

Marital adjustment and psychological distress in Japan

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Angela Li
Briana L. Robustelli
Mark A. Whisman

University of Colorado Boulder, USA

Abstract

This study was conducted to examine the association between marital adjustment and psychological distress in a large, probability sample of married adults in Japan ($N = 710$) from the Midlife Development in Japan study. Results indicate that positive and negative dimensions of marital adjustment were significantly associated with dimensional and categorical measures of psychological distress. Furthermore, the associations between marital adjustment and psychological distress remained significant when statistically controlling for neuroticism, quality of friend and family relationships, and demographic variables. These results demonstrate that the well-established association between marital adjustment and psychological distress found in European American countries is also found in Japan. Findings support continued research on marital functioning and psychological distress in East Asian countries.

Keywords

Japan, K6, marital adjustment, MIDJA, psychological distress

There is a well-established association between the quality of intimate relationships, such as marriage, and psychological distress. For example, a meta-analysis of 93 studies found that poorer marital adjustment was associated with greater psychological distress, including symptoms of depression and anxiety, low self-esteem, and other psychological

Corresponding author:

Angela Li, Department of Psychology and Neuroscience, University of Colorado Boulder, 345 UCB, Boulder, CO 80309, USA.

Email: angela.li@colorado.edu

symptoms across both cross-sectional and longitudinal research (Proulx, Helms, & Buehler, 2007). Poor marital adjustment can contribute to psychological distress, as it can serve as a source of chronic stress (Whisman & Baucom, 2012) and conversely, psychological distress can contribute to poor relationship outcomes through disruption of family routines, restriction of social and leisure activities, and emotional responses to the behavior of distressed individuals (e.g., Benazon & Coyne, 2000).

Most of the research on relationship adjustment and psychological distress has been conducted in European American countries. To date, we are aware of only a handful of studies that have examined the association between marital adjustment and psychological distress in East Asian countries. A study conducted in Singapore found that marital dissatisfaction was positively associated with concurrent depressive symptoms (Sandberg, Yorgason, Miller, & Hill, 2012), and a study conducted in China found that wives' and husbands' marital dissatisfaction was positively associated with their own and their partner's depressive symptoms (Miller et al., 2013). However, another study of older married Chinese couples (aged 57 to 88) found that whereas husband's marital dissatisfaction was positively associated with wives' depressive symptoms, no association was found between one spouse's marital dissatisfaction and their own level of depressive symptoms (Wang, Wang, Li, & Miller, 2014). Two studies conducted in Hong Kong also found that poorer marital adjustment and greater dissatisfaction were positively associated with more psychiatric symptoms and midlife crisis symptoms, lower levels of purpose in life, life satisfaction, and perceived health in a cross-sectional (Shek, 1995) and a longitudinal (Shek, 2000) analysis.

In the current study, we examined the association between marital adjustment and psychological distress in a probability sample of adults from Japan. Because European American countries and Japan vary greatly in terms of their historical and cultural backgrounds, the study was conducted to extend the body of research on relational aspects of individual functioning in East Asian countries.

Japan versus European American countries

European American countries tend to have higher rates of divorce than Japan. In 2011, the crude divorce rate was 1.8 in Japan, compared to 2.8 in the U.S., 2.6 in Denmark, 2.5 in Sweden, 2.3 in Germany, 2.2 in Spain, 2.1 in France and the United Kingdom, and 2.0 in the Netherlands (United Nations Statistics Division, 2013). In addition, Japan is currently one of the latest marrying societies in the world (National Institute of Population and Social Security Research [NIPSSR], 2005), which is explained by an increasingly educated population of Japanese women and fewer eligible educated men (Raymo & Iwasawa, 2005). Japan also has a long history of arranged marriages. In 1990, 25% to 30% of marriages were arranged (Kinjo, 1990). However, this rate has dropped to 6.4%, as the number of "love marriages" increase (NIPSSR, 2005).

Cultural differences may influence what is important for romantic relationships in Japan as compared to European American countries. For example, romantic love has historically been of less importance as a basis for marriage, and the idea of psychological intimacy has been less important for marital satisfaction and well-being in Asian countries (Japan, China, and India) compared to European American countries (Canada

and the U.S.; Dion & Dion, 1993). Kamo (1993) found that rewards from marital interactions were considered equally important in the U.S. and Japan, but socioeconomic (instrumental) aspects were more important in Japan such that husband's income was significantly associated with both spouses' marital satisfaction, but was not associated with marital satisfaction for American spouses. Therefore, the metrics that determine what comprises a satisfying relationship may be different between Japan and European American countries, although these differences may be shifting as the number of love marriages increase in Japan.

Rival explanations for associations between marital adjustment and psychological distress

Although prior studies have found associations between marital adjustment and psychological distress (Proulx et al., 2007), few studies have attempted to rule out rival explanations for this association. Neuroticism is a well-known risk factor for poor marital adjustment and psychological distress that may be important to account for in evaluating the association between these constructs. Neuroticism is defined as a major domain of personality that contrasts adjustment or emotional instability with maladjustment or emotional stability (Costa & McCrae, 1985). It also indicates a tendency toward unrealistic ideas, inability to control urges, and inefficient ways of coping with stress. Prior research has found that neuroticism has a robust association with relationship adjustment, with higher neuroticism being associated with lower relationship adjustment (Heller, Watson, & Ilies, 2004). Similarly, neuroticism is strongly associated with multiple indices of individual mental health, including anxiety, depressive, and substance use disorders (Kotov, Gamez, Schmidt, & Watson, 2010). Therefore, research is needed to examine whether the association between marital adjustment and psychological distress remains significant when statistically controlling for neuroticism.

Additionally, few studies have tested the specificity of the association between marital adjustment and psychological distress by exploring whether this association remains statistically significant when accounting for quality of other relationships (e.g., family and friends). Prior research has shown that romantic relationship quality is associated with the quality of relationships with family and friends (e.g., Uebelacker & Whisman, 2006), and quality of relationships with family and friends has been found to be associated with well-being (e.g., Walen & Lachman, 2000). Therefore, research is needed to evaluate whether the association between marital adjustment and psychological distress is specific to marriage through testing whether this association remains significant when statistically controlling for quality of one's relationships with family and friends.

Current study

The purpose of the current study was twofold. First, given that the association between marital adjustment and psychological distress remains largely unexplored in East Asian societies, we extend existing research on these constructs by evaluating the association between marital adjustment and psychological distress in Japan. We examined both

positive and negative marital adjustment as operationalized by perceived frequency of positive and negative exchanges or interactions with one's partner, as there is evidence suggesting that relationship quality consists of separable positive and negative dimensions (Fincham & Rogge, 2010). Second, given the limited research regarding rival explanations for, and specificity of, this association, we examined whether the association between marital adjustment and psychological distress would remain statistically significant after statistically controlling for personality (neuroticism) and quality of relationships with family and friends. We hypothesized that marital adjustment would be associated with dimensional and categorical measures of psychological distress and that this association would remain statistically significant after controlling for personality and quality of relationships with family and friends. Further, we also evaluated whether the association would remain significant after controlling for age, gender, education, and length of relationship, given their potential importance in understanding individual differences associated with both marital adjustment and psychological distress.

Method

Participants

Participants were drawn from the Midlife Development in Japan (MIDJA; Ryff et al., 2008) study, which is a probability sample of noninstitutionalized, Japanese-speaking adults aged 30–79 years from the Tokyo metropolitan area, and data were collected in 2008. The sample included 724 married participants, of whom 8 people (1% of the sample) were excluded because of missing data (i.e., missing > 50% of the items on one or more scales), leaving a final sample of 716 people. Compared to those participants included in the analyses, people who were excluded because of missing data were older, had been married longer, and had less education ($p < .05$), and there were no differences in gender distribution. The final sample consisted of 344 women (48.0% of the sample) and 372 men, and 14 people were currently separated from their spouse. On average, participants were 55.12 years old ($SD = 13.58$), had 13.57 years of education ($SD = 2.54$), and had been married for 26.70 years ($SD = 14.66$).

Measures

Psychological distress. Psychological distress was assessed with the K6 (Kessler et al., 2002), a 6-item screening instrument for nonspecific psychological distress. Respondents rated how often they had experienced symptoms of psychological distress (*nervous, hopeless, restless, depressed, finding everything to be effortful, and worthless*) during the past 30 days. Items were rated on a 4-point scale, ranging from *none of the time* to *all the time*. Item scores were summed to give a total score, which had a range of 0 to 24, with higher scores indicating more severe distress. A cut point of ≥ 13 has typically been used for case threshold for *serious psychological distress*. The measure differentiates between community cases and non-cases of DSM-IV disorders based on diagnostic interviews (Kessler et al., 2002), including differentiating depressed from nondepressed individuals in the general population (Cairney, Veldhuizen, Wade,

Kurdyak, & Streiner, 2007). The K6 has been translated for use internationally and differentiates people with mental disorders based on diagnostic interviews from people without mental disorders across countries (Kessler et al., 2010); a Japanese version of the K6 included in the World Health Mental Health Survey Japan differentiated people with mood and anxiety disorders from people without these disorders (Furukawa et al., 2008). Cronbach's α value in this sample was .83.

Positive and negative marital adjustment. Marital adjustment was assessed with two 4-item scales, one measuring positive, supportive interactions with spouse (e.g., how much can you rely on them if you have a serious problem, how much can you open up to them if you need to talk about your worries) and the other measuring negative, unsupportive interactions (e.g., how often do they make too many demands on you, how much do they criticize you). Items were rated on a 4-point scale (a lot, some, a little, or not at all), and they were reverse scored, so that higher scores indicate higher standing on each item. Prior research has shown that the positive and negative marital adjustment scales are internally consistent and correlate highly with other measures of marital adjustment (Whisman & Li, in press).

To evaluate the factor structure of the measure, we used principal factor analysis and oblique (promax) rotation because we expected that the positive and negative marital adjustment factors would be correlated with one another, similar to what has been found in prior research (e.g., Whisman & Li, in press). Results from scree plots and eigenvalues >1.0 indicated a clear two-factor solution, with the 4 positive items loading on one factor and the 4 negative items loading on the other factor. The factor loadings were clear with high factor loadings (ranging from .66 to .90) and cross-factor loadings that were all $<|.16|$. The eigenvalues for the first and second factors were 4.19 and 1.61, respectively, and together the two factors accounted for 72.42% of the variance. The correlation between the two factors was $-.52$. Cronbach's α for the positive and negative marital adjustment scales were .91 and .82, respectively.

Positive and negative family and friend relationship quality. Quality of relationships with family members (not including one's spouse) and friends was measured with items that were parallel with those used for measuring marital adjustment. Principal factor analysis and oblique (promax) rotation were used to evaluate the factor structure of the item sets. Two factors were extracted for the family and friend domains based on scree plots and eigenvalues >1.0 , with the 4 positive items loading on one factor and the 4 negative items loading on the other factor. For the family domain, factor loadings ranged from .67 to .84 and cross-factor loadings were all $<|.10|$; the eigenvalues for the first and second factors were 3.09 and 2.40, respectively, and together the two factors accounted for 68.64% of the variance. For the friend domain, factor loadings ranged from .53 to .83 and cross-factor loadings were all $<|.20|$; the eigenvalues for the first and second factors were 2.95 and 2.19, respectively, and together the two factors accounted for 64.24% of the variance. Cronbach's α for the positive and negative family relationship quality scales were .83 and .86, respectively, and the corresponding figures for the positive and negative friend relationship quality scales were .84 and .76, respectively.

Table 1. Descriptive statistics for study measures and bivariate associations with psychological distress.

Variable	Mean	SD	Bivariate association with psychological distress	
			Dimensional assessment ^a	Categorical assessment ^{b,c}
Marital adjustment				
Positive	2.87	.76	-.16***	0.39**
Negative	2.27	.60	.26***	4.28**
Family quality				
Positive	2.57	.65	-.06	0.79
Negative	1.85	.59	.14**	1.41
Friend quality				
Positive	2.52	.63	-.02	1.21
Negative	1.65	.47	.23***	5.36**
Neuroticism	1.96	.65	.39***	5.29***

^aTabled values are β s.

^bSerious psychological distress.

^cTabled values are odds ratios.

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

Neuroticism. Neuroticism was measured with a 4-item adjective measure (*moody, worrying, nervous, and calm*) that was developed from existing personality trait lists and inventories (Lachman & Weaver, 1997). It has good construct validity (Mroczek & Kolarz, 1998) and significantly correlates with the NEO (Prenda & Lachman, 2001). Items were rated on a 4-point scale and were reverse scored as necessary before averaging, so that higher scores indicate higher standing on the scale. The *calm* item was weakly associated with the other items, so it was not included in the final version of the scale. Cronbach's α value for the 3-item measure was .60.

Results

Descriptive statistics for the study measures are presented in Table 1. The mean level of psychological distress on the K6 was 3.66 ($SD = 3.46$), and the prevalence of serious psychological distress was 1.8%, which was smaller than the 6.7% prevalence obtained in another probability sample in Japan (Kuriyama et al., 2009). Differences in prevalence of serious psychological distress in the two samples may be due to differences between the samples in demographic characteristics (i.e., the MIDJA sampled adults aged 30–79 years from the Tokyo metropolitan area in 2008, whereas the other study sampled adults aged ≥ 40 years from Ohsaki City in 2006).

To evaluate the association between marital adjustment and the dimensional assessment of psychological distress, we used linear regression and regressed the dimensional K6 score on positive and negative marital adjustment in separate analyses. We followed Aiken and West's (1991) recommended top-down approach for testing moderation and first evaluated whether the association between marital adjustment and psychological distress was moderated by gender. However, after controlling for the component terms, the Gender \times Marital Adjustment interaction term was not

Table 2. Association between marital adjustment and dimensional and categorical assessment of psychological distress.

Predictor variable	Dimensional psychological distress ^a				Categorical psychological distress ^{b,c}			
	Positive adjustment		Negative adjustment		Positive adjustment		Negative adjustment	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Age	.12	.09	.11	.10	1.08	1.15*	1.09*	1.15*
Gender (female)	.08	.12**	.07	.12**	0.98	2.67	1.08	4.00
Education	-.06	-.06	-.09*	-.10*	0.93	1.02	0.88	0.86
Length of relationship	-.25*	-.15	-.21*	-.13	0.92*	0.90*	0.92*	0.92
Neuroticism		.42***		.37***		7.88**		9.39**
Family quality		-.06		.01		0.95		1.06
Friend quality		.01		.09*		1.03		2.39
Marital adjustment	-.15***	-.15***	.26***	.21***	0.42*	0.28*	4.27**	4.12*

Note. Positive family and friend relationship quality entered into analyses involving positive marital adjustment; negative family and friend relationship quality entered into analyses involving negative marital adjustment.

^aTabled values are β s.

^bSerious psychological distress.

^cTabled values are odds ratios.

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

significantly associated with dimensional K6 scores for either positive ($\beta = -.04$, $p = .41$) or negative marital adjustment ($\beta = .01$, $p = .81$). Therefore, data were collapsed across gender for the remainder of the analyses for the dimensional K6 scores. In Model 1, age, gender (0 = *male*; 1 = *female*), education, and length of relationship were held constant. In Model 2, neuroticism and quality of relationships with family and friends were also held constant. Results from the regression analyses are presented in Table 2. As can be seen in Table 2, positive marital adjustment was significantly and negatively associated with psychological distress, whereas negative marital adjustment was significantly and positively associated with psychological distress. Furthermore, results from Model 2 suggest that these associations remained significant when controlling for their shared association with demographics, neuroticism, and general social functioning as measured by quality of relationships with family and friends.

To evaluate the association between marital adjustment and the categorical assessment of psychological distress (i.e., serious psychological distress), we used logistic regression analyses, in which the categorical K6 score was regressed on positive and negative marital adjustment in separate analyses. We first evaluated whether the association between marital adjustment and serious psychological distress was moderated by gender. However, after controlling for the component terms, the Gender \times Marital Adjustment interaction term was not significantly associated with categorical K6 scores for either positive (odd's ratio (OR) = .61, $p = .51$) or negative marital adjustment (OR = .83, $p = .84$). Therefore, data were collapsed across gender for the remainder of the analyses for the categorical K6 scores. In Model 1, age, gender, education, and

length of relationship were held constant, whereas neuroticism and quality of relationships with family and friends were also held constant in Model 2. Results from the logistic regression analyses are presented in Table 2. As can be seen in Table 2, positive marital adjustment was significantly and negatively associated with serious psychological distress, whereas negative marital adjustment was significantly and positively associated with serious psychological distress. Results were statistically significant in both Model 1 and Model 2, suggesting that marital adjustment was associated with serious psychological distress and that these associations were incremental to any shared association with demographics, neuroticism, or quality of relationships with family and friends.

Data for quality of relationships with family members were missing from 188 people who did not complete the items because the instructions in the interview were to skip these questions if participants only had family members who lived with them. Because these people were excluded from the analyses reported in Table 2 due to missing data on family relationship quality, we reran the analyses, excluding family relationship quality. After statistically controlling for demographic variables, neuroticism, and friend relationship quality, the dimensional assessment of psychological distress was significantly associated with positive marital adjustment ($\beta = -.14, p < .001$) and negative marital adjustment ($\beta = .19, p < .001$); similarly, when adjusting for these covariates, serious psychological distress (i.e., the categorical K6) was significantly associated with positive marital adjustment (OR = 0.42, $p = .015$) and negative marital adjustment (OR = 3.90, $p = .009$).

Discussion

The current study was conducted to examine two questions. The first was to examine whether marital adjustment and psychological distress were associated in a Japanese sample, as has been found in European American samples. The second question was to evaluate whether any observed association would remain statistically significant after controlling for neuroticism and quality of relationships with friends and family members. The main findings from the study were that lower positive marital adjustment and higher negative marital adjustment were associated with higher levels of psychological distress, measured on a continuum and categorically in terms of serious psychological distress, and that these associations remained statistically significant when controlling for demographic variables, neuroticism, and quality of relationships with family and friends.

Results from the study are noteworthy for several reasons. First, the measure of psychological distress used in the current study—the K6—was developed as a brief screening measure of nonspecific psychological distress that has been used in several countries for public health surveillance purposes and population estimates of mental health problems (Kessler et al., 2002) and has been translated into several languages and included in worldwide epidemiological studies such as the World Health Organization's World Mental Health Survey (Kessler et al., 2010). Although the K6 focuses on nonspecific psychological distress, most people with serious psychological distress meet diagnostic criteria for certain psychiatric disorders (e.g., mood and anxiety disorders; Furukawa et al., 2008; Kessler et al., 2002, 2010). Therefore, the results obtained in this study provide an important complement to the existing research that has evaluated

the association between marital adjustment and psychological distress measured by symptom-based questionnaires of depression, anxiety, and low self-esteem (e.g., Proulx et al., 2007) on the one hand, and psychiatric disorders measured by interview-based diagnoses (e.g., Whisman, 2007) on the other hand.

Second, the results from the study are noteworthy in that this is the first study known to us to examine the association between marital adjustment and psychological distress in Japan. The finding that marital adjustment was associated with psychological distress in Japan is consistent with previous studies exploring the association between marital adjustment and psychological distress in other East Asian countries such as Singapore and China (Miller et al., 2013; Sandberg et al., 2012; Wang et al., 2014), as well as with studies exploring the relationship between marital adjustment and psychological distress, well-being, and health in Hong Kong (Shek, 1995, 2000). The results extend this body of research in demonstrating that marital adjustment is also associated with psychological distress in another East Asian country. These results are noteworthy, given the cultural and historical differences between Japan and European American countries.

The current study also extends prior research on marital adjustment and psychological distress by testing whether this association remained significant after statistically controlling for neuroticism, which is a well-known correlate of both marital adjustment and psychological distress, and after statistically controlling for quality of relationships with family and friends. Therefore, the current findings represent an important advance in ruling out several major rival explanations for the association between marital adjustment and psychological distress. The current results are consistent with previous research conducted in the U.S., which found that the association between marital adjustment and multiple measures of well-being remained statistically significant after adjusting for personality traits, including neuroticism (Whisman, Uebelacker, Tolejko, Chataav, & McKelvie, 2006). The current results are consistent with a prior study conducted in Canada, which reported that marital adjustment was associated with mood, anxiety, and substance use disorders, controlling for quality of relationships with relatives and friends (Whisman, Sheldon, & Goering, 2000). These findings suggest that there is something specific about marital relationships relative to other important family and friend relationships, such as greater interdependence, which contributes to a unique association between marital adjustment and psychological distress. These results further imply that the association between marital adjustment and psychological distress is not simply accounted for by general social adjustment. The finding that marital adjustment was significantly associated with psychological distress when controlling for neuroticism and family and friend relationship quality increases confidence in the validity of the association between marital adjustment and individual functioning. Future research evaluating other potential confounding variables, such as stressful life events, would further increase confidence in the association between marital adjustment and psychological distress.

In interpreting the current findings, it is important to consider several limitations of the study. First, both marital adjustment and psychological distress were measured with self-report questionnaires in the current study, and multi-method research using observational or interview methods would help to establish that the observed association between marital adjustment and psychological distress is not the result of shared method

variance. Furthermore, because of the cross-sectional nature of the study, it cannot be determined whether poor marital adjustment is a cause, correlate, or consequence of psychological distress. Longitudinal studies have shown that marital adjustment is associated with longitudinal changes in psychological distress, including symptoms of depression, anxiety, low self-esteem, and other psychological symptoms (Proulx et al., 2007). Prospective research is needed to evaluate whether marital adjustment is similarly associated with longitudinal changes in psychological distress in East Asian countries such as Japan.

Overall, findings suggest that positive and negative dimensions of marital adjustment are associated with psychological distress in Japan and that these associations remain statistically significant when adjusting for neuroticism and quality of relationships with family and friends, thereby adding to the growing body of research that has found that marital adjustment covaries with psychological distress across cultures. Results support continued research on the association between marital adjustment and psychological distress in East Asian countries. If future studies indicate that poor marital adjustment precedes psychological distress in East Asian countries, as has been found in European American countries (Proulx et al., 2007), this would support research examining the effectiveness of couple-based interventions for the prevention and treatment of psychological distress in East Asian countries, as research conducted in European American countries has shown that such treatments are effective in treating a variety of psychological difficulties including mood, anxiety, and substance use disorders (for reviews, see Whisman, 2013; Whisman & Baucom, 2012).

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