of individuals exposed to anxiety-provoking situations. Internal consistency for the STAI is high, with coefficient alphas ranging from .83 to .92 in different studies.

Self-esteem was measured using the Texas Social Behavior Inventory (TSBI-Form A; Helmreich & Stapp, 1974). This scale is designed to assess social self-esteem; items concern the respondent's feelings of social self-confidence. The TSBI has been validated by demonstrating relationships with interpersonal attraction in laboratory settings and with the endorsement of positive self-descriptions on a measure of masculinity and femininity. For the version of the scale used here, a coefficient alpha of .85 was found for both males and females.

Mehrabian's (1970) measures of Affiliative Tendencies and Sensitivity to Rejection were included to assess approach and avoidance orientations toward social relationships. Validity for the measures has been indicated by low correlations with a measure of social desirability and (as theoretically predicted) by nonsignificant correlations between scores on the two scales. In laboratory studies the Affiliative Tendency scale has been related to affiliative behavior in social situations and to a measure of dependency. Sensitivity to Rejection has been related to dependency and to conformity in social situations. The reliabilities for both measures are sufficiently high; K-R 20 (Kuder-Richardson formula) coefficients of .80 and .83 are reported by Mehrabian for the Affiliative Tendency and Sensitivity to Rejection scales, respectively.

To measure social desirability, the Marlowe-Crowne Social Desirability Inventory (Crowne & Marlowe, 1964) was administered. This scale is designed to identify individuals who tend to describe themselves in an overly positive or desirable fashion. Individuals who respond in a socially desirable fashion on this measure have been found to be more favorable in their attitudes toward a boring task, to be socially conforming, and to be very susceptible to persuasion. A test–retest correlation of .88 for this measure has been reported over a 1-month period. Internal consistency for the measure is also high, with a K-R 20 coefficient of .88 being found.

The measures of introversion–extroversion and lying developed by Eysenck and Eysenck (1975) were also administered. The Introversion–Extroversion scale is designed to assess whether the respondent is a sociable and friendly person versus a quiet and introspective person. Validation of this measure has involved demonstrations of relationships between scores on the scale and conditionability, level of aspiration, vigilance, and time judgment, based on Eysenck's personality theory. The Lie scale is designed to assess whether individuals are distorting their responses. This measure has been validated by comparing scores on the scale under conditions where the respondents should be motivated to distort their responses versus neutral conditions. Test–retest reliabilities for both measures are high, with a correlation of .89 found for the Introversion–Extroversion scale and .84 for the Lie scale over a 1-month period. A coefficient alpha of .85 is reported for the Introversion–Extroversion scale and .80 for the Lie scale.

A final measure that was administered was the Assertiveness scale developed by Ratus (1973). On this scale, respondents indicate how self-descriptive a set of assertive and nonassertive behaviors are. Validity for the measure has been indicated by significant correlations between scores on the scale and peer ratings of assertiveness. Significant relationships were also found between scale scores and verbal reports of assertive behavior in different social situations. Test–retest reliability (over a 2-month interval) of .78 is reported by Ratus, along with a split-half correlation of .77. For the present study, half of the 30 items on the Rathus measure were used, consisting of every odd item from the scale.

Results

Sex differences. Comparisons were made between the mean loneliness scores for males and females. In contrast to the findings reported in Study 1, no significant differences were found, t(228) = .72, ns. In Table 2, normative loneliness data from this sample are presented separately for males and females. Including sex as a variable in the analyses reported below indicated no mediation of the relationships by sex of subject.

Internal consistency. To cross-validate the internal consistency findings from Study 1, the same procedures were used to analyze data from the second study. An alpha coefficient of .94 was again found for the revised loneliness
measure; and once again the correlation between scores on the original and revised loneliness scales was .91. The similarity of the findings from these two independent studies is striking.

Concurrent validity. The relationship between scores on the revised loneliness scale and measures of social activities and relationships were examined as a test of concurrent validity. For solitary relationships, significant correlations (all $p < .001$) were found between loneliness scores and the amount of time students spent alone each day ($r = .41$), the number of times they had eaten dinner alone during the previous 2 weeks ($r = .34$), and the number of times they had spent a weekend night alone during the previous 2 weeks ($r = .44$). Lonely students also reported doing fewer social activities with friends ($r = -.28$) and having fewer close friends ($r = -.44$). The relationship between loneliness and dating or marital status was examined, using analysis of variance to compare three groups: those students who were not dating at all, those students dating casually, and those students either dating steadily or married. Using scores on the revised UCLA Loneliness Scale as the dependent measure, significant differences were found among these three groups, $F(2, 187) = 22.97, p < .001$. Students who were not dating at all had a mean loneliness score of 43.1; students who were dating casually and those who were romantically involved had means of 34.0 and 32.7, respectively. Post-hoc comparisons (using the Scheffe procedure) indicated that students who were not dating were significantly more lonely than the other two groups, $F(1, 189) = 35.23, p < .001$; students who were dating casually did not differ significantly from those who were dating steadily or who were married.

Discriminant validity. The discriminant validity of the revised scale was assessed by examining the relationship between loneliness scores and scores on the other measures of mood and personality. Initial analyses examined the correlation of loneliness scores with the mood and personality measures and the self-labeling loneliness index. An inspection of these correlations (see Table 3) indicates that loneliness scale scores correlate more highly with the self-labeling loneliness index than with any of the other measures. Nonetheless, loneliness was strongly correlated with many of the mood and personality variables, raising the possibility that these variables might, if combined, account for much of the variance in loneliness scores. For example, loneliness might be a function of low social risk taking combined with high levels of anxiety. Therefore, a second discriminant validity test was conducted to examine whether scores on the UCLA Loneliness Scale were related more closely to the other measures of loneliness (i.e., the self-labeling loneliness index) than to an optimal linear combination of the mood and personality variables.

Multiple regression analysis was used to combine the mood and personality measures as predictors of loneliness. To eliminate correlations among the predictors, a factor analy-

Table 3
Correlation of Scores on the Revised UCLA Loneliness Scale With Self-Labeled Loneliness and the Measures of Mood and Personality

<table>
<thead>
<tr>
<th>Measure</th>
<th>Revised UCLA Loneliness Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-labeling loneliness index</td>
<td>.705</td>
</tr>
<tr>
<td>Depression</td>
<td>.505</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>-.493</td>
</tr>
<tr>
<td>Introversion-extroversion</td>
<td>-.457</td>
</tr>
<tr>
<td>Affiliative tendency</td>
<td>-.452</td>
</tr>
<tr>
<td>Anxiety</td>
<td>.359</td>
</tr>
<tr>
<td>Assertiveness</td>
<td>-.342</td>
</tr>
<tr>
<td>Sensitivity to rejection</td>
<td>.276</td>
</tr>
<tr>
<td>Social desirability</td>
<td>-.203</td>
</tr>
<tr>
<td>Lying</td>
<td>-.001</td>
</tr>
</tbody>
</table>

Note. Based on 239 students in Study 2.
sis was first conducted on the mood and personality measures. Using principal factoring with a varimax rotation, a four-factor structure emerged. The first factor was labeled Social Risk Taking; measures of introversion–extraversion, self-esteem, sensitivity to rejection, and assertiveness loaded highly on it. A second factor was labeled Negative Affect; the depression and anxiety scales defined this factor. The third factor was labeled Social Desirability, since the measures of social desirability and lying loaded highly on this factor. A final factor was labeled Affiliative Motivation; the affiliative tendency and introversion–extraversion scales had high loadings.

In the subsequent regression analyses, scores on these four factors were used in lieu of the nine separate scales to predict scores on the revised loneliness scale. All four factor scores were entered simultaneously into the regression equation. The regression results are summarized in Table 4. Affiliative motivation, social risk taking, and negative affect were all significant predictors of loneliness, whereas the social desirability factor was unrelated to loneliness. In combination, these four factors predicted 43% of the variance in loneliness scores.

Although these factors were predictive of loneliness, in combination they were not able to account for less than half the reliable variance in loneliness scores. Using the alpha coefficient as a lower bound estimate of the revised loneliness scale's reliability, an additional 52% of the variance in loneliness scores is potentially explainable. This permitted a second discriminant validity test for the loneliness scale—a test of whether the unexplained variance could be accounted for by the self-labeling loneliness index.

To investigate this possibility, a hierarchical regression analysis was performed. The four mood and personality factors were entered first into the regression equation, followed by the self-labeling loneliness index. After eliminating the variance explained by the mood and personality factors, the self-labeling loneliness index was still a significant predictor of loneliness, $F(1, 169) = 81.01, p < .001$. An additional 18% of the variance in loneliness scale scores was explained by the loneliness index. This result provides clear evidence of the discriminant validity of the revised UCLA Loneliness Scale.

A final discriminant validity test examined whether the previously reported concurrent validity evidence for the UCLA Loneliness Scale was based solely on the influence of the mood and personality variables. For example, is the relationship between loneliness and the number of close friends uniquely attributable to loneliness, or does it reflect the fact that loneliness is correlated with low affiliative motivation and low social risk taking? The general question is whether the relationships found between loneliness and social behaviors are due to the influence of a third set of variables (i.e., the mood and personality measures) on both the person's loneliness and social relations. If scores on the revised loneliness scale are related to the concurrent validity criteria independent of the mood and personality variables, then further discriminant validity evidence for the scale is provided.

The concurrent validity analyses were therefore redone, using partial correlations to control statistically for the effect of the mood and personality variables. Significant relationships ($p < .001$) were again found between

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*The factor analysis results are available from the authors.*
loneliness scores and the amount of time alone each day \((r = .27)\), the number of times dinner was eaten alone \((r = .31)\), the number of weekend evenings alone \((r = .31)\), and the number of close friends \((r = -.27)\). However, the relationship between loneliness and the number of social activities now only approached significance \((r = .12, p < .07)\). Analysis of covariance was used to test the relationship between loneliness and current dating or marital status, controlling for the effect of the mood and personality variables. This significant relationship also persisted, \(F(2, 144) = 7.35, p < .001\).

General Discussion

The results from Studies 1 and 2 indicate that the UCLA Loneliness Scale has been successfully revised. The revised loneliness scale has high internal consistency, with a coefficient alpha of .94 found in both studies. Concurrent validity for the new measure was indicated by demonstrating that lonely people report experiencing emotions theoretically linked to loneliness and do not report experiencing emotions unrelated to loneliness. Lonely individuals also reported more limited social activities and relationships. Discriminant validity for the revised loneliness scale was indicated by evidence that scores on the measure were not confounded by social desirability. Scores on the scale were also found to correlate more highly with other measures of loneliness than with the measures of mood and personality variables that were examined. The revised loneliness scale passed a very stringent discriminant validity test, with the demonstration that relationships between loneliness and the concurrent validity criteria examined in Study 2 were independent of the influence of the other mood and personality variables on loneliness.

An important issue raised by altering the UCLA Loneliness Scale is whether empirical relationships found by researchers using the original scale are still valid for the revised version. In Studies 1 & 2, the high correlation of .91 between scores on the original and revised loneliness scales suggests that previous findings would still hold true for the new scale. Future research replicating earlier findings would provide empirical evidence on this issue.

Although the results from the current studies support the utility of the UCLA Loneliness Scale as a measure of loneliness, it should be emphasized that the validity of a measure is never "proven." The validity of the loneliness scale in other populations needs to be established, and the ability of the measure to detect loneliness in such "at risk" groups as newcomers and the recently divorced should also be investigated. We hope that the UCLA Loneliness Scale will provide a starting point for a greater understanding of the widespread and distressing experience of loneliness.

Reference Note


References


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