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Locke-Wallace Short Marital-Adjustment Test: Psychometric Evaluation in Caregivers for Persons With Primary Malignant Brain Tumor

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Abstract

Background and Purpose—Caregivers' well-being has been found to be associated with marital adjustment. This study's purpose was to evaluate the psychometric properties of the Locke-Wallace Short Marital-Adjustment Test (LWSMAT) in a sample of caregivers of persons with primary malignant brain tumor (PMBT).

Methods—Secondary analysis of data collected from 114 caregivers. The LWSMAT was tested for factor structure, internal consistency reliability, and construct validity.

Results—5 extracted factors explained 60.55% of the total variance. Four interpretable factors (Contentment & Communication, Leisure & Sociality, Intimacy, and Shared Philosophy) had Cronbach's alpha between 0.63 and 0.74. Convergent validity ($r = -.35$ and $r = -.43$, respectively, both $p < .0001$) and discriminant validity ($r = .07$, $p = .49$; and $r = -.04$, $p = .67$) were confirmed by comparing four factors with subdimensions of the Caregiver Reaction Assessment (CRA).

Conclusion—The LWSMAT is a multidimensional, reliable, and valid measure of marital adjustment in caregivers of persons with a PMBT.

Keywords

marriage; personal satisfaction; psychometrics; family; caregivers; brain neoplasms

Marital adjustment has long been used to describe the quality and stability of marriage. A well-adjusted marriage is expected to last for a long time and be satisfying by both spouses. The quality of marital relationship has been found to be consequential for health. A poor marital relationship could influence physiological functions and impact health outcomes through depression and health habits (Kiecolt-Glaser & Newton, 2001). Compelling evidence supports that caregiving burden and depressive symptoms are linked with marital stress (Carmack Taylor et al., 2008; Davis, Gilliss, Deshefy-Longhi, Chestnutt, & Molloy, 2011; McPherson, Wilson, Chyurlia, & Leclerc, 2010; Pereira, Daibs, Tobias-Machado, & Pompeo, 2011; Simonelli et al., 2008). A spouse might respond negatively to his/her partner with cancer because of a poorly adjusted marital relationship, specifically related to a greater restriction of activities and a negative mood (Carmack Taylor et al., 2008; Lewis, Fletcher, Cochrane, & Fann, 2008). Caring for a person with brain tumor is specially challenging for the family caregiver because of the person's cognitive and behavioral changes. Communication, enjoyment of companionship, and the level of intimacy between the couples can deteriorate as the person's cognitive function declines (Garand et al., 2007). Research suggests that caregivers' psychosocial well-being and quality of life are significantly influenced by the functional status of persons with brain tumor (Finocchiaro et al., 2012; Schubart, Kinzie, & Farace, 2008) and caregivers' marital adjustment is very likely to be affected by their stressful caregiving activities (Glantz et al., 2009).

An accurate measure of caregiver marital adjustment is an important tool for understanding the relationship between marital adjustment and caregiver burden in caregivers of patients with brain tumors. Numerous marital adjustment tests have been widely used in practice and research, including the Locke-Wallace Short Marital-Adjustment Test (LWSMAT), which is one of the most frequently used instruments for the measurement of marital adjustment. The reliability and validity of the LWSMAT has been explored and been established among the general population (Freeston & Plechaty, 1997; Locke & Wallace, 1959; Spanier, 1972). However, its psychometric properties have not been evaluated among caregivers of patients with cancer, particularly for patients with a primary malignant brain tumor. The purpose of this study was to evaluate the psychometric properties of the LWSMAT in a sample of caregivers of persons with primary malignant brain tumor (PMBT).

BACKGROUND AND CONCEPTUAL ISSUES

About 1.6 million people are diagnosed with cancer each year in the United States (American Cancer Society, 2012). PMBTs account for about 2% of all cancers (Central Brain Tumor Registry of the United States, 2011), and the average survival time of a PMBT has been extended because of recent advances in surgical and radiation treatments (Grier & Batchelor, 2006). It is estimated that at least 50% of patients diagnosed with cancer will be cared for by their family members, and 70% of caregivers are married (Family Caregiver

Alliance, 2011). Traditional family roles and relationships may change because of the occurrence of cancer in family members, especially when long-term care at home is needed (Shim, Landerman, & Davis, 2011; Ussher, Tim Wong, & Perz, 2011). Both spouses may face the risk for unsatisfactory relationships. Cancer survivors' functioning is an important factor for their spousal caregivers' marital adjustment (Zhou et al., 2011). Marital adjustment was reported to be associated with spousal caregiver burden and distress (Shanmugham, Cano, Elliott, & Davis, 2009; Williams, 2011). It has been reported that spousal caregivers have significantly more changes in their marital relationship over time than noncaregivers (Davis et al., 2011; Zhou et al., 2011). To develop effective strategies to increase the well-being of family caregivers, it is important to assess marital adjustment along the trajectory of caregiving. A reliable and valid marital adjustment instrument is vital to determine the extent to which marital adjustment influences psychological health in family caregivers.

Researchers have been trying to clearly define marital adjustment and understand which factors contribute to a well-adjusted marriage, even though no consensus has been reached. A brief definition of marital adjustment was made by Locke and Wallace (1959) as "accommodation of a husband and wife to each other at given time" (p. 251). By contrast, Burgess and Cottrell (1939) had more details on the definition of marital adjustment as "the integration of the couple in a union in which the two personalities are not merely merged, or submerged, but interact to complement each other for mutual satisfaction and the achievement of common objectives" (p. 10). Marital adjustment in the study of persons with PMBT and their family caregiver was defined as the degree to which partners perceive support and congruence in their relationship. This definition covered both accommodation and interaction between the couple. Factors constituting marital adjustment have been extensively examined based on Burgess and Cottrell's formulation and considered to include agreement, cohesion, satisfaction, affection, and tension (Yoshinori, 2000).

Marital adjustment has been measured as both a unidimensional and multidimensional concept. Unidimensional marital adjustment assumes only one factor within the test, the general satisfaction of marriage. Multidimensional marital adjustment tests include multiple factors and the construct is measured by different subdimensions (Chung, 1990). Burgess and Cottrell (1939) first adopted the method of factor analysis to assess predictive factors of marital success and extracted five factors (agreement; common interests and joint activities; affection and mutual confidences; complaints; and feelings of being lonely, miserable, and irritable) from 28 of their 97 marital-prediction variables. Locke and Williamson (1958) conducted a factor analysis of their 20-item Marital Adjustment Test, extracting eight factors with only five interpretable. These five factors were Companionship (or Couple Sufficiency), Agreement (or Consensus), Affectional Intimacy (or Emotional Adjustment), Masculine Interpretation (or Wife Accommodation), and Euphoria (or Halo Effect). Although multidimensional measures may be able to assess the marital adjustment from various aspects of the marriage, they have been criticized because the conceptual domain for their content-specific components is not well supported. It is believed that couples from different backgrounds may have different evaluative criteria for a well-adjusted marriage. It suggests that multidimensional marital adjustment tests may need to be reevaluated when they are applied to a new population.

The conceptual model used to guide the study of caregivers for persons with PMBT was the Adapted Pittsburgh Mind Body Center Model (Sherwood et al., 2008), which describes how disease characteristics of a PMBT may trigger psychobehavioral and subsequent biologic responses in caregivers and lead to changes in their overall health. Marital adjustment, as one of social attributes, may influence caregiver's psychobehavioral response (e.g., depressive symptoms, burden, or sleep). In addition, being in the role of both the spouse and the caregiver, the perspective of caregivers of a successful marriage may not be the same as that from the general population. Considering the heavy responsibility of caregiving, a short version of test may be appropriate to rapidly assess their marital adjustment. This study was to evaluate the factor structure of the short version of Locke-Wallace Marital-Adjustment Test and its reliability and validity in caregivers for patients with PMBT.

PROCEDURES FOR INSTRUMENT DEVELOPMENT

Based on the findings of a factor analysis of their 20-item Marital Adjustment Test, Locke and Wallace (1959) created a shortened version of the Marital Adjustment Test (LWSMAT) by eliminating duplicate items and selecting items that were considered most fundamental to measure marital adjustment. This short test has 15 items, including measures of the overall happiness in the marriage, the degree of agreement between the spouses in various matters, how they resolve conflicts, the choice of shared activities, and their expectations about the marriage. Previous factor analyses have suggested that the LWSMAT may be primarily unidimensional, because most items load on one factor (Cross & Sharpley, 1981; Freeston & Plechaty, 1997). The reliability and validity of the LWSMAT was originally tested among 118 husbands and 118 wives (not related spouses) recruited from the Los Angeles area (Locke & Wallace, 1959). The sample was primarily young, White, well educated, and professional. Reliability was found to be .90 using the split-half technique and corrected by the Spearman-Brown formula, indicating that this scale has high internal consistency (Urbina, 2004). Validity was supported by a significant difference between well-adjusted and maladjusted groups. Spanier (1972) reexamined the reliability of the LWSMAT and did not get the same high reliability (Cronbach's $\alpha = 0.77$). The range of reliability has been reported as 0.72–0.83 (Cross & Sharpley, 1981; Spanier, 1972; White, Stahmann, & Furrow, 1994). Freeston and Plechaty (1997) confirmed the validity of the scale by illustrating a significant difference from the satisfied and dissatisfied marriage sample for both men and women. However, there have been concerns that the artificially defined two group sample (well-adjusted and maladjusted) would inflate the scale's ability to discriminate among couples (Sabatelli, 1988).

DESCRIPTION, ADMINISTRATION, AND SCORING OF THE LWSMAT

The LWSMAT is a 15-item self-administered test that can be completed in approximately 5 min. It can also be administered by the interviewer through telephone. It is available in a paper-and-pencil format and an electronic edition. The first item of the test measures global happiness; the next 8 items address agreement on specific matters such as finances, recreation, affection, friends, and philosophy of life; and the remaining 6 items address specific choices and feelings regarding the marriage and the respondent's spouse. The test use various response formats, including 7-point (Item 1), 6-point (Items 2–9), and 4-point

(Items 11, 13, and 15) Likert-type scale, and 3- and 2-choice responses (Items 10, 14, and 12). A complex scoring system is used in the LWSMAT, including 10 different weights for all 15 items. For example, the scoring of Item 12 depends on the agreement between the spouses. It is calculated as 10 = stay at home for both, 3 = on the go for both, and 2 = disagreement. The total scores are the sum of each item and range from 2 to 158 (Locke & Wallace, 1959). For the purpose of this psychometric analysis, unweighted raw responses were used.

METHODS

Sample and Procedures

Data were obtained from a descriptive longitudinal study (R01 CA117811) that explored the interrelationships between caregiver-care recipient characteristics and psychological responses in caregivers of persons with a PMBT ($N = 134$). Data was collected within a month of diagnosis. Caregivers were identified by the patient and eligible for participation if they were nonprofessional, at least 21 years old, and not providing care for any other adults. Questionnaires were administered via telephone interview by trained interviewers, who read items in the instrument to the participant and recorded the participant's responses. For this analysis, participants who stated that they were not currently involved in a marriage or a marriage-like relationship were excluded from analysis ($n = 16$). Among 118 participants, responses to three items were missing from 3 participants. In these cases, the missing responses were substituted by the mean response value of the sample for that item.

Data Analyses

Descriptive statistics were used to examine the sociodemographic characteristics of the sample. Univariate normality of each item of the LWSMAT was assessed by Shapiro-Wilk tests, histograms, and Q-Q plots. Multivariate outliers were screened using the Mahalanobis distance method. Four cases were identified as influential and were removed from the analysis (Schinka, Velicer, & Weiner, 2003). Data from the remaining 114 participants were used for the psychometric analyses.

Approaches to Reliability and Validity Assessments

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity were conducted. A minimum value of .60 of KMO and significant Bartlett's test were used to indicate appropriateness of the factor analysis results (Kaiser & Rice, 1974; Tabachnick & Fidell, 2001). An inter-item correlation matrix was also evaluated for item multicollinearity ($r \geq .80$) and insufficient correlation ($r < .30$; Pett, Lackey, & Sullivan, 2003).

The underlying factor structure of the test was examined by principal axis factoring (PAF) with oblique promax rotation. The selection of extracted factors was based on Kaiser's criterion (Kaiser, 1960), retaining all factors with eigenvalues greater than 1. In addition, a scree plot was used to graphically determine the optimal number of factors (Cattell, 1966). The percentages of total variance explained by factors and the number of extracted factors from prior literature were also considered for the decision of the ultimate number of factors.

Item loadings greater than .40 were considered sufficient factor loadings (Pett et al., 2003). Cross-loading items were identified and evaluated when one item loaded at .32 or higher on two or more factors (Tabachnick & Fidell, 2001).

Reliability was assessed for the generated factors to determine if each subscale measured a similar construct. Construct validity tests were conducted to assess convergent and discriminant validity between each generated factor and subscales of the Caregiver Reaction Assessment (CRA). The CRA is a measure of the impact of providing care on several areas of the caregiver's life (Stommel, Wang, Given, & Given, 1992). Two subscales of caregiver burden, self-esteem and schedule burden, were used in this analysis. The self-esteem subscale (7 items) measures the caregivers' feelings of value or worth, for example, Item 16 "I enjoy caring for (patient's name)." The schedule burden subscale (5 items) assesses the extent to which providing care interrupts or interferes with the caregiver's regular activities. The reliability and validity of two subdimensions of CRA were tested and established by a previous study (Cronbach's alpha = 0.90 and 0.82, respectively; Given et al., 1992). All analyses were conducted using PASW Statistics 18 (SPSS Inc., 2009, Chicago, IL). All significance tests were evaluated at $p < .05$ with two-sided tests.

RESULTS

Sample Characteristics

Descriptive analyses revealed that most caregivers were the spouse/significant other of the care recipient (83.3%, $n = 95$). The sample was primarily female (71.9%, $n = 82$), White (96.5%, $n = 110$), currently employed (56.2%, $n = 64$), and had at least a high school education (80.7%, $n = 92$). The average age of caregivers was 52 years ($SD = 11.5$), and they were married or in a relationship for an average of 23.8 years ($SD = 14.3$; see Table 1).

The KMO value of .75 and a significant Bartlett's test of sphericity ($p < .001$) indicated that the sample size of 114 was adequate. The absolute values of inter-item correlations ranged from .006 (between Item 12a and Item 4) to .622 (Item 7 and Item 8). No inter-item correlation was higher than .80, which eliminated the possibility of item redundancy. However, there were several weak inter-item correlations ($< .30$), which indicated that it was possible that more than one factor would be generated (Pett et al., 2003). Three items (Items 12a, 12b, and 10) had very low item-total correlations ($r = .107$, $r = .062$, and $r = .288$, respectively), indicating potential incongruence between these three items and the overall concept that the test is measuring (Instructional Assessment Resources, 2011), which suggests that three items may be problematic in measuring marital adjustment for the population.

Factor Structure

Five factors were extracted by the PAF with promax rotation, which explained 60.55% of total variance. The scree plot also supported five factors with eigenvalues greater than 1. Communalities of all items ranged from .187 (Item 12a) to .709 (Item 7). Item loadings from both the pattern matrix and structure matrix showed similar item clustering patterns. However, more cross-loadings were seen in the structure matrix. Because extracted factors

were intercorrelated in this analysis, the pattern matrix was used mainly for item interpretation (Pett et al., 2003).

Five items (Items 13, 1, 14, 9, and 2) sufficiently loaded on Factor 1 (loadings $>.40$), representing general satisfaction with the marriage or the partner (high loadings from Items 13, 1, and 14) and consensus on issues that need better communication (i.e., Item 9 about spouse's family and Item 2 about family finance). Factor 1 was therefore labeled as Contentment & Communication. Items 15 (confiding in your partner) and 10 (conflict solution) did not have high loadings on any factor. However, they did have slightly strong loadings on Factor 1 (.324 and .296, respectively). Based on content, communication with the partner and resolving conflicts through communication were retained for Factor 1. Item 11 (engaging in outside interests), Item 5 (consensus over friends), and Item 3 (consensus over recreation) had sufficient loadings on Factor 2—which was interpreted as Leisure & Sociality—because these three items mainly dealt with recreation and social activities. Factor 3 (including Items 4 and 6) was labeled *Intimacy* because of its assessment in affection (Item 4) and sexuality (Item 6). Factor 4 (including Items 7 and 8) was labeled as Shared Philosophy based on their similar content of agreement in conventionality (Item 7) and philosophy (Item 8).

Items 12a and 12b, assessing preference in leisure time, produced high loadings on Factor 5; however, these two items were found to measure the same topic from both the participant and the partner's perspectives. Considering the low inter-items ($r = -.006 \sim .279$), item-total correlations ($r = .107$ and $.062$), and low communalities (.187 and .458) of these two items, Factor 5 was tentatively dropped from the scale and the factor analysis was rerun for the remaining 14 items. The new generated factors and item-factor loading distribution displayed a similar structure as before, which shows that the removal of Items 12a and 12b did not change the factor structure of the entire scale. The content of Items 12a and 12b seems to be more closely related to Factor 2 (Leisure & Sociality); however, these two items had a very low loading on Factor 2 ($r = .042$ and $-.114$). Therefore, the extracted Factor 5 (including Items 12a and 12b) was dropped from the final interpretation (see Table 2).

Reliability and Validity

Internal consistency reliability of four factors was assessed by Cronbach's alpha (see Table 3). Item 5 was deleted from Factor 2 and the overall alpha decreased from .628 to .440. Meanwhile, when Item 5 was dropped from Factor 4, the alpha of Factor 4 did not demonstrate a large decrease (.627 to .626). This suggested that Item 5 should be included in Factor 2 (Raykov, 2008).

CRA self-esteem and CRA schedule burden were used to evaluate convergent and discriminant validity of the factors of the LWSMAT (see Table 4). The significant correlation between the Contentment & Communication factor and the self-esteem subscale ($r = .283$) indicates that contentment and communication factors of marital adjustment are consistent with caregiver's feelings of value or self-worth in providing care to a loved one (e.g., "I enjoy caring for [patient's name]"). Although the significant correlation between this factor and the schedule burden subscale of ($r = -.350$) indicates contentment is negatively associated with intensive caregiving activities. Schedule burden was also found

to be moderately and negatively related to the factor of Leisure and Sociality ($r = -.428$). It is understandable that caregiving may interfere with the leisure and sociality of normal life. Predictably, schedule burden was not correlated with Shared Philosophy ($r = -.041$) because the two constructs measure very different concepts. The correlation between intimacy and CRA self-esteem was also very low ($r = .065$), which provided evidence of discriminant validity.

DISCUSSION

The LWSMAT has been used as a rapid measure of marital quality in research for more than five decades with high reliability and validity established in the general population (Cross & Sharpley, 1981; Freeston & Plechaty, 1997; Locke & Wallace, 1959; Spanier, 1972; White et al., 1994). However, social values and family functions in relationships have changed dramatically in the past few decades. The items that were designed in the 1950s to measure marital adjustment may not be appropriate to measure the marital life in the 21st century. Prior studies have noticed that some items might be dated (Cohen, 1985; Fredman & Sherman, 1987). In this analysis, both Items 10 and 12 seem to be problematic with low item-total correlations, low communalities, and low item loadings. The drop of Item 12 also did not change the construction of factors of the measure. This result is consistent with previous findings (Fredman & Sherman, 1987).

This study evaluated the psychometric properties of the LWSMAT among caregivers for persons with a PMBT. Four factors were identified in this study, more factors extracted than prior studies (Cross & Sharpley, 1981; Freeston & Plechaty, 1997). Our findings suggest that multidimensions of marital adjustment are more possible in caregivers of persons with PMBT than in the general population. One of common critiques for the LWSMAT is that this scale includes items that are conceptually distinct from one another (Bradbury, Fincham, & Beach, 2000; Fincham & Linfield, 1997). The impact of the distinction between items could become remarkable when the test is applied for a particular group such as in the population of caregivers of persons with a PMBT. Caregivers' specific behaviors might be profoundly influenced by care recipients' cancer and treatment, caregiving burden, and distress. Marital adjustment measures based on items related to some of caregivers' specific behaviors may not be able to be consistent with the measures from general subjective items. The inconsistent responses from the two parts of the same scale should be the main cause of the weak inter-item and item-total correlations in this study as well as the main reason more factors were extracted in this particular sample than in studies of the general population.

Four factors generated in this study represent appropriately four subscales of the LWSMAT in this particular population. The first subscale of Contentment & Communication is a mix of the assessment of global satisfaction of marriage and communication in marital life, which may partially correspond to factors extracted from the Locke and Williamson (1958) 20-item instrument, Companionship, Agreement, and Euphoria. Considering the particular population of this study, communication with the care recipient may become more difficult and the care recipient's impaired function may potentially compromise the general satisfaction of marital life. It is understandable that the assessment of the general marital relationship uses a subscale that combines a measure of the *contentment* of marriage and the

quality of mutual *communication*. The restriction of leisure and social activities and the change in the level of intimacy have been reported to impact the marital quality in spousal caregivers (Lindau, Surawska, Paice, & Baron, 2011; Ussher et al., 2011). The measure of these changes could be represented by the subscales of Leisure & Sociality and Intimacy. Sharing the same philosophy is frequently identified by couples as important to their marriages (Fenell, 1993; Lauer, Lauer, & Kerr, 1990). As indicated in this study, the subscale of Shared Philosophy is appropriate to measure this important characteristic of marital relationship.

In this analysis, the values of Cronbach's alpha of four generated factors ranged from 0.626 to 0.741, which seemed not to be very high considering the widely accepted cutoff of alpha as 0.70 in social science (Nunnally, 1978), especially for the alpha of Leisure & Sociality and Shared Philosophy ($\alpha = 0.626$ and $\alpha = 0.628$, respectively). Alpha is dependent not only on the magnitude of the correlations among items but also on the number of items in the scale (Streiner & Norman, 2003). Considering two factors both contain only two items, the alpha values of Leisure & Sociality and Shared Philosophy in this exploratory study are acceptable.

Convergent and discriminant validity were evidenced by correlations with subdimensions of the CRA. Contentment & Communication measures the caregivers' general satisfaction with the relationship and the impact of communication on caregiving; therefore, it should be related to the measure of the caregiver's general value of caregiving (self-esteem) and negatively related to impact of caregiving on caregivers' routine activities (schedule burden), which were supported by the data.

In summary, four factors extracted in this analysis have appropriately interpreted the multiple-dimensional construction of marital adjustment among caregivers for persons with a PMBT. As a short version scale with limited items, the LWSMAT has presented acceptable internal consistency and construct validity in assessing marital adjustment in this population.

Limitations

In this study, more female caregivers were included in the sample (72%), therefore biasing results toward representing the measurement of marital satisfaction in females. According to a previous study, a higher percentage of marital relationships ended when the woman was the affected partner compared with those when it was the man (Glantz et al., 2009). This analysis was not separately conducted on female and male sample group because of smaller number of males in the sample.

Another limitation of this study may be the lack of assessment of test-retest reliability for the stability of the LWSMAT in caregivers for persons with a PMBT. Marital quality among healthy couples is likely to be moderately stable for at least a 3-month period (Manne, Alfieri, Taylor, & Dougherty, 1999). In this study, care recipients' cancer and treatment may have interfered with caregivers' marital adjustment. A stable scale could help differentiate the real causal relationship or association between caregiving burden and marital adjustment.

Future Research

The findings from this analysis will help to better understand the underlying conceptual dimensions of the LWSMAT in the population of caregivers of persons with cancer. Future studies should be conducted to explore the impact of disease on caregivers' marital adjustment, especially in the aspects of contentment of marriage, the mutual communication between care recipients and caregivers, leisure and social activities, and intimacy and affection. The dynamics of marital adjustment between caregivers and care recipients at different points of the disease trajectory can be measured. The caregiver distress and burden that may be associated with certain dimensions of caregivers' marital adjustment can be specifically investigated. These may help to develop appropriate targeted interventions for the improvement of caregiver marital quality and caregiver well-being through particular marital adjustment dimensions.

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TABLE 1
Sample Sociodemographic Characteristics

Characteristics	<i>n</i>	%	Mean	<i>SD</i>
Age	114		51.9	11.5
Years of marriage	114		23.8	14.3
Gender				
Male	32	28.1		
Female	82	71.9		
Race				
White	110	96.5		
African American	1	0.9		
Relationship to the care recipient				
Spouse or significant other	95	83.3		
Parent	8	7.0		
Daughter/son	6	5.3		
Others	5	3.4		
Education				
High school graduate	92	80.7		
Employment status				
Full time	50	43.9		
Part time	14	12.3		
Laid off or unemployed	12	10.6		
Retired	24	21.0		
Full-time homemaker	9	7.9		
Number of children				
0	12	10.5		
1–3	80	70.2		
4–5	17	14.9		
Household income				
Less than \$30,000	16	14.1		
\$30,000–\$59,999	64	56.1		
More than \$60,000	30	26.3		

TABLE 2
Factor Structure Based on Pattern Matrix From PAF With Promax Rotation

Short Marital-Adjustment Test Items	Extracted Factors			
	Contentment & Communication	Leisure & Sociality	Intimacy	Shared Philosophy
13: Ever wish you had not married?	.773			
1: Degree of happiness	.727			
14: Married the same person if living life over	.576			
9: Consensus over spouse's family	.452			
2: Consensus over finances	.412			
15: Confiding in your partner?	.324			
10: Conflict solution	.296			
11: Engaging in outside interests together		.753		
5: Consensus over friends		.481		
3: Consensus over recreation		.407		
4: Consensus over affection			.876	
6: Consensus over sex relations			.593	
7: Consensus over conventionality				.858
8: Consensus over philosophy				.421
12b: Your preference in leisure time				.675
12a: Your partner's preference in leisure time				.437

TABLE 3
Summary of Internal Consistency Reliability of Five Factors

Factor	Cronbach's α	Items Included	If Any Item Deleted
Factor 1: Contentment & 240 Communication	0.741	Items 1, 2, 9, 10, 13, and 15	No increase in α
Factor 2: Leisure & Sociality	0.628	Items 3, 5, and 11	Deletion of the Item 5 decreased α to .440
Factor 3: Intimacy	0.718	Items 4 and 6	No increase in α
Factor 4: Shared Philosophy	0.627	Items 5, 7, and 8	Deletion of the Item 5 decreased α to .626
Factor 5 (Uninterpretable)	0.378	Items 12a, 12b, and 2	Deletion of the Item 2 increased α to .449

TABLE 4
Convergent and Discriminant Validity in Five Factors

Factors	CRA Self-Esteem	CRA Schedule Burden
Contentment & Communication	.283*	-.350*
Leisure & Sociality	.177	-.428*
Intimacy	.065	-.277*
Shared Philosophy	.188	-.041
Factor 5 (Uninterpretable)	.124	-.070

Note. CRA = Caregiver Reaction Assessment.

* Correlation is significant at the .01 level (two-tailed).